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## ГИМНАСТИКА НА ЗАНЯТИЯХ ПО ФИЗИЧЕСКОЙ КУЛЬТУРЕ В ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЯХ

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**Аннотация:** В статье описывается методика проведения занятий по гимнастике в высших учебных заведениях, роль гимнастики как одного из средств физического воспитания, описываются основные цели и задачи гимнастики, упражнения гимнастики которые развивают физические качества у студентов, организация и проведение занятий по гимнастике, место гимнастики в системе физического воспитания.

**Ключевые слова:** гимнастика, гимнастические упражнения, физическое воспитание, физические качества, цели и задачи гимнастики.

**Annotatsiya:** Maqolada oliy o'quv yurtlarida gimnastika saboqlarini o'tkazish metodikasi, jismoniy tarbiya vositalaridan biri sifatida gimnastikaning roli, gimnastikaning asosiy maqsad va vazifalari, talabalarda jismoniy sifatlarini rivojlantiradi, gimning mashg'i va o'yiladi.

**Kalit so'zlar:** gimnastika, gimnastika mashqlari, jismoniy tarbiya, jismoniy sifatlar, gimnastikaning maqsad va vazifalari.

**Abstract:** The article describes the methodology for conducting gymnastics classes in higher educational institutions, the role of gymnastics as one of the means of physical education, describes the main goals and objectives of gymnastics, gymnastics exercises that develop physical qualities among students, the organization and conduct of gymnastics classes, the place of gymnastics in the physical education system.

**Key words:** gymnastics, gymnastics exercises, physical education, physical qualities, goals and objectives of gymnastics.

## Введение

В физическом воспитании особое место принадлежит гимнастике, обеспечивающей общее физическое развитие и совершенствование основных двигательных способностей человека. Гимнастику отличает многообразие упражнений, предоставляющих широкие возможности для наиболее успешного решения конкретных педагогических задач. Занятия различными видами гимнастики помогают решать одну из важнейших задач – обеспечить подготовку физически крепкого молодого поколения с гармоничным развитием физических и духовных сил.

Гимнастика – система специально подобранных физических упражнений, методических приемов, применяемых для укрепления здоровья, гармоничного физического воспитания и совершенствования двигательных способностей человека, его силы, ловкости, быстроты, выносливости, гибкости.

В физическом воспитании особое место принадлежит гимнастике, обеспечивающей общее физическое развитие и совершенствование основных двигательных способностей человека. Гимнастику отличает многообразие упражнений, предоставляющих широкие возможности для наиболее успешного решения конкретных педагогических задач. Занятия различными видами гимнастики помогают решать одну из важнейших задач – обеспечить подготовку физически крепкого молодого поколения с гармоничным развитием физических и духовных сил. Гимнастика – система специально подобранных физических упражнений, методических приемов, применяемых для укрепления здоровья, гармоничного физического воспитания и совершенствования двигательных способностей человека, его силы, ловкости, быстроты, выносливости, гибкости. Опыт педагогической и тренерской деятельности убедительно подтверждает, что будущие физкультурные кадры должны хорошо знать курс гимнастики, независимо от вида спорта, в котором они специализируются. Нет, пожалуй, ни одного вида спорта, где бы ни применялись гимнастические упражнения в различных целях: для общей и специальной физической подготовки или в виде упражнений, помогающих освоить технику основных движений избранного вида спорта.

Освоение методики обучения упражнениям и проведение занятий по гимнастике будут содействовать более успешному ведению учебного процесса в любом виде спорта, оптимальному управлению коллективом занимающихся. Содержание, задачи и развитие гимнастики на разных исторических этапах определялись экономическим строем и культурой общества. Наиболее высокий уровень развития гимнастика получила в древней Греции в период от 776 г. до н.

э. до 394 г. н. э. Греки открыли ее воспитательное свойство и сделали гимнастику источником античной красоты. Происхождение «гимнастики» связывается с греческим словом «гимназо» – упражняю, тренирую. На современном этапе гимнастика сложилась как стройная система методов и средств, направленных на всестороннее физическое развитие людей. Она располагает научной теорией, методикой, предусматривающих широкое использование гимнастических упражнений в разных звеньях системы физического воспитания. Она занимает важное место в программах физического воспитания высших и средних учебных заведений, коллективах физической культуры и добровольных спортивных обществах. Спортивной акробатикой, спортивной и художественной гимнастикой регулярно занимаются сотни тысяч детей, юношей и девушек. Гимнастика используется как средство лечения в медицине, применяется как средство оздоровления в домах отдыха, санаториях.

Гимнастика призвана решать образовательные, оздоровительные и воспитательные задачи.

1. К оздоровительным задачам относятся: гармоническое физическое развитие, укрепление здоровья, развитие физических качеств (силы, гибкости, выносливости, скорости, ловкости), развитие отдельных мышечных групп и всей мышечной системы: устранение и предупреждение функциональных отклонений в отдельных органах и системах организма; выработка правильной осанки, походки; общее развитие и укрепление органов дыхания и работы сердечно-сосудистой системы, улучшение обмена веществ и повышение жизнедеятельности организма.

2. К образовательным задачам относятся знания, умения и навыки, получаемые занимающимися в процессе выполнения упражнений. Так например, гимнаст знает название упражнения, технику их выполнения, какие способности развиваются, меры безопасности на занятиях, обладает бытовыми, профессиональными, военно-прикладными двигательными умениями и навыками.

3. К воспитательным задачам относятся: формирование волевых и нравственных качеств и эстетических чувств: коллективизма, дисциплинированности, смелости, решительности, целеустремленности, настойчивости, упорства, выдержки, ориентировки, инициативности, ощущения красоты форм и движений и др.

Выделяют спортивные виды, образовательно-развивающие и оздоровительные виды гимнастики. Спортивные виды гимнастики. К ним относятся спортивная гимнастика, художественная гимнастика, спортивная акробатика, спортивная

аэробика. Спортивная гимнастика (греч. *gymnastike*, от *gymnazo* – упражняю, тренирую), один из древнейших видов спорта, включающий в себя упражнения на различных гимнастических снарядах, а также в вольных упражнениях и опорных прыжках. У женщин это 4 вида – разновысокие брусья, бревно, вольные упражнения и опорный прыжок, у мужчин 6 видов – перекладина, брусья, опорный прыжок, вольные упражнения, конь-махи и кольца. Спортивная гимнастика – олимпийский вид спорта. Ее развитием в нашей стране руководит Федерация спортивной гимнастики.

### **Характерные методические особенности гимнастики**

1) разностороннее воздействие на организм человека. С помощью гимнастических упражнений успешно совершенствуются функции всех органов человека, поэтому с помощью гимнастики можно успешно решать задачи общего физического развития и разностороннего совершенствования двигательных способностей человека;

2) широкое использование различных движений способствует всестороннему и гармоничному развитию функциональных систем организма и физических качеств (силы, быстроты, гибкости, ловкости, выносливости);

3) избирательное воздействие на организм человека. Большой диапазон упражнений позволяет воздействовать на отдельные мышечные группы человека, развивать силу, гибкость, координацию движений, прыгучесть, скорость, совершенствовать дыхательную и другие системы организма человека, восстанавливать функции поврежденных органов и исправлять недостатки физического развития занимающихся;

4) строгая регламентация учебного процесса и точное регулирование физической нагрузки. Организация учебного процесса подчинена принципу последовательного решения частных задач обучения с использованием при этом многообразных методических приемов. Путем изменения темпа и амплитуды движения, увеличения или уменьшения количества повторений, изменения исходных и конечных положений, применения отягощений и амортизационных устройств можно успешно регулировать нагрузку в соответствии с уровнем подготовленности занимающихся;

5) различная методика применения упражнений в зависимости от поставленных задач. Например: в легкой атлетике, используя определенные методики, с помощью беговых упражнений можно добиться высоких спортивных результатов, и в то же время при определенных рекомендациях бег используется как средство укрепления сердечно-сосудистой системы.

Упражнения на гимнастической стенке могут быть использованы как средства общеразвивающего характера и формирования правильной осанки;

б) возможность непрерывного усложнения и комбинирования упражнений;

7) наличие музыкального сопровождения.

Гимнастика – одно из наиболее массовых и доступных средств физического воспитания человека. Ее значение обусловлено эффективностью воздействия на организм занимающихся, доступностью и разнообразием средств. Гимнастика имеет огромное оздоровительно-гигиеническое значение. Один из выдающихся философов древнего мира Плутарх, оценивая оздоровительное значение гимнастики, отметил, что гимнастика «есть целительная часть медицины». Благодаря своей доступности общеразвивающие упражнения составляют основное содержание занятий групп здоровья, широко используются на занятиях по физической культуре в вузах. Комплексы ОРУ применяются в утренней гигиенической гимнастике, производственной и лечебной гимнастике. Представители всех видов спорта включают ОРУ в тренировку как средство разминки и развития определенных физических качеств. Относительная простота и возможность постепенного усложнения делают ОРУ доступными занимающимся любого возраста и подготовленности. Ценность ОРУ объясняется тем, что они легко дозируются, позволяют направленно и избирательно воздействовать на определенные группы мышц. Особое значение приобретают ОРУ в формировании правильной осанки. Цель ОРУ – общее физическое развитие и подготовка занимающихся к овладению более сложными двигательными действиями. Грамотное применение ОРУ при занятиях с различным контингентом предполагает:

- владение большим количеством конкретных упражнений (умение показать и согласно требованиям терминологии объяснить);
- знание характера каждого упражнения, его направленности;
- умение составлять комплексы упражнений в зависимости от задач;
- умение обучать и проводить занятия ОРУ разными способами;
- владение методами организации занятий ОРУ;
- умение дозировать нагрузку с учетом уровня физической подготовленности занимающихся и поставленными задачами.

Общеразвивающие упражнения принято классифицировать по анатомическому признаку с выделением групп упражнений с преимущественным воздействием на различные части тела:

а) упражнения для шеи;



- б) рук и плечевого пояса;
- в) туловища;
- г) ног;
- д) всего тела.

В каждой группе можно выделить ряд упражнений более локального характера. Например, в группе упражнений для рук и плечевого пояса существуют упражнения для пальцев, кистей, предплечий. В группе упражнений для ног – упражнения для стопы, голени, бедра. В группе упражнений для туловища выделяют упражнения для мышц передней и задней поверхности туловища.

Классификация упражнений по анатомическому признаку дополняется указаниями на характер их физиологического воздействия на организм занимающихся. Имеется в виду преимущественное влияние упражнений на развитие силы, быстроты, гибкости, выносливости.

Сила – способность человека преодолевать внешнее сопротивление посредством мышечных усилий.

Силовые качества с использованием ОРУ рекомендуется развивать следующими основными способами.

1. Метод повторных усилий. Многократное (8–12 раз) повторение упражнений с доступным весом или преодоление массы собственного тела (например, сгибание и разгибание рук в упоре лежа, подтягивание на перекладине) до утомления развивает силовую выносливость, способствует увеличению мышечной массы. Если повторение 8–12 раз не составляет труда, то необходимо увеличить вес отягощения или изменить исходное положение (например, сгибание рук в упоре лежа с опорой ног на возвышение). Результаты исследований показали, что, преодолевая усталость, возникшую после многократного повторения упражнений, занимающиеся достигают нужного эффекта в развитии силы за счет последних повторений.

1. Комплексы упражнений должны составляться с учетом тех задач, которые ставятся перед данными занятиями, уроками на ближайшее время и более длительные периоды.

2. При составлении комплексов необходимо учитывать место, время проведения занятий, а также возраст, пол, уровень физической и технической подготовленности занимающихся.

3. Упражнения следует подбирать так, чтобы они оказывали разностороннее воздействие на занимающихся, обеспечивали развитие основных физических качеств, а также способствовали формированию правильной осанки.

4. Для удобства подсчета и музыкального сопровождения каждое упражнение следует составлять и выполнять на 2, 4, 8, 16, 32... счета.

5. Упражнения на развитие силы должны предшествовать упражнения на растягивание. Такая последовательность обеспечивает разогревание организма и избавляет от возможных травм (растяжений).

6. Следует чередовать упражнения на силу, растягивание, расслабление, упражнения в быстром и медленном темпе.

7. Упражнения на развитие силы следует повторять до ощущения усталости, а упражнения на растягивание – до ощущения незначительной боли.

8. Рекомендуются следующая схема построения комплекса ОРУ:

- упражнения на подтягивание;
- средней интенсивности для мышц рук, туловища и ног;
- тех же мышечных групп, но большей интенсивности;
- общего воздействия (бег, прыжки);
- на расслабление (дыхательные упражнения и другие).

### **Заключение**

В заключении хочется отметить роль гимнастики в общефизической подготовке студентов а так же о влиянии гимнастики на здоровье человека, отметим что видов гимнастики много это ритмическая гимнастика, шейпинг, атлетическая гимнастика, художественная и спортивная гимнастика и каждый из этих видов гимнастики направлен на развитие определённых физических качеств в данном случае гибкости и силы, методика проведения занятий по гимнастике направлена на то что бы занятия прошли эффективно для занимающихся, это зависит и от подбора специальных и обще-развивающих упражнений. В данной статье описывается методика подбора упражнений в зависимости от физической подготовленности занимающихся. Рассматривая вопросы обучения гимнастике, раскрываются задачи, средства, характерные методические особенности гимнастики, классификацию видов гимнастики, а также основные понятия и требования к использованию гимнастической терминологии, которую необходимо усвоить обучающимся в процессе тренировок. Уделено внимание мерам предупреждения травматизма на занятиях по гимнастике. Важное место в данной работе отводится методике подготовки и проведения уроков по основной гимнастике в школе. Основная гимнастика является базовой частью комплексной программы физического воспитания учащихся общеобразовательных школ и государственного образовательного стандарта. Особое внимание уделено методике преподавания общеразвивающих упражнений, которые используются не только в гимнастике, но и в других видах спорта как средство разминки и развития определенных физических качеств.

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## МЕТОДИКА ПРОВЕДЕНИЯ ЗАНЯТИЙ ПО НАСТОЛЬНОМУ ТЕННИСУ В ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЯХ

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***Аннотация:** В статье описывается методика организации занятий по настольному теннису в высших учебных заведениях, популяризации настольного тенниса среди студенческой молодежи и подготовка студентов к участию в межвузовских соревнованиях по настольному теннису,*

***Ключевые слова:** методика, занятия, правила, физическое воспитание, физическая культура, спортивная секция.*

***Annotatsiya:** Maqolada oliy ta'lim muassasalarida stol tennisi bo'yicha mashg'ulotlarni tashkil etish, talaba yoshlari o'rtasida stol tennisini ommalashtirish metodikasi va talabalarni stol tennisi bo'yicha universitetlararo musobaqalarda ishtirok etishga tayyorlash,*

***Asosiy so'zlar:** metodika, mashg'ulotlar, qoidalar, jismoniy tarbiya, jismoniy tarbiya, sport seksiyasi.*

***Abstract:** The article describes the methodology for organizing table tennis classes in higher educational institutions, promoting table tennis among student youth and preparing students to participate in inter-university table tennis competitions,*

***Key words:** methodology, activities, rules, physical education, physical education, sports section.*

### Введение

Использование методик по организации и проведению занятий по настольному теннису является одним из ключевых факторов повышения эффективности физического воспитания студентов. Современный уровень развития индивидуально-игровых видов спорта, и в частности настольного тенниса, требует решения основных проблем совершенствования теории и

методов управления тренировочным процессом, разработки эффективных средств и методов технико-тактической подготовки спортсменов. Очень часто молодые люди приходят на занятия физической культурой в ВУЗе и увлекаются настольным теннисом. Воистину игра доступна всем. Однако многие приобщаются к игре в уже достаточно взрослом возрасте. Но возраст для овладения основами игры не помеха. И тем, кто хочет совершенствовать свое мастерство самостоятельно, предлагаем некоторые методические советы, которые помогут правильно построить тренировку и организовать учебный процесс. Вводная часть сводится к организации занятия, постановки задач учебно-тренировочного занятия, созданию у занимающихся рабочей обстановки и психологического настроя на эффективное выполнение задач данного занятия.

Основной целью является использование педагогических технологий при проведении занятий по настольному теннису и освещение методик направленных на повышение эффективности занятий физической культурой и спортом.

Основной задачей является обучить студентов технике игры в настольный теннис используя в процессе занятий новые педагогические технологии и методики проведения занятий.

Теория и практика физической культуры и спорта определяет ряд принципиальных положений, соблюдение которых гарантирует успехи в самостоятельных занятиях физическими упражнениями и ограничивает от переутомления и нежелательных последствий.

Главное из них: сознательность, постепенность и последовательность, повторность, индивидуализация, систематичность и регулярность. Принцип сознательности направлен на воспитание у занимающихся глубокого понимания роли и значения проводимых самостоятельных занятий в укреплении здоровья в самосовершенствовании своего организма (тела и духа).

Тренировочный процесс предлагает: соответствие физических нагрузок по возрасту, полу и индивидуальным возможностям (состояние здоровья, физическое развитие, физическая подготовленность) занимающихся; постепенное увеличение интенсивности, объема физических нагрузок и времени тренировочного занятия; правильное чередование нагрузок с интервалами отдыха; повторение различных по характеру физических нагрузок и систематически регулярно на протяжении более длительного времени (недель, месяцев, лет).

Занимаясь самостоятельно физической культурой необходимо соблюдать следующие правила:

*Занятия должны носить оздоровительную, развивающую и воспитательную направленность.*

*В процессе занятий необходимо осуществлять самоконтроль над состоянием своего организма, своей физической подготовленности и строго соблюдать правила безопасности во время занятий физической культурой и спортом.*

Занятие состоит из трех частей: подготовительной, основной и заключительной. Основная часть занятия составляет 70 – 80% всего времени. Остальные 20 – 30% деятельности делятся между разминкой и заключительной частью, во время которой интенсивность выполнения физических упражнений последовательно снимается.

Каждое занятие должно начинаться с разминки и подготовке организма к предстоящей работе. Увеличивать нагрузку следует постепенно, упражнения должны воздействовать на основные группы мышц рук, ног, туловища. Начинают занятия с упражнений требующих точности движений, повышенной скорости, ловкости и лишь затем приступают к упражнениям, которые требуют максимальной силы и выносливости. В конце занятий нужен постепенный переход к относительно спокойному состоянию организма. Физические упражнения не должны вызывать значительного утомления.

Разминка — это комплекс специальных средств, задача которых не только подготовить к предстоящей специальной деятельности, но и предупредить травматизм. Не пренебрегайте разминкой. Дело в том, что органы и системы организма человека обладают известной инертностью и не сразу начинают действовать на том функциональном уровне, который необходим для игры. Из-за этого и возможны травмы.

Во время разминки вы готовите опорно-двигательный аппарат — мышцы, суставы — к предстоящей работе. Ее задача — наладить взаимную координацию систем организма и его отдельных органов. Во время разминки готовятся к серьезной работе и физиологические функции организма — кровообращение, дыхание, функции органов выделения и т. п., и психофизические функции — концентрируется внимание, улучшается точность движений, достигается оптимальное возбуждение нервной системы. Вы настраиваетесь на игру. Обратимся к опыту спортсменов. Разминка у них состоит из двух частей — общей и специальной. В общей части разминки используют упражнения такого характера, благодаря которым достигается повышение обмена веществ,

организм разогревается. Такие упражнения повышают деятельность сердечно-сосудистой системы, вентиляцию легких, увеличивают потребление кислорода организмом. Упражнения этой части разминки выполняйте до легкого потоотделения, тогда будет достигнут необходимый уровень терморегуляции организма и работы органов выделения.

Во время разминки мышцы разогреваются, а следовательно, повышается быстрота их сокращения, снижается опасность травмирования. В специальной части разминки опорно-двигательный аппарат ваш подготавливается к предстоящей специфической работе. Здесь обычно используют так называемые специальные упражнения, направленные на отработку технических приемов или их сочетаний, такие, как имитационные упражнения, игра с тенью, работа на тренажерах и т. д., способствующие достижению оптимального уровня возбуждения нервных центров коры больших полушарий головного мозга. Говоря языком специалистов, устанавливаются условно-рефлекторные связи, уточняется дифференцировка мышечных усилий, проверяется согласованность всех фаз ударных движений и передвижений. Если вы проводите разминку перед игрой с соперником, подберите такие упражнения, которые помогут вам обрести уверенность в отдельных ударах: те, что во время тренировки отработывали и будете применять в игре.

***Краткое описание содержания практических занятий по настольному теннису.***

Изучение хватки ракетки; стойки у стола; перемещения у стола. Жонглирование мяча на ракетке. Плоский удар, накат, кач (срезка) в простых комбинациях («треугольник», «восьмерка»), атака с кача (срезки), подача без вращения, с верхним и нижним вращением, игра «один – против всех». Основная задача практических занятий – освоение основных элементов игры.

**Методика обучения.** Соблюдение принципа последовательности в обучении - от простого к сложному. Всесторонность физической, морально-волевой, технико-тактической подготовки. Определение ошибок в технике обучающихся, проведение работы над исправлением ошибок.

**Правила игры.** Ознакомление с правилами одиночных игр.

**Участие в соревнованиях.** Мини-соревнования в группе на занятиях. Участие в Первенстве Университета по настольному теннису.

**Индивидуальная работа.** Отработка технических приемов настольного тенниса.

**Разминка перед занятием.** Занятия с универсальным силовым тренажером, свободная игра у стола, комплекс специальных физических упражнений.

Стабильная подача с различным вращением мяча, укороченная и длинная в различные точки стола. Техника игры накатом по диагонали и по прямой сериями (до 40 ударов). Техника игры качем (срезкой) по диагонали и по прямой сериями (до 40 ударов). Атакующий удар с кача (срезки) как средство завершения атакующих действий. Изучение технических приёмов: подрезки справа и слева, удара по свече накатом, контрудара, как средство перехвата инициативы в игре. Подраздел игры используется не только как способ обучения и усовершенствования техники, тактики, координации движения, «чувства мяча» физической подготовки, но и как интересный и полезный отдых для большой компании.

**Методика обучения.** Соблюдение принципа последовательности в обучении - от простого к сложному. Всесторонность физической, морально-волевой, технико-тактической подготовки. Определение ошибок в технике и тактике игры занимающихся, проведение работы над исправлением ошибок.

**Правила игры.** Закрепление правил соревнований в одиночных играх по круговой системе соревнований. Знакомство с олимпийской системой соревнований. Составление сетки соревнований. Судейская практика. Правила парных игр. Парные игры.

**Участие в соревнованиях.** Мини-соревнования в группе на занятиях. Участие в Первенстве колледжа по настольному теннису.

**Индивидуальная работа.** Отработка технических приемов настольного тенниса, анализ игровой ситуации.

**Разминка перед занятием.** Занятия с универсальным силовым тренажером, свободная игра у стола, комплекс специальных физических упражнений.

Настольный теннис характеризует высокодинамичная и сложно-координированная деятельность, предъявляющая высокие требования к скорости реакций, к высокой скорости переработки информации принятия решений, к концентрации и распределению внимания. Поэтому рассмотрение педагогических проблем в одном из указанных видов спорта будет способствовать решению проблем и в других индивидуально-игровых видах спорта.

В настольном теннисе чрезвычайно важны специальные физические качества, такие как специальная выносливость в сочетании с подвижностью и быстротой реакции. В настольном теннисе спортсмен должен делать все быстро:



оценивать обстановку, реагировать, стартовать, делать замах, двигаться, менять направление перемещений. И только при наличии указанных качеств можно в сложной и быстро меняющейся обстановке встречи использовать благоприятные моменты, захватить инициативу и добиться победы.

При проведении тренировок нужно уделять внимание выработке специальной выносливости, соответствующей постоянно меняющейся напряженности и тесно связанной с подвижностью и быстротой реакции.

Заключительная часть обязательна в любых учебно-тренировочных занятиях. В этой части занятия происходит постепенное снижение нагрузки, приведение организма в состояние близкое к норме. Резкий переход от тренировочной работы к покою включает действие мышечного насоса и перегружает сердечную мышцу, а это может вредно сказаться на деятельности сердечно-сосудистой системы.

Техника настольного тенниса включает в себя стойки, перемещения и удары. По характеру вращения мяча и тактическому назначению удары можно условно разделить на промежуточные, атакующие и защитные.

Промежуточные удары наиболее просты. К таким ударам относятся: подставка, толчок, откидка и срезка.

Атакующие удары характеризуются приданием мячу поступательного вращения и могут быть подготовительными и завершающими. К таким ударам относятся: подача, накат, топ-спин, завершающий удар, контрнакат, укороченные удары, крученая «свеча».

Защитные удары характеризуются обратным вращением мяча и выполняются в основном из средней и дальней зон. Иногда для отражения сильных ударов применяют удар «свечой» с вращением мяча вверх и в сторону. Выполнение этих технических приемов во многом зависит от способа держания ракетки и исходного положения игрока.

Обучение игре начинается с объяснения занимающимся ее сущности и основных правил. Затем в течение 3—5 занятий новичок изучает хватку ракетки, стойки, исходные положения перед ударом и перемещения.

Для этого используются следующие подводящие упражнения:

1. Многократное подбрасывание мяча правой и левой стороной ракетки.
2. То же самое поочередно.
3. Вращение мяча на правой и левой стороне ракетки движением руки справа налево.

Для закрепления изученных упражнений новичку предлагается выполнить эти же упражнения в движении. Прежде чем приступить к освоению техники

ударов, надо сформировать у занимающихся четкое представление о характере изучаемого движения. Тренировка ударов начинается с их имитации. Имитационные упражнения являются необходимым условием достижения высоких спортивных результатов и поэтому требуют серьезного отношения. Основным в имитации является многократное повторение ударных движений. Каждодневная имитация позволяет совершенствовать технику движений и тренировать мышцы рук, корпуса, ног, участвующие в игровых действиях.

Обучение техническим приемам начинается с изучения удара толчком. При занятиях у стола целесообразно выполнять удары по мячу, подброшенному партнером в определенные точки стола. После этого толчок изучается в игре с партнером у стола в определенном направлении по заданию тренера.

Во время первых занятий у стола тренеру надо особенно внимательно следить за правильностью выполнения новичком движений. Уже на данном этапе обучения можно овладеть элементарными тактическими навыками, т. е. выполнять чередование ударов по длине, направлению и силе. Как только занимающийся освоится с отскоком мяча, его следует начать обучать передвижению. Основными способами передвижения начинающих теннисистов являются скрестные и приставные шаги, реже выпады вперед, назад и в сторону. Обучение передвижениям у стола нельзя отделять от изучения техники ударов. Выполняя имитацию ударов, новичок должен перемещаться к месту воображаемого отскока мяча.

### **Заключение**

И в заключении необходимо отметить что методика организации занятия по настольному теннису довольно обширна и статья не охватывает всех методик которые могут быть представлены, но могут оказать преподавателю большую помощь в организации занятий по настольному теннису, преподаватель вправе сам выбирать себе методику по которой он может организовать занятие.

Основной задачей физ. воспитания является развитие гармонически развитой личности, которая будет являться патриотом своей Родины, ведь лишь тогда страна богата, когда, население ее здорово. Именно здоровье является показателем экономики страны и нации в целом. Здоровье — это богатство данное нам природой его нужно беречь и поддерживать. Поддержать здоровье мы можем с помощью занятий физической культуры, во всех образовательных учреждениях эти часы здоровья есть и именно на них нужно подготавливать молодое поколение к труду и обороне на благо своей страны развивать в нем дух и патриотизм. В средних образовательных учреждениях в которых не специализированного зала можно избрать для общей и специальной подготовки

такое средство физ. культуры как настольный теннис, т. к. настольный теннис служит укреплению здоровья человека, вырабатывает у него такие качества, как ловкость, глазомер, быстроту мышления, то есть все то, что пригодится и в повседневной жизни. Его притягательность и в том, что здесь могут на равных сражаться за победу люди разного возраста. И далеко не всегда победителем станет самый молодой или самый сильный. Многое зависит от умения, навыков, ловкости и координации.

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## ОРГАНИЗАЦИЯ ПРОВЕДЕНИЯ ЗАНЯТИЙ ПО БАДМИНТОНУ В ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЯХ

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**Аннотация:** В статье описывается методика организации и проведения занятий по бадминтону в высших учебных заведениях, правила игры в бадминтон, техника и тактика игры в бадминтон, описываются элементы игры которые необходимо освоить студентам во время освоения занятий.

**Ключевые слова:** методика занятий, техника игры, тактика игры, правила игры, физическая подготовка, выносливость.

**Annotatsiya:** Maqolada oliy o'quv yurtlarida badminton mashg'ulotlarini tashkil etish va o'tkazish metodikasi, badminton o'ynash qoidalari, badminton o'ynash texnikasi va taktikasi yoritilgan hamda talabalar darslarni o'zlashtirish jarayonida o'zlashtirishlari kerak bo'lgan o'yin elementlari bayon etilgan.

**Kalit so'zlar:** mashg'ulot usullari, o'yin texnikasi, o'yin taktikasi, o'yin qoidalari, jismoniy tayyorgarlik, chidamlilik.

**Abstract:** The article describes the methodology for organizing and conducting badminton classes in higher educational institutions, the rules for playing badminton, badminton technique and tactics, describes the elements of the game that students need to master while mastering classes.

**Key words:** training technique, playing technique, playing tactics, playing rules, physical training, endurance.

### Введение

Как и любой другой вид спорта, бадминтон – это здоровый образ жизни, активное проведение досуга. Доступность, легкость игры, простые правила позволяют даже новичку достичь высоких результатов в бадминтоне.

Бадминтон – очень демократичный вид спорта. Им можно заниматься в любом возрасте. Конечно, при этом серьезных успехов в профессиональном спорте не добиться, но вот значительно поднять уровень игры можно, так как

освоение технических элементов доступно каждому. Бадминтон – очень компактный вид спорта, не требующий больших финансовых затрат на приобретение игровой экипировки. Площадку для игры можно оборудовать в любом, даже самом маленьком зале, площадке во дворе или в парке.

Игра подкупает своей простотой. Уже после первого занятия студент практически овладевает основами игры и может самостоятельно вести её. Однако, чем больше играешь, тем яснее становится потребность в совершенствовании игры. И это привлекает. Бадминтон входит в тройку самых тяжелых по физическим нагрузкам игровых видов спорта, также считается самым быстрым ракеточным видом спорта: скорость полета волана может достигать 327 км/час. Если суммировать все передвижения (включая ускорения, рывки, прыжки) бадминтониста за игру, то в длину «набежит» до 6 километров, а в высоту – километр. Нельзя не отметить, что в бадминтоне возникло своего рода медицинское направление, игра в волан применяется в лечебных целях. Достоинства этой игры в том, что очень легко постепенно повышать физические нагрузки – от минимальных до более основательных. Игра не тяготит пациентов, доставляет радость. Наверное, тот, кто придумал эту игру, был хорошим психологом. Физиологи утверждают, что занятия спортивными играми помогают подрасти. Игра в волан – это прекрасное средство от усталости. Прекрасно снимает напряжение. Слежение за порхающим воланом – полезная гимнастика для глаз.

Бадминтон - одна из древнейших игр нашей планеты. Существует множество версий по поводу ее происхождения. Некоторые вполне определенные факты говорят о том, что современный бадминтон развился из древней игры в волан. Еще два тысячелетия назад в волан играли взрослые и дети в Древней Греции, Китае, Японии, Индии, странах Африки. В Японии была распространена игра под названием "ойбане". Она заключалась в перекидывании деревянными ракетками "волана", сделанного из нескольких перьев и косточки высушенной вишни. Во Франции подобная игра носила название "жедепом" (игра с яблоком). Английские средневековые гравюры на дереве изображают крестьян, перекидывающих друг другу волан. Играли в подобную игру и в России. Об этом свидетельствуют гравюры XVIII века.

В Англии XIX века игра в волан особенную популярность приобрела в семье герцога Бофорта. Герцог был покровителем Ассоциации бадминтона, владельцем Фронт Холл, где и сейчас находится замечательная коллекция античных ракеток и воланов. Английские офицеры, служившие в Индии, увлеклись этой игрой и, вернувшись на родину, образовали в 1875г. офицерский

клуб "Фолькстоун". Первым президентом Ассоциации бадминтона стал полковник «Долби», принявший активное участие в создании новых правил, в основу которых легли правила игры "роопа". Некоторые их пункты сохранились и до настоящего времени. В Англии появились новые клубы. Игра стала популярной и в окрестностях Лондона. А ее центром стало местечко Бадминтон, от которого игра с воланом и получила новое название.

**Игрок:** любой человек, играющий в бадминтон.

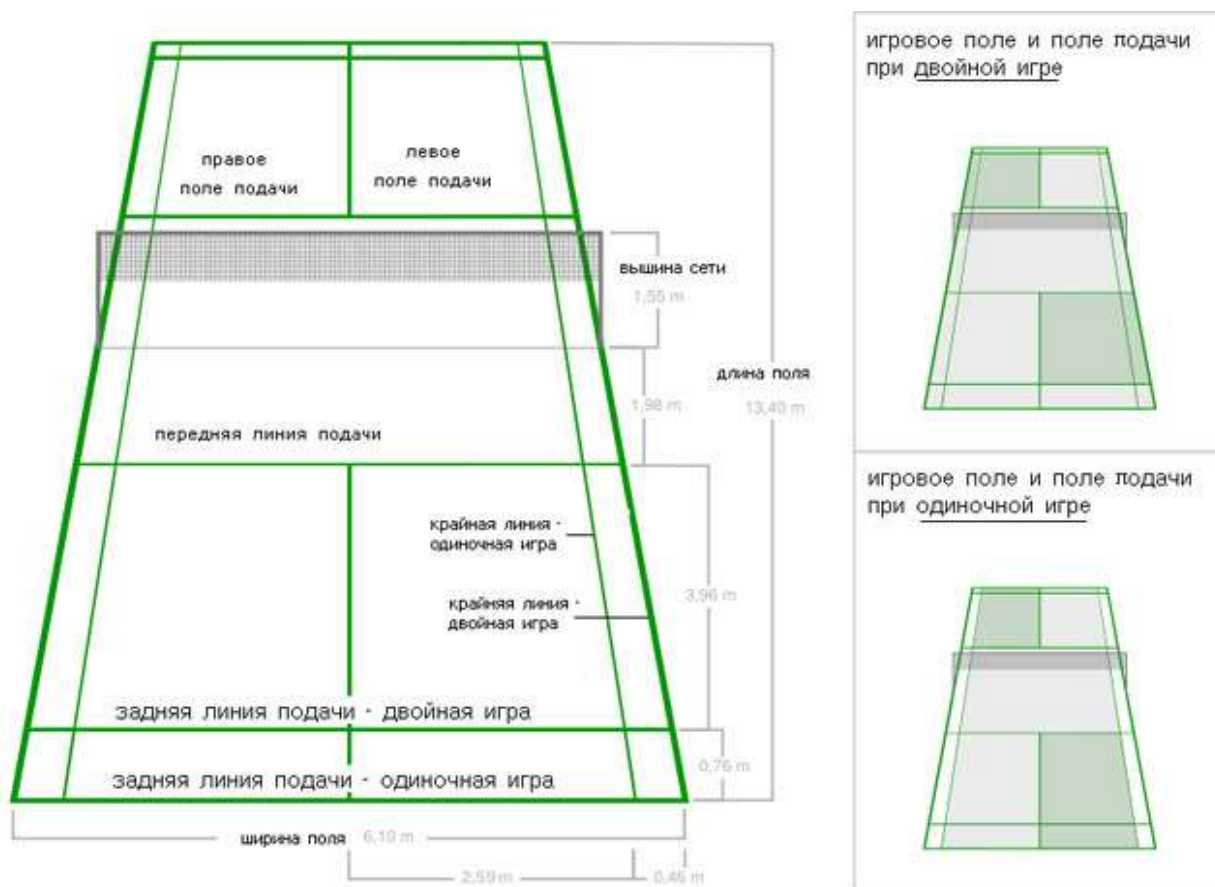
**Матч:** основное соревнование в бадминтоне между соперниками друг против друга по одному или по два игрока с каждой стороны.

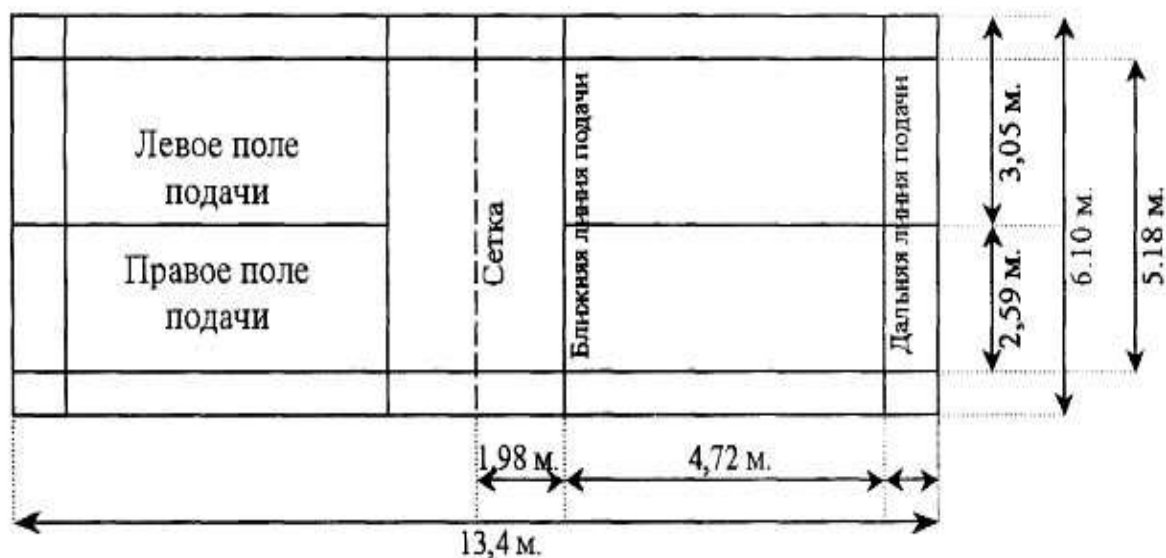
**Одиночная игра:** матч, в котором соревнуются два игрока друг против друга.

**Парная игра:** матч, в котором соревнуются по два игрока с каждой стороны.

**Подающая сторона:** сторона, выполняющая подачу. Принимающая сторона: сторона, отражающая подачу. Розыгрыш: последовательность одного или более ударов, начинающихся с подачи до тех пор, пока волан не выйдет из игры. Удар: направленное к волану движение ракетки.

Корт (площадка) и оборудование: Площадка для парной игры - 13,40 x 6,10 м  
Площадка для одиночной игры - 13,40 x 5,18 м





Общий фон помещения должен быть однообразным по цвету и темного оттенка. Наиболее подходящий фон темно – зелёный. Цвет поверхности площадки темный. Если пол окрашивают, то в темный цвет, чтобы свет в нем не отражался. Разметка линии должна быть белой, желательно наносить их смесью, состоящей из очень тонко тертой клеевой окраски и побелки. Площадка на деревянном полу размечается масляной краской светлого тона. Лучше всего использовать стойки с металлическим основанием, ввинченным в пол (в месте прохождения боковой линии). Освещение: если возможно свет должен быть дневным и проходить в помещение сверху через за стеклянную крышу. В зале, где нет стеклянной крыши, свет должен проникать через боковые по отношению к площадке окна. Корт (площадка) для парных и одиночных игр должен быть прямоугольным, размеченным линиями шириной 40мм, как показано на. Линии должны быть легко различимы, предпочтительно белого или желтого цвета. Все линии есть часть тех площадей поля, которые они ограничивают. Стойки для крепления сеток должны быть высотой 1,55м от поверхности корта. Они должны иметь достаточную прочность, чтобы оставаться вертикальными и удерживать сетку в натянутом состоянии. Опоры стоек не должны находиться на игровом поле.

Стойки устанавливаются на боковых линиях для парной игры, независимо от того, проводится ли матч в одиночном или парном разряде. Сетка изготавливается из тонкого корда темного цвета и одинаковой толщины, с ячейками от 15x15 мм до 20x20 мм. Ширина сетки по вертикали – 760мм, длина по горизонтали – не более 6,1м. Верхний край сетки обшивается лентой белого цвета шириной 75мм, сложенной пополам, внутри которой пропускается шнур.

Шнур должен иметь достаточную длину и прочность, чтобы обеспечить натяжку сетки на уровне стоек. Верхний край сетки в центре корта должен быть на высоте 1,524 м от его поверхности и на высоте 1,55 м над боковыми линиями для парной игры. Не допускается просвета (зазора) между боковой частью сетки и стойкой. Если возможно, сетку следует притянуть к стойкам по всей ширине. Если невозможно разметить корт одновременно, как для парной, так и для одиночной игры, корт может быть размечен только для одиночной игры. Судейская вышка устанавливается у корта (площадки) посередине как продолжение сетки так, чтобы судья находился на расстоянии 0,5 – 1 м от стойки. Высота сиденья вышки от пола – не менее 1,55 м.

**Волан** изготавливается из натуральных и (или) синтетических материалов. Независимо от материала, полетные характеристики волана должны быть близки к характеристикам натурального перьевого волана с головкой из корковой пробки, обтянутой тонкой кожей.

**Перьевого волан** Должен состоять из 16 перьев, закрепленных в головке. Перья должны быть одинаковой длины от 62 мм до 70 мм, которая измеряется от кончика пера до верха головки. Концы перьев должны образовывать круг диаметром 58 - 68 мм. Перья прочно скрепляются ниткой или другим подходящим материалом. Головка должна быть 25 - 28 мм в диаметре и переходить книзу в полусферическую форму. Волан должен иметь вес 4.74 – 5.50 грамм.

Начинать обучение надо с самых простых элементов, привлекая их и из других популярных видов спорта, близких по своим характеристикам к бадминтону. Обучение осуществляется в основном групповым методом, но с учетом индивидуальных физико-психологических возможностей занимающихся. Наиболее распространенные обучающие упражнения: жонглирование воланом открытой и закрытой стороной ракетки, бросание волана через сетку друг другу, перекидка волана через сетку с помощью ракетки сменяемыми парами или парами по очереди. При падении волана на площадку пары сменяются стоящими сзади или рядом студентами.

Существует огромное количество общефизических, тренировочных, специальных, тактических, имитационных и других упражнений, которые опытный преподаватель может организовать для каждого возраста, возможностей и способностей различных групп студентов.

Второй этап — специализация. Он — для студентов 1 и 2 курсов. С него можно начинать и занятия в группах студентов вузов, которые не знакомы с бадминтоном, но имеют достаточную общефизическую подготовку.



На втором этапе к общефизической подготовке добавляется специальная физическая подготовка с дифференцированным подходом к индивидуальным возможностям и способностям каждого учащегося. Здесь необходимо разделение занимающихся на несколько групп, как минимум, на две: способных и остальных. Занимаясь с ними параллельно, надо применять разные методики учебно-тренировочного процесса. В первой группе целесообразно интенсифицировать нагрузки по освоению техники и тактики бадминтона. Во второй группе можно продолжать общефизическую подготовку и освоение общих принципов игры в бадминтон, навыки от которых остаются на всю жизнь.

### **ТЕРМИНОЛОГИЯ И ОСНОВНЫЕ УДАРЫ В БАДМИНТОНЕ**

Для удобства обучения в бадминтоне и восприятия тех или иных технических элементов и действий игрока на площадке, применяется специальная терминология, которая постоянно совершенствуется и обновляется. При обучении игровым действиям на корте используют понятия зон и половина площадки:

1. Передняя зона - пространство между плоскостью сетки и плоскостью, проходящей параллельно сетке через переднюю линию подачи;
2. Средняя зона - пространство между плоскостями, параллельными сетке, проходящими через переднюю и заднюю линии подачи;
3. Задняя зона - пространство между плоскостями, параллельными сетке, проходящими через заднюю линию подачи и заднюю линию площадки.
4. Половина площадки (левая, правая) - пространство между плоскостями, перпендикулярными плоскости сетки, проходящими через левую (правую) боковую и центральную линии. Удары в бадминтоне и траектории полета волана. Траектории полета волана. Высокая- восходящая траектория с завершением в задней зоне площадки. Высокая атакующая - волан пролетает на минимальной высоте над принимающим игроком и опускается в задней зоне площадки. Плоский волан летит над сеткой и опускается в заднюю зону площадки. Нисходящая траектория, по которой волан летит сверху вниз, пролетая непосредственно над сеткой, и опускается в среднюю или заднюю зону площадки. Полу плоская - траектория, по которой волан некоторую часть пути летит параллельно плоскости площадки, пролетая непосредственно над сеткой, и опускается в среднюю зону площадки. Короткая - траектория, по которой волан летит в переднюю зону принимающего игрока. Удары из передней зоны. Откидка - удар открытой и закрытой стороной ракетки по волану, находящемуся на уровне кромки сетки и ниже, который затем летит по высокой траектории. Атакующая откидка - удар открытой и закрытой стороной ракетки по волану,

находящемся на уровне кромки сетки и ниже, который затем летит по высокой атакующей траектории. Сметание - атакующий удар, выполняемый сверху по волану, находящемуся на уровне кромки сетки, движением ракетки справа налево при ударе открытой стороной ракетки и слева направо при ударе закрытой стороной. Толчок-удар, выполняемый открытой и закрытой стороной ракетки по волану, находящемуся на уровне кромки сетки, поступательным движением ракетки по направлению полета волана. Подставка - удар, выполняемый открытой и закрытой стороной ракетки по волану, находящемуся на уровне кромки сетки и ниже, без придания волану вращения.

Подрезка удар, выполняемый открытой и закрытой стороной ракетки по волану, находящемуся на уровне кромки Сетки и ниже, путем придания вращения волану вокруг его вертикальной оси. Подкрутка удар, выполняемый открытой и закрытой стороной ракетки по волану, находящемуся на уровне кромки сетки и ниже, путем придания вращения волану вокруг его горизонтальной оси.

Перевод косо вдоль сетки – удар, выполняемый открытой и закрытой стороной ракетки по волану, находящемуся на уровне кромки сетки и ниже, при котором волан летит вдоль сетки.

Для удара по волану в любом углу площадки движения бадминтониста должны начинаться с центра площадки (примерно 2,5-3 м от сетки). При этом его ноги должны находиться на ширине плеч в согнутом состоянии, туловище - чуть наклонено вперед, ракетка должна находиться на уровне пояса (исходное положение). В таком состоянии бадминтонисту легче и быстрее подойти к волану для его удара. После каждого нанесённого удара игрок должен возвращаться в центр и начинать следующее перемещение с небольшого подскока на месте тем самым перенося центр тяжести своего тела в сторону полета волана для последующего удара.

- Перемещение в правый угол сетки. Игрок находится в центре площадки в исходном положении. Для передвижения в правый угол площадки первое движение начинается с широкого шага правой ноги в сторону правого угла сетки. Затем левая нога скрещивается сзади правой, после этого студент, опираясь на левую ногу, делает с выпадом ещё один шаг правой. Левая нога при этом не должна очень близко приближаться к правой. Ракетка при этих движениях постепенно поднимается вверх, и при ударе она должна находиться у кромки сетки открытой стороной ракетки. После выполнения удара студент подтягивает левую ногу на расстояние стопы к правой для переноса центра тяжести своего тела. Далее отталкивается правой ногой в сторону центра, делает ею широкий

шаг назад, затем подскоком заканчивает своё перемещение в центре (исходное положение).

- Перемещение в левый угол сетки. Игрок находится в центре площадки в исходном положении. Для передвижения в левый угол площадки первое движение начинается с широкого шага левой ноги в сторону левого угла сетки. Затем делается широкий шаг правой ногой и приставной шаг с выпадом к сетке. Ракетка постепенно поднимается вверх, и при ударе она должна находиться у кромки сетки закрытой стороной. После выполнения удара студент подтягивает левую ногу на расстояние стопы к правой, при этом перенося центр тяжести своего тела немного назад, далее отталкивается правой ногой в сторону центра, делает ею широкий шаг назад, затем подскоком заканчивает своё перемещение в центре (исходное положение).

- Перемещение влево в центре площадки.

Игрок находится в центре площадки в исходном положении]. Передвижение к левой боковой линии начинается с приставным шагом левой ноги. Далее с разворотом туловища на 180 градусов и выпадом на правую ногу. Ракетка находится на уровне пояса беговыми шагами в исходное положение в свой игровой центр.

### Заключение

В заключении хочется отметить эффективность занятий бадминтоном для студентов в виду того что бадминтон является одной из сложных игр требующий от играющих определённых навыков и умений, но для того что бы освоить эти навыки и умения студентов надо обучить тактике и технике игры в бадминтон и обучить студентов техническим элементам.

Бадминтон и методика его проведения в высших учебных заведениях основывается в основном на изучении методов и приёмов педагогических технологий которые помогают студентам приобрести навыки в этой игре и освоению технических приёмов позволяющих правильно освоить приёмы подачи и ударов на занятиях бадминтоном. Зрелищность, эффективное воздействие на организм предопределили включение этого вида спорта в систему физического обучения в высших учебных заведениях. Широкая вероятность нагрузки разрешают использовать бадминтон в разных группах общей физической подготовки.

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## BADIIY DISKURS

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*Annotatsiya.* Badiiy nutq muayyan estetik vositalar majmuasi bilan ishlaydi va turli adabiy oqimlarning nutqlaridan, shu jumladan individual shaxsiy nutqlar va matnlardan iborat. Tadqiqotning uslubiy asosi N. D. Arutyunova, E. Benveniste, M. M. asarlariga asoslangan nutq tahlilidir. Baxtin, T. van Deyk, D. Lakoff, O. G. Revzina, M. Fuko va boshqalar. Uslubiy jihatdan asarda shakl va mazmun dialektikasining nutqiy matnlardagi pozitsiyasi asos qilib olingan. Tadqiqotning nazariy asosini mahalliy va xorijiy mualliflarning lingvistik semantika, pragmatika, lingvopoetika, psixologiya, nutq tahliliga oid ishlari tashkil etdi.

Gap badiiy asarlar jamlanmasining diskursiv tahlili haqida ketayotganligi sababli uni diskursiv poetika deyish mumkin. Bitiruv malakaviy ishining amaliy ahamiyati tadqiqot natijalaridan adabiy matnni nutqiy tahlil qilish, grammatik va funksional nazariya va amaliy kurslarda foydalanish imkoniyati bilan belgilanadi.

Bundan tashqari, maqola materiallari badiiy matnlarni tarjima qilishda tarjimonlar, shuningdek, amaliy mashg'ulotlarda talabalar va o'qituvchilar uchun foydali bo'lishi mumkin.

**Kalit so'zlar.** Diskurs, semiotika, sotsiologiya, psixologiya, konyunksiya, diszyunksiya, grammatika, maxsus leksika, maxsus semantika, zamonaviy tilshunoslik, semiotika, dixotamiya, tilning transfrasal o'lchovi.

Muloqot kategoriyasi zamonaviy tilshunoslik uchun asosiy kategoriyalardan biridir. "Bugungi kunda ijtimoiy fanlardagi nutq kategoriyasi Yevropa iqtisodiyotida yevroga berilgan rolga o'xshash rol o'ynaydi", shunday ramziy taqqoslash bilan boshlaydi M. L. Makarov o'z "Diskurs nazariyasi asoslari" monografiyasini. [Makarov 2003, 11]. Nutqni keng tushunish uning "nutq, matn, dialog tushunchalari bilan bog'liq umumiy kategoriya sifatida" talqini bilan bog'liqdir [Makarov 2003, 90].

Nutqning ko'plab ta'riflari mavjud. Ulardan biri Emil Benvenistening ta'rifi bo'lib, u nutqni "harakatning aniq ishtirokchilari, ya'ni so'zlovchi va tinglovchi bilan, shuningdek, tinglovchiga qandaydir tarzda ta'sir qilish uchun so'zlovchining

kommunikativ maqsadi bilan" bog'lagan. [Benveniste 1974] Shunday qilib, nutqning asosiy xususiyati uning dialogligi, boshqasiga yo'naltirilganligi, mavjudlikning ajralmas sharti sifatida boshqasiga qaratilgan intersub'ektivlikdir.

T.M. Nikolaeva o'zining "Matn lingvistikasi atamalarining lug'ati" da ushbu atamaga quyidagi ta'rifni berdi:

"Diskurs matn lingvistikasining polisemantik atamasi bo'lib, bir qator mualliflar tomonidan deyarli omonim ma'nolarda qo'llaniladi. Ulardan eng muhimlari: 1) izchil matn; 2) matnning og'zaki-suhbat shakli; 3) dialog; 4) ma'no jihatdan bir-biriga bog'langan gaplar guruhi; 5) nutq ishi berilgan - yozma yoki og'zaki" [Nikolaeva 1978, 467].

Demyankov nutqning matn va taklifiy mohiyatini ta'kidladi:

"Diskurs - bu nutq, birdan ortiq gapdan yoki gapning mustaqil qismidan tashkil topgan ixtiyoriy matn parchasi. Nutqning boshlang'ich tuzilishi konyunksiya, diszyunksiya va boshqalarning mantiqiy munosabatlari bilan o'zaro bog'langan elementar takliflar ketma-ketligi shakliga ega. Nutqning elementlari: taqdim etilgan voqealar, ularning ishtirokchilari, ijro ma'lumotlari va "hodisalar bo'lmagan", ya'ni. a) hodisalar bilan bog'liq holatlar; b) voqealarni tushuntiruvchi fon; v) tadbirlar ishtirokchilariga baho berish; d) nutqni voqealar bilan bog'laydigan ma'lumot" [Demyankov 1983, 7].

Yu. S. Stepanov nutq va uslub o'rtasidagi farqni ta'kidlaydi: "Diskurs, aftidan, har bir tilda, aniqrog'i, til madaniyatining har bir sohasida yaratilmaydi. Keyinchalik (2 va 3-bo'limlarda) ko'rib chiqamizki, nutqlar, xususan, "Podshoh Edip nutqi" tegishli davrning qadimgi yunon tilida farqlanadi. Bu, ko'rinishidan, o'sha davr yunon madaniyatida alohida mifologik qatlam mavjudligi bilan bog'liq. Ammo nutq har doim, shu jumladan bizning davrimizda ham qandaydir mifologiyaning ifodasi emasmi?

Har holda, nutqni uslub sifatida qisqartirib bo'lmaydi. Va shuning uchun stilistik yondashuv, stilistikani ma'lum bir tilni o'rganish doirasida maxsus fan sifatida yaratish hozirda yetarli darajada emas. ...Xo'sh, nutq nima?

Ushbu maqolani umumlashtirish uchun shuni aytish kerakki, nutq "til ichidagi til", lekin maxsus ijtimoiy voqelik sifatida taqdim etiladi. Nutq aslida til kabi o'zining "grammatikasi" va o'zining "leksikasi" shaklida mavjud emas. Nutq birinchi navbatda matnlarda mavjud, lekin ular maxsus grammatika, maxsus leksika, so'zlarni qo'llash va sintaksisning maxsus qoidalari, maxsus semantika - pirovardida maxsus dunyo bilan ta'minlangan. Har qanday nutq olamining o'ziga xos sinonimik almashtirish qoidalari, o'ziga xos haqiqat qoidalari, o'z odob-axloq qoidalari mavjud. [Stepanov 1995, 43]

N. D. Arutyunova "Lingvistik entsiklopedik lug'at" maqolasida "diskurs" va "matn" tushunchalarini ajratib ko'rsatadi:

“Diskurs – (fransuzcha diskurslardan – nutq) – ekstralingvistik (pragmalingvistik, sotsial-madaniy, psixologik va boshqa omillar; hodisa aspektida olingan matn; maqsadli ijtimoiy harakat sifatida qaraladigan nutq) uyg'unlashgan izchil matndir. Odamlarning o'zaro munosabatida ishtirok etuvchi komponent va ularning ongi mexanizmlari... Diskurs “hayotga bog'liq” nutqdir... “matn” atamasidan farqli o'laroq, nutq tirik hayot bilan aloqalari bevosita tiklanmagan qadimgi va boshqa matnlarga taalluqli emas. ...” [Arutyunova 1990, 136].

Yu.S.Stepanov va N.D.Arutyunova o'rtasidagi nutq ta'rifidagi farq turlicha yondashuvlar bilan bog'liq. Darhaqiqat, qadimiy matn ham nutq bo'lishi mumkin, lekin bu nutqning ijtimoiy-mafkuraviy mazmuni adresatga tushunarli bo'lishi sharti bilan chambarchas bog'liq. Diskurs voqea konteksti bilan tanish bo'lgan qabul qiluvchilar tomonidan shunday qabul qilinadi; boshqalar uchun bu matn, lekin nutq emas.

Falsafiy ensiklopediyada nutqqa quyidagi ta'rif berilgan. Biz uni to'liq iqtibos keltirishni lozim deb bilamiz:

“DISKURS – (frantsuzcha discours, lotincha discursus – fikrlash, mulohaza yuritish) zamonaviy tilshunoslik, semiotika va falsafaning ingliz va ayniqsa fransuz tilida so'zlashuvchi madaniyatlarda keng tarqalgan murakkab va ta'riflash qiyin bo'lgan tushunchalaridan biridir. So'zning ma'nosi - nutq, ijro, fikrlashdir. Ko'pgina Yevropa tillarida bo'lgani kabi, o'zbek tilida ham bu so'zning ekvivalenti yo'q. D., nutq, nutq, so'z, matn, fikrlash tarzida tarjima qilinadi. D. nisbatan yaqinda nazariy o'rganish predmetiga aylandi.

Zamonaviy tilshunoslik asoschisi F. de Sossyur “D” atamasini kamdan-kam qo'llagan, chunki u tilni tilshunoslikning yagona predmeti deb hisoblagan, uni nutqqa qarama-qarshi qo'yib, tilning amaliy amalga oshirilishi deb tushungan. Biroq, uning izdoshlari, aksincha, D.ga tobora ko'proq e'tibor berishmoqda. E. Benveniste deyarli hech qachon "nutq" atamasini ishlatmaydi, undan "D." ni afzal ko'radi. E. Brussans Sossurcha til/nutq dixotomiyasiga uchinchi a'zo D.ni kiritib, uni til va nutq orasiga qo'yib, vositachilik vazifasini ato etadi. D. - so'zlovchi tildan foydalanadigan ma'lum kombinatsiyalar; nutq faoliyatining mexanizmi va jarayonidir.

An'anaga ko'ra, tilshunoslik faqat so'z va iboralarni o'rganish bilan chegaralangan. Boshqa gumanitar fanlar - semiotika, sotsiologiya, psixologiya bilan o'zaro aloqada bo'lish tilshunoslikni ibora doirasidan tashqariga olib chiqdi, jumladan, uning mavzusidagi yangi komponent bu - D. tilshunos E. Xarris «Diskurs tahlili» (1952). Bunday yondashuvda so'z birikmasi oddiy gap, D. esa bir necha so'z

birikmalaridan tashkil topgan murakkab gapdir. J.K. Koket D.ni “tilning transfrasal o‘lchovi” deb ta’riflagan.

Endi tilshunoslik va semiotikada yangi fan - diskurs tahlili paydo bo‘ldi. Fr. semiotiklar G. Greymas va J. Kurteslar D. bilan rus semiotiklari (Yu. M. Lotman va boshqalar) tomonidan ilgari surilgan “birlamchi modellashtirish tizimi” asosida qurilgan “ikkilamchi modellashtirish tizimlari” tushunchasi o‘rtasidagi muvofiqlikni topadilar. ,” bu tabiiy tildir.

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## BADIIY ADABIYOTDA DINIY G‘OYA VA MAFKURANING O‘RNI HAMDA AHAMIYATI

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### ANNOTATSIYA

*Ushbu maqolada badiiy adabiyotda diniy g‘oyalar hamda aqidalarning roli hamda ahamiyati, dinning adabiyotga singish jarayoni va ta‘sir kuchi, shuningdek, adabiyotning yangi bosqichi, badiiy asarning diniy masalalar asosiga qurilayotganlik masalasi hamda bugungi davr shaxsi ruhiyatiga diniy-ma‘rifiy adabiyotning ta‘siri haqida so‘z yuritiladi.*

**Kalit so‘zlar:** adabiyot, din, e‘tiqod, ruhiyat, g‘oya, mafkura.

### АННОТАЦИЯ

*В данной статье говорится о роли и значении религиозных идей и убеждений, влиянии религии на литературу, а также о новом этапе развития литературы, вопросе создания произведения на основе религиозной проблематики, интерпретации религиозных - просветительская литература о психике современного человека.*

**Ключевые слова:** литература, религия, вера, духовность, идея, идеология.

### ABSTRACT

*This article talks about the role and importance of religious ideas and beliefs, the influence of religion in literature, as well as the new stage of literature, the issue of the creation of a work on the basis of religious issues, and the interpretation of religious- enlightenment literature on the psyche of today’s individual.*

**Key words:** literature, religion, faith, psyche, idea, ideology.

Badiiy adabiyot mavzusi ijtimoiy hayot va unda sodir bo‘layotgan hodisalar va o‘sha davr shaxsi bilan bog‘liq holda o‘zgarib, yangilanib turishi hech kimga sir emas. Makon, zamon, hodisotlar badiiy adabiyotga, badiiy asarga, shuningdek, inson psixologiyasiga, shaxsiga har qanday zamonda o‘z muhrini qo‘yib kelgan. Yana shunday bir omil borki, adabiyot bilan doim uzviy bog‘liqdir. “Bir qarashda adabiyot

va din alohida ikki sohaga tegishlidek ko'rinso-da, aslida ular bir-biri bilan o'zaro chambarchas bog'liq va ajratilmasdir, go'yoki bir vujudning ikki a'zosi kabi".<sup>1</sup> Shahzad Latif o'zining ilmiy ishida adabiyotni jismga, dinni jonga qiyoslashi ham fanda yangilik bo'lmasa-da, azaldan adabiyot va din ajralmas birlik sifatida qaralishini yana bir bor tasdiqlaydi. "Qur'on", "Injil" kabi muqaddas Kitoblarda rivoyatlar, hikoyatlarning kelishi, ulardagi badiiy-tasviriy vositalarning aks etishi, umuman olganda tasvir uslubi badiiy adabiyot obyektiga sifatida chuqur o'rganilgan hamda o'rganib kelinmoqda. Bugungi kunda ko'pgina olimlar adabiyotning ayrim janrlari, xususan, she'riyat va drama bevosita diniy marosimlardan kelib chiqqanligini tez-tez ta'kidlaydilar. Bunday qarash adabiyotning barcha janr hamda adabiy turlariga tegishli bo'lmasa-da, asli ruminiyalik diniy olim Mircea Eliade eposning ayrim turlarining kelib chiqishi shamanizm amaliyotiga bog'liqligini aniqladi. "Adabiyotning dinga munosabatining eng muhim va ko'zga ko'ringan xususiyatlaridan biri bu- og'zaki adabiyot ham, yozma adabiyot ham tarixda diniy g'oya va harakatlarni saqlash hamda yetkazish vazifasini bajargan".<sup>2</sup> Umuman din va adabiyot masalasini yaxlit tarzda talqin qilish, ularning nechog'lik bir-biriga bog'liq ekanligini isbotlash, adabiyotni diniy g'oyalarsiz, dindan holi bo'la olmasligini ko'rsatish yo'ldan borgan olimlar ko'pchilikni tashkil qiladi. Xususan, g'arb adabiyotshunoslik vakillaridan Redmond James(1), Scott Nathan(2), Shaffer E.S.(3), Sternberg Meir(4), Lewalski Barbara Kiefer(5), Gunn, Giles B.(6), Frye Northrop(7), Bultmann Rudolf(8)<sup>3</sup> va boshqa o'nlab olimlarning ilmiy izlanishlarida ushbu masala atroflicha yoritilgan. Sharq adabiyotida diniy g'oyalar esa alohida mavzubo'lib, g'arbdan ko'ra sharq adabiyotida din uzoq yashagan va hozirgi kunda ham yashab kelmoqda. Sharq adabiyotini dinsiz, diniy tafakkursiz tasavvur qilish mushkul masala. Eng qadimgi hind, eron, misr adabiyotiga nazar tashlaydigan bo'lsak, buning yaqqol dalillariga duch kelamiz. Tabiiyki, bu mavzuni to'liq yoritish uchun bizdan ko'p vaqt talab etiladi va maqola mazmunidan uzoqlashish ehtimolini tug'diradi. Shu sababli sharq mumtoz adabiyoti tarixidan bir necha misollar keltirish bilangina cheklanamiz. Sharqda, asosan, islom dini paydo bo'lganidan keyin dinning adabiyotga ta'siri sezilarli darajada ortdi. Albatta, islomgacha bo'lgan davrda ham ta'sir yo'q edi deya olmaymiz (dunyoning yaralishi

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haqidagi miqlar, rivoyatlar, kultlar, hindlarning “Kalila va Dimna”, “Panchatantra” asarlari, zardushtiylarning “Avesto” kitobi va boshqalar). Xususan, sharq badiiy adabiyotida yangi tushunchalar paydo bo‘la boshladi. Hamd (insoniyatni, hayvonot, nabototni- bu dunyoda mavjud jamiiki yaratiqni, borliqni xilqat qilgan Zot- Allohni madh etuvchi, ulug‘lovchi adabiy parcha), na’t (olamlarning yaralishiga sabab bo‘lgan zot, Ollohning elchisi va payg‘ambari, rasulimiz Muhammad (s.a.v.)ning ta’rif hamda tavsiflari keltirilgan matn), me’rojnoma (Islom dinini olib kelgan Zotning Buyuk Olloh huzuriga chiqqan kechalari-Me’roj kechasi tasviri keltirilgan badiiy matn) yozish an’ana tusini oldi. Mumtoz adabiyotning asosini tashkil qilgan “tasavvuf” tushunchasi paydo bo‘ldi. Deyarli har bir asar tasavvuf ta’limoti asosida yaratildi. Shu tariqa din va adabiyot so‘zlari yonma-yon qo‘llana boshladi. Insonlar adabiyot orqali ham dinni anglay boshladi. Kishilar qalbiga adabiyot orqali din singa boshladi.

Yuqorida aytilganidek, adabiyot ijtimoiy hodisa, u hayot bilan hamnafas. Kishilarning o‘y-xayollari, orzu-istaklari, yashash tarzlari, diniy e’tiqodlari o‘zgarib borishi bilan adabiyot ham o‘zgarib, yangilanib boraveradi. Yevropada uyg‘onish davri adabiyoti, sharqda mumtoz davri adabiyoti deya bosqichlangan adabiy davrdan keyin biz jahon adabiyotida ham, o‘zbek adabiyotida ham bir qancha o‘zgarishlarni ko‘rishimiz mumkin. Aniqroq to‘xtaladigan bo‘lsak, kishilar ruh bilan emas jism bilan qiziqqa boshladi va bu adabiyotga ham o‘z ta’sirini o‘tkazmay qolmadi. Yozuvchilar ham moddiy borliqni tan olishdi va asosiy mavzuga aylantirishdi. Ijtimoiy hayot, davriy tuzum, mavjud qarashlar bir qancha muddat dinni adabiyotdan uzoqlashtirishga muvaffaq bo‘ldi (G‘arb XVII asrdan hozirga qadar, sharq XIX asr oxiri-XX asrlar). Bugungi davrga kelib esa islom dini rivojlanib, kengayib borishi natijasida sharq adabiyotida yana yangi bosqich paydo bo‘la boshladi, yoki dinning adabiyotga qayta ta’siri ko‘rina boshladi, deyish mumkin. Xususan, o‘zbek adabiyotida ham sekin-asta Qur’oni Karim oyatlari, hadislar, diniy rivoyatlar qaytadan uchray boshladi. Masalan, o‘zbek yozuvchisi Said Ahmadning “Qorako‘z majnun” hikoyasiga Qur’oni Karim Baqara surasining 217-oyati (“Sizlardan qaysi biringiz o‘z dinidan qaytsa va shu kofirligicha o‘lsa, bas, ana o‘shalarning (qilgan savobli) amallari xabata (bekor) bo‘lur, ular do‘zax ahlidurlar va u yerda mangu qolurlar”) hamda “Al jome al-Kabir”da kelgan hadis(“Jannatga kiradigan o‘n nafar hayvondan biri bu “Ashobi kahfning vafodor itidir”) larning epigraf qilib olinganligi, musulmon kishi uchun murad bo‘lishlikdek og‘ir musibat yo‘qligini badiiy talqinda ifodalanishini misol qilib keltirishimiz mumkin. Shuningdek, bugungi kunning taniqli yozuvchisi Ulug‘bek Hamdamning “Isyon va Itoat” (roman e’tiqod va iymon masalalariga bag‘ishlangan bo‘lib, asar qahramonlari tiriklik mantig‘i va ruh halovatini har ikki dunyo to‘g‘risidagi mushohadalar yordamida idrok etishga urinadi. Asar qahramoni Akbarning taqdir va

Xudoga isyoni, ammo uzoq izlanish va mashaqqatlardan so‘ng itoatga kelishi falsafiy-psixologik talqinda tasvirlangan), “Muvozanat” kabi romanlarida ham inson psixikasida, ruhiyatida diniy aqidalarning qanday ahamiyat kasb etishi masalalariga biroz bo‘lsa-da to‘xtalib o‘tiladi. Bir qancha vaqt dindan ajragan adabiyotga qayta diniy ruhni kirgizgan ijodkorlardan yana biri sevimli yozuvchimiz Tohir Malikdir. Adibo‘zining islom nuri bilan to‘yingan, butunlay diniy mafkura bilan qamralgan bir qator asarlarini ommaga taqdim etdi. Tohir Malikning “Mehmon tuyg‘ular”, “Iymonlashish umidi”, “Odamiylik mulki” kabi asarlari yuqorida aytilgan asarlar sirasiga kiradi. Xususan, “Odamiylik mulki” kitobi diniy-falsafiy ruhda bitilgan bo‘lib, yozuvchi ushbu asariga muqaddas Qur‘oni Karimdan “Isro” surasining 70-oyatini epigraf qilib oladi: “Darhaqiqat, biz Odam bolalarini aziz va mukarram qildik va ularni barru-bahrda- quruqlik va dengizda (ot-ulov va kemalarga) chiqarib qo‘ydik hamda ularga halol-pok narsalardan rizq-u ro‘z berdik va ularni O‘zimiz yaratgan juda ko‘p jonzotlardan afzal-ustun qilib qo‘ydik”. Ushbu kitob “axloq kitobi” deya nomlanib, unda ilm olish fazilatlarini, ota-ona haqlari, silayi rahm masalalari, husni xulq qoidalari, er-xotinlik hamda nikoh shartlari, til talofatlari kabi masalalarga islom nuqtayi nazaridan yondashgan holda qalam yuritiladi. Yuqorida tilga olingan asarlar safiga yana o‘nlab misollarni qo‘shish mumkin. Ammo ushbu asarlardan ham keyinroq yaratilgan, aynan hozirgi zamon o‘quvchilarining shov-shuvli diqqatiga sazovor bo‘lgan asarlardan biri- Akrom Malikning “Xalqa”siga to‘xtalib o‘tmoqchimiz. Asar iymon va kufr, mo‘min va shayton orasidagi kurash, zolimning halokati, mazlumning saodati haqida hikoya qiladi. “Millat o‘zligini tanishga intilar ekan, Xudoni tanishga majbur”, deydi yosh bo‘lishiga qaramay birgina kitobi bilan o‘z o‘quvchilarini to‘play olgan asar muallifi. Yuqorida tilga olinib kelinayotgan din mavzusi nafaqat o‘zbek kitobxonini, balki qardosh xalqimiz turk o‘quvchilarini ham ko‘proq qiziqtirayotgani shu yo‘nalishda yozilgan asarlarning kun sayin kitob rastalaridan kengroq joy egallayotganidan seziladi. Bunday asarlar o‘zbek kutubxonasiga ham shiddat bilan kirib kelmoqda deyish mumkin. Xususan, birgina turk yozuvchisi Omina Shenliko‘g‘lining o‘nlab diniy g‘oya va mafkura asosiga qurilgan asarlari (“Imomning maneken qizi”, “Mariya”, “Nasroniy atirguli”, “Ehromlar qizi Laylo”, “Muslima ayol Yevropada”) o‘zbek tiliga tarjima qilindi. Shuningdek “O‘gay ona” (Ahmad Lutfi Qozonchi), “Olim yetishtirgan onalar”(Murat Tosun), “Iymon va Huzun” (Said Chamlija), “Alfido” (Onur Qoplon) kabi boshqa ko‘plab badiiy asarlar ham tez sur‘atlarda kitobxonlar qo‘liga borib tushayotgani bugungi zamon o‘quvchisining aynan shunday asarlarga bo‘lgan ehtiyoji ortganligini ko‘rsatadi. Shuni hisobga olgan holda bugun adabiyotning yangi bosqichi paydo bo‘la boshlagani yoki yo‘qligi haqida adabiyotshunoslar mushohada qila boshlamoqda. Albatta, buni yangi bosqich deyish

mumkinmi yo‘qmi- vaqt ko‘rsatadi. Bunday asarlarning aksarining umri qancha ekanligi ham bizga hozircha qorong‘u, lekin o‘quvchilar qo‘liga yetib borgan har qanday asarni tavsiflash, adabiy tahlil chig‘irig‘idan o‘tkazish adabiyotshunoslikning asosiy vazifalaridan biri hisoblanadi.

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## MEHNAT BOZORINING MOHIYATI VA UNING SHAKLLANISH OMILLARI

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**Abstract:** *In the article, the author talks about the nature of the labor market and its specific features, the development of a safe and controlled environment for training the graduate to improve his professional skills, as well as the creation of a reliable method of evaluating professional education. Therefore, in the author's opinion, the preparation of graduates who are high in the labor market for professional education is the main way to comply with the best educational standards and ethical principles in the educational process. The article describes the theoretical and practical knowledge of the author about the history and present factors of formation of the labor market.*

**Key words:** *Vocational training, labor market, hired labor, professional education; adaptation.*

**Annotatsiya:** *Maqolada muallif mehnat bozorining mohiyati va uning o'ziga xos xususiyatlari, bitiruvchini kasbiy qobiliyatini oshirishni o'rgatish uchun xavfsiz va boshqariladigan muhitni rivojlantirish, shuningdek, professional ta'limni baholashning ishonchli usulini yaratish haqida so'z borgan. Shu sababli muallifning fikricha professional ta'lim uchun mehnat bozorida yuqori bo'lgan bitiruvchilarni tayyorlash ta'lim jarayonida eng yaxshi ta'lim standartlari va axloqiy tamoyillarga mos keladigan asosiy yo'ldir. Maqolada mehnat bozorining shakllanish omillarining tarixi va buguni haqida muallifning nazariy va amaliy bilimlari bayon etilgan.*

**Kalit so'zlar:** *Kasbiy tayyorgarlik, mehnat bozori, yollanma mehnat, professional ta'lim; moslashtirish.*

**Аннотация:** *В статье автор говорит о природе рынка труда и его особенностях, развитии безопасной и контролируемой среды обучения выпускника для повышения его профессиональной квалификации, а также создании надежного метода оценки профессиональное образование. Поэтому, по мнению автора, подготовка выпускников, занимающих высокие позиции на рынке труда, к профессиональному образованию является основным способом соблюдения лучших образовательных стандартов и этических принципов в образовательном процессе. В статье изложены теоретические и практические знания автора об истории и современных факторах формирования рынка труда.*

**Ключевые слова:** *Профессиональное обучение, рынок труда, наемный труд, профессиональное образование; приспособление.*

**Kirish.** Bugungi kun iqtisodiyotining oldiga turgan dolzarb muammolardan biri mehnat bozorini shakllantirish va samarali rivojlantirishdir. Tadqiqotchi olimlarning takidlashicha, bozor iqtisodiyotida mehnat bozori yollanib ishlashga qodir kishilarning barchasini: ham yollanma mehnat bilan band bo‘lganlar, ham band bo‘lmaganlarni qamrab oladi. A.A.Nikiforova esa boshqa umumiy ta’rifni taklif etadi: «Mehnat bozori rivojlanishining darajasi va bozorda ishtirok etuvchi kuchlar: tadbirkorlar, mehnatkashlar va davlat o‘rtasida ma’lum davrda erishilgan manfaatlar balansini aks ettiruvchi ijtimoiy munosabatlar tizimi sifatida vujudga kelgan». Ba’zi bir tadqiqotchilar mehnat bozorini ish haqi va daromadlarning erkin harakati orqali mehnatga talabni va ishchi kuchi taklifini o‘zini-o‘zi tartibga soluvchi mexanizm sifatida talqin qiladilar. Boshqa tadqiqotchilarning fikricha, mehnat bozori ish beruvchilar va yollanib ishlashni xohlovchilarni bevosita kelishuvi orqali talab va taklifni qanoatlantirish uchun sharoitlar yaratadi va ishchi kuchini xarid qilish-sotish jarayonlarini bevosita tartibga solmaydi.

Mehnat bozori-ish kuchi oldisotdi qilinadigan bozor. Mehnat bozorining ishtirokchilari ishga yollovchilar, ishga yollanuvchilar va ular o‘rtasidagi turli vositachilar hisoblanadi[1]. Turli vositachi firmalar, tashkilotlar va agentliklar Mehnat bozorining infratuzilmasini tashkil etadi. Ish kuchi maxsus tovar sifatida uning sohibi tomonidan bozorga taklif etiladi. Ishga yollovchilar Mehnat bozoriga talab bilan chiqadi. Ish kuchining oldisotdisi bevosita haridor bilan sotuvchi o‘rtasida to‘g‘ridan to‘g‘ri yoki vositachilar ishtirokida yuz berishi mumkin. Bu ishni mehnat birjasi yoki ish topib beruvchi firmalar bajaradi. Ish kuchining oldisotdisi mehnat bitimi shaklida rasmiylashtiriladi. Mehnat bozorida ish kuchini sotuvchi bilan uni oluvchi o‘rtasida mehnatning kelishilgan narxi-ish haqidir[3].

**Muhokama.** Mehnat bozorining iqtisodiy tushuncha sifatidagi mohiyati uning turli ijtimoiy-iqtisodiy sharoitlardagi xususiyatlari, ishchi kuchini takror ishlab chiqarish, taqsimoti, o‘zlashtirish va foydalanish mexanizmi, u yoki bu jamiyat iqtisodiy munosabatlari tizimida ushbu tushunchaning roli va ahamiyati klassik iqtisodiyot nazariyasi namoyandalari, hamda xorijiy mamlakatlar mashhur iqtisodchi olim-larining tadqiqot predmeti bo‘lgan. A.Smit va D.Rikardolardan to J.Keyns, M.Fridman, Ya.Kornai va ko‘p sonli boshqa iqtisodchi olimlar tomonidan o‘rganilgan. Mehnat bozori tushunchasiga rossiyalik va ko‘pgina o‘zbek olimlarining ham ta’riflari mavjud. S.YU.Roshshinning ta’rifiga ko‘ra, “mehnat bozori-mehnatga talab va mehnat taklifini o‘zaro harakatlantiruvchi, bozor mexanizmi va belgilari asosida mehnat resurslarini taqsimlashdi. P.E.Shlender va professor Y.P.Kokinning ta’rifiga ko‘ra:” mehnat bozori-bozor iqtisodiyotining tarkibiy qismi bo‘lib,yollanma ishchi kuchi va ish beruvchilar manfaatlar kelishilgan jamiyat aloqalari ijtimoiy tizimini bildiradi.

Mehnat bozori-bu birinchidan, ishchi kuchi talabi va taklifi orasida iqtisodiy aloqalar yig'indisi, ikkinchidan, turli xil iqtisodiy va ijtimoiy manfaatlar va funksiyalar to'qnashadigan joy, uchinchidan korxonalar nuqtai nazaridan, alohida korxonalar va uni ishchilarini o'zaro aloqa maydoni, firma miqyosida yangi ish joyiga o'tishni o'ylovchi haqiqatdagi va mavjud bo'lgan ishchilar" B.M.Genkinning ta'rifiga ko'ra:"mehnat bozori, eng avvalo, ish beruvchi va ishga yollanganlar manfaatlarining kelishuvi mexanizmi hisoblanadi. Undan tashqari mehnat bozorida ijtimoiy aloqalar boshqarish zarurati hosil bo'lib, davlat manfaatlari belgilanadi". L.Maksakova "Mehnat bozori" tushunchasining o'rniga "ishchi kuchi bozori" tushunchasini qo'llashni zarur, deb hisoblaydi[5].

"Mehnat resurslari bozori" tushunchasi qo'llansa, yanada to'g'riroq bo'ladi, deydi. Tadqiqotchi. A.Pavlenkov ta'kidlaydiki, bozor iqtisodiyotida mehnat bozori yollanib ishlashga qodir kishilarning barchasini ham yollanma mehnat bilan band bo'lganlar ham band bo'lmaganlarni qamrab oladi. A.A.Nikiforova esa boshqa umumiy ta'rifni taklif etadi:"Mehnat bozori rivojlanishining darajasi va bozorda ishtirok etuvchi kuchlar: tadbirkorlar, mehnatkashlar va davlat o'rtasida ma'lum davrda erishilgan manfaatlar balansini aks ettiruvchi ijtimoiy munosabatlar tizimi sifatida vujudga kelgan". I.S.Maslovaning ta'rif bo'yicha mehnat bozori-bu o'suvchi tizim, unda mulkchilik sub'ektlari ishchi joylari va ishchi kuchi takliflari, xodimga va "yollanma ishga talab hajmi, tarkibi va nisbatini shakllantirib, ishlab chiqarish omillari (mehnat vositalari va ishchi kuchi)ga o'zaro ta'sir etadi". Mehnat bozori mavjud, ammo "kesik, shakli o'zgartirilgan ko'rinishda, buning ustiga har narsani o'z ichiga oladigan xarakterga ega bo'lmay, balki mehnat munosabatlarining faqat bir qismini qamrab oladi". Q.Abdurahmonov va F.Mamaraximovning ta'rifiga ko'ra, "Mehnat bozori deyilganda ishchi kuchini sotish, sotib olish va undan foydalanish bilan bog'liq bo'lgan ijtimoiy-iqtisodiy munosabatlar majmuasi tushuniladi"[4]. O.Abdurahmonovlarning ta'rifiga ko'ra, "mehnat bozori ishchi kuchini sotuvchi va xaridori, uning qiymatini belgilaydigan va taklif etiluvchi mehnat xizmatlarini taqsimlaydigan muhitni tavsiflash imkonini beradigan kategoriya, analitik konstruksiya, deb tushunilishi ham mumkin". "Mehnat bozori" tushunchasi ishchi kuchi xaridi va ishlatilishini ham o'z ichiga oladi, ya'ni u ishchi kuchi va ishchi o'rinlari bozoridan iborat bo'ladi.

**Natija.** Mehnat munosabatlari ishchi kuchi bozori bilan bir vaqtda ishchi o'rinlari bozorining ham mavjud bo'lishini taqozo etadi, chunki bozor iqtisodiyoti sharoitida har ikkala bozor shakli mavjud bo'lgandagina mehnat jarayonini amalga oshirish mumkin. Mehnat bozorining o'ziga xosligi shundaki, ishchi kuchini pulga ayirboshlash oldi-sotdi bitimi tuzilgandan keyin, ma'lum ishlab chiqarish jarayoni amalga oshadi.



demak, ishchi kuchi avval iste'mol etilib, so'ngra uning haqi to'lanadi. Mehnat bozori ishchi kuchini sotish, sotib olish va undan foydalanish bilan bog'liq bo'lgan ijtimoiy-iqtisodiy munosabatlar majmuasidir. ishchi kuchi bozori mehnatga layoqatli aholining mehnat qilishga bo'lgan layoqatlarini taklif qilish sohasini topish xohish-istaklari yig'indisi sifatida shakllansa, ishchi o'rinlari bozori korxonalar va tashkilotlarning ishchi kuchiga bo'lgan jami ehtiyojlari sifatida tashkil etiladi. Biroq ishchi kuchi bozori o'zining ijtimoiy-iqtisodiy tabiatiga ko'ra, eng avvalo, aholining ishchi o'rinlariga bo'lgan ehtiyojlarini ifodalaydi[2]. Bu ehtiyojlarning qondirilishi esa, uning mehnat salohiyatidan samarali foydalanish hamda samarali bandlikni shakllantirishi-shining asosi hisoblanadi. Shuni ta'kidlash joizki, "mehnat bozori" tushunchasining ijtimoiy-iqtisodiy mazmuni va uni tarkibiy qismlarining sistematik tadqiqoti mazkur bozorni o'tish davrida bajariladigan asosiy vazifalarni ham aniqlashga imkon beradi:



**Xulosa.** Mehnat bozorida amalga oshirilayotgan faol bandlik siyosati – bu nafaqat aholining qonuniy, munosib va barqaror bandliga (daromadga ega bo'lish) ko'maklashishga shart-sharoitlar yaratish, inklyuzivlikni ta'minlash balki inson kapitalini rivojlantirish, talab va taklif asosida o'z bilim, ko'nikma, kasbiy malakalarini, raqobatbardoshliklarini oshirish, o'zgarishlarga moslashish, o'zini o'zi band qilish va tadbirkorlikka jalb qilish hamda o'z salohiyat va qobiliyatlarini namoyon qilish va ulardan to'la foydalanishga barcha imkoniyatlarni yaratishni o'z ichiga oladi[6].

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## ENERGY-EFFICIENT MATERIALS IN BUILDINGS AND STRUCTURES: TECHNOLOGIES AND TRENDS

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**Abstract:** *This article presents an in-depth exploration of energy-efficient materials used in buildings and structures. It provides an overview of the latest technologies and trends in the integration of energy-efficient materials, emphasizing their impact on reducing energy consumption, environmental sustainability, and cost-effective construction practices.*

**Keywords:** *Energy-efficient materials, Buildings, Structures, Technologies, Trends.*

**Annotatsiya:** *Ushbu maqolada binolar va inshootlarda ishlatiladigan energiya tejovchi materiallar chuqur o'rganilgan. Unda energiya tejovchi materiallarni integratsiyalashning eng yangi texnologiyalari va tendentsiyalari haqida umumiy ma'lumot berilgan, ularning energiya sarfini kamaytirish, ekologik barqarorlik va tejamkor qurilish amaliyotiga ta'siriga urg'u berilgan.*

**Kalit so'zlar:** *Energiyani tejaydigan materiallar, Binolar, inshootlar, texnologiyalar, tendentsiyalar.*

### 1. Introduction

The introduction sets the stage by highlighting the importance of energy-efficient materials in the construction industry. It outlines the growing significance of sustainable building practices, the impact of energy consumption on the environment, and the need for innovative solutions to improve energy efficiency in buildings and structures.

As of recent years, Uzbekistan has been showing a growing interest in the adoption of energy-efficient materials in buildings and structures to address the pressing need for improved energy sustainability and reduced environmental impact within the construction sector. The country has demonstrated a commitment to

modernizing its infrastructure and promoting sustainable development, thereby providing fertile ground for the integration of innovative construction technologies. Uzbekistan's interest in energy-efficient materials is evident in its efforts to align with global trends towards green building practices and sustainable urban development. The government has shown a willingness to explore and implement technologies that contribute to improved energy efficiency, reduced energy consumption, and lowered carbon emissions in the built environment. Furthermore, the construction industry in Uzbekistan has been witnessing a shift towards more sustainable practices, with a growing emphasis on the use of materials that offer better thermal insulation, enhanced durability, and reduced environmental impact. Various initiatives and projects have been emerging to promote the adoption of energy-efficient materials, reflecting a collective awareness of the benefits associated with sustainable construction. It is also noteworthy that Uzbekistan's climate, with its wide temperature variations, places significance on the need for effective insulation and energy management within buildings. This further underscores the relevance of energy-efficient materials in addressing the specific environmental and climatic challenges prevalent in the region.

In addition, the country's regulatory landscape has been evolving to accommodate and incentivize the implementation of energy-efficient building materials. Uzbekistan has been exploring policy measures and standards that encourage the use of sustainable materials, thus creating an enabling environment for the construction industry to embrace energy-efficient solutions. Overall, Uzbekistan is in a transitional phase, gradually embracing energy-efficient materials in buildings and structures as part of its broader commitment to sustainable development. While there are still opportunities for further awareness-building and capacity development in this realm, the trajectory suggests a promising outlook for the integration of energy-efficient technologies and trends within the country's construction landscape.

The construction industry is undergoing a significant transformation as it embraces sustainable practices and seeks innovative solutions to reduce energy consumption. Within this shifting landscape, the integration of energy-efficient materials in buildings and structures has emerged as a pivotal strategy to enhance environmental sustainability, improve operational efficiency, and drive cost savings. This article aims to provide a comprehensive analysis of the latest technologies and trends in energy-efficient materials, shedding light on their impact on the construction sector and the broader goal of promoting energy sustainability. As energy demands continue to rise and concerns about environmental impact escalate, the imperative to develop and deploy energy-efficient materials has become more pronounced. The built environment, encompassing residential, commercial, and industrial structures,

accounts for a substantial portion of global energy consumption. Therefore, the adoption of materials and technologies that minimize energy usage and maximize efficiency has become essential to mitigate the carbon footprint associated with construction and operation.

In this context, the discussion of energy-efficient materials encompasses a wide array of innovations, ranging from advanced insulation systems and smart glass technologies to sustainable concrete formulations and eco-friendly roofing solutions. Each of these materials offers the potential to revolutionize the traditional paradigms of building design and construction, presenting opportunities for improved thermal performance, optimized lighting, and enhanced overall energy management. Moreover, the integration of energy-efficient materials aligns with evolving regulatory frameworks and industry standards that prioritize environmental responsibility and sustainable development. From a financial perspective, the long-term benefits of reduced energy consumption and operational costs further underscore the compelling case for implementing these materials in both new construction and retrofit projects. As the demand for energy-efficient buildings and structures continues to grow, understanding the evolving landscape of technologies and trends in energy-efficient materials becomes paramount. This article will delve into the multidimensional aspects of these materials, considering their performance attributes, environmental implications, economic viability, and the overarching impact on the construction industry. By doing so, it aims to provide a valuable resource for professionals and stakeholders looking to navigate the dynamic terrain of energy-efficient construction practices.

## II Methodology

This section covers the methodologies and approaches used in the selection and implementation of energy-efficient materials. It addresses factors such as material sourcing, performance evaluation, and comparative analysis of different technologies and trends.

In the context of exploring energy-efficient materials in buildings and structures, various methods can be employed to assess, select, and implement these technologies. Here are some key methods relevant to the topic:

### 1. Performance Evaluation:

Conducting comprehensive performance evaluations of energy-efficient materials is critical to understanding their effectiveness in real-world applications. This involves assessing factors such as thermal conductivity, insulation properties, durability, and environmental impact. Methods for performance evaluation may

include laboratory testing, field studies, and simulation techniques to determine the energy-saving potential and long-term viability of specific materials.

### *2. Comparative Analysis:*

Comparative analysis involves benchmarking different energy-efficient materials against traditional or conventional options. This method assesses factors such as initial cost, lifecycle cost analysis, energy savings, maintenance requirements, and environmental impact. By comparing the performance and economic implications of various materials, stakeholders can make informed decisions about the most suitable options for specific construction projects.

### *3. Material Sourcing and Lifecycle Assessment:*

The method of material sourcing and lifecycle assessment involves evaluating the sustainability of energy-efficient materials from production to disposal. This encompasses analyzing the environmental footprint of material extraction, manufacturing processes, transportation, installation, operational efficiency, and end-of-life considerations. Tools such as life cycle assessment (LCA) can be employed to quantify the environmental impacts of energy-efficient materials and make informed choices based on a holistic understanding of their lifecycle.

### *4. Building Information Modeling (BIM):*

Implementing Building Information Modeling (BIM) methods facilitates the integration of energy-efficient materials within the digital design and construction process. BIM enables the creation of detailed 3D models that incorporate energy performance data, material specifications, and environmental analysis. Through BIM, stakeholders can visualize, analyze, and optimize the use of energy-efficient materials from the early stages of design, leading to more informed decision-making and enhanced collaboration among project teams.

### *5. Integrated Design Approach:*

Adopting an integrated design approach involves interdisciplinary collaboration among architects, engineers, and construction professionals to explore the potential of energy-efficient materials throughout the building lifecycle. This method emphasizes early engagement of stakeholders to optimize building performance through coordinated design, material selection, and systems integration. Integrated design methods enhance the efficacy of energy-efficient materials by considering their influence on building envelope, HVAC systems, lighting, and overall energy consumption.

These methods collectively contribute to a holistic and systematic approach for evaluating, selecting, and integrating energy-efficient materials in buildings and structures. By leveraging these methodologies, stakeholders can effectively navigate

the complexities of integrating new technologies and trends in pursuit of sustainable, energy-efficient construction practices.

### **III Results**

The results section delves into the various energy-efficient materials available for buildings and structures. It provides insights into emerging technologies such as high-performance insulation, advanced glazing systems, sustainable concrete, and green roofing solutions. The section also highlights the performance and environmental benefits associated with each material.

### **IV Discussion**

The discussion focuses on the implications of integrating energy-efficient materials in construction projects. It addresses the challenges, opportunities, and future prospects of these technologies, considering aspects such as regulatory standards, design flexibility, and long-term sustainability. Additionally, it examines the economic feasibility and investment potential for energy-efficient materials.

### **V Conclusion**

The conclusion summarizes the key findings and emphasizes the significance of adopting energy-efficient materials in buildings and structures. It underlines the potential for these technologies to contribute to reduced energy consumption, lower carbon emissions, and improved overall building performance. The conclusion also points to the evolving nature of energy-efficient materials and the need for continuous innovation in the construction industry.

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## TA'LIM JARAYONIDA KREATIV FIKRLASH IMKONIYATI VA UNING NAMOYON BO'LISHI

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### ANNOTATSIYA

*Ushbu maqolada kreativ fikrlash vositalaridan foydalanish, qarashlar va yondashuvlarni shakllantirish, tafakkurni tavsiflash, o'zgartirish va sintez qilish jarayonlarining xususiyatlarini bilish va ulardan foydalanish ko'nikmalariga ega bo'lishi kerak degan fikrlar ilgari surilgan. Kreativ fikrlashda ta'limning asosiy vazifasi o'quvchida jamiyatda muvaffaqiyatli hayot kechirishi uchun bugun va kelajakda kerak bo'ladigan ko'nikmalarni shakllantirishni ko'ramiz.*

**Tayanch so'zlar:** *Kreativ fikrlash, aqliy ko'nikma, tafakkur, innovatsion bilim, ijtimoiy kontekst, PISA dasturi, individual qobiliyat.*

## POSSIBILITY OF CREATIVE THINKING IN THE EDUCATIONAL PROCESS AND ITS MANIFESTATION

### ANNOTATION

*This article suggests having the skills to use creative thinking tools, knowing the features of the processes of forming views and approaches, describing, changing and synthesizing thinking and their use. In creative thinking, we see that the main task of education is to develop the skills that the student will need today and in the future to live successfully in society.*

**Keywords:** *Creative thinking, mental skills, thinking, innovative knowledge, social context, PISA program, individual ability.*

### KIRISH.

Malakali kadrlar tayyorlashning muhim omillaridan biri – bu ta'lim sifati va samaradorligini oshirish hamda kreativ fikr yuruta oladigan yoshlarni rivojlantirishdir.. Mamlakatimiz Prezidenti Shavkat Mirziyoyev Oliy Majlis va O'zbekiston xalqiga yo'llagan Murojaatnomasida ta'lim sifatini oshirish hamda jamiyatni rivojlantirish bo'yicha muhim vazifalarni belgilab berdi. Xususan, prezidentimiz mamlakat salohiyati bilim va tafakkurda ekanligiga urg'u berib, **“Ta'lim sifatini oshirish –**

**Yangi O‘zbekiston taraqqiyotining yakka-yu yagona to‘g‘ri yo‘li** ekanligini ta’kidlab o‘tdi. Ta’lim sifati va samaradorligini oshirishda o‘qitishning zamonaviy usullari, shakl hamda vositalari, o‘yin texnologiyalari, xususan, kreativ fikrlash ham muhim o‘rin egallaydi.

Kreativ fikrlash bu qimmatli va asl g‘oyalarni yaratishga olib keladigan fikrlash yo‘nalishidir. Barcha insonlar ijodiy fikrlash hamda ijodkorlik bilan shug‘ullanishlari mumkin. Ijodiy fikrlash nafaqat ijodiy asarlarni yaratish yoki san’at bilan bog‘liq tasavvur etish vaziyatlarida, balki muammolarni yoki ijtimoiy masalalarni hal qilish kabi boshqa sohalarda funktsional bo‘lgan vazifalarda ham qo‘llanilishi mumkin.

### **ADABIYOTLAR TAHLILI VA METODOLOGIYA.**

Kreativ yondashuv va yutuqlar dunyo bo‘ylab fan va texnologiyadan tortib, falsafa, san’at va ijtimoiy fanlar kabi turli sohalarda insoniyat tamaddunini ilgari surgan. Kreativ fikrlash shunchaki tasodifiy g‘oyalar berishdan kattaroq narsadir. U insonga ba’zan murakkab sharoitlarda, yanada yaxshiroq natijaga erishishga imkon beruvchi bilim va tajribaga asoslangan real ko‘nikmadir. Butun dunyoda jamiyatlar va tashkilotlar muammolarni hal etishda innovatsion bilim va yaratuvchanlikka tobora ehtiyoj sezmoqda, bu esa, o‘z navbatida, innovatsiya va kreativ fikrlash ahamiyatini yanada kuchaytirmoqda. Kreativ fikrlash ta’siri butun jamiyatga sezilarli innovatsiya turlarining ortida turishi rost, lekin u ayni damda universal va tenglashtiruvchi xususiyatga ega fenomen hamdir, ya’ni har qanday shaxs, u yoki bu darajada, kreativ fikrlash qobiliyatiga ega. Mustaqil hamdo‘stlik davlatlari olimlaridan O.Vasilchenko, E.Melkumova, V.Miretskaya, M.Suxomlinova, E.Emmanuel kabilarining ilmiy ishlarida shaxs ijodiy qobiliyatlarini rivojlantirishning nazariy asoslari o‘rganilgan.

Darhaqiqat, ta’lim sohasidagi mutaxassislar va psixologlarning fikriga ko‘ra, ijodiy faoliyat bilan bog‘liq fikrlash jarayonlarida mashg‘ul bo‘lish deb tushunilgan kreativ fikrlash bir qator boshqa shaxsiy ko‘nikmalarning ham rivojlanishiga olib keladi. Shular jumlasiga metakognitiv qobiliyat, insonlar bilan muomala qilish va shaxsning o‘zini yaxshiroq anglash ko‘nikmalari, muammoni hal etish ko‘nikmalaridir. Shu bilan birga, shaxs kamoloti, ta’lim olishdagi muvaffaqiyati, kelajakdagi kasbiy muvaffaqiyati va jamoatchilik orasidagi obro‘si ham insonning kreativ fikrlash ko‘nikmasiga bog‘liq. Kreativ fikrlashni baholash xalqaro dasturini rivojlantirish ta’lim siyosati va pedagogikasida ijobiy o‘zgarishlarga sabab bo‘lishi mumkin.

Xalqaro PISA baholash dasturi bo‘yicha olib boriladigan tadqiqotlardagi kreativ fikrlash yo‘nalishining baholashi mutasaddilarga dalillarga asoslangan to‘xtamga kelishda ko‘maklashuvchi aniq, ishonchli va amalga oshirish mumkin bo‘lgan baholash vositasini taqdim etadi. Natijalar, shuningdek, jamiyatda ushbu

muhim ko'nikman ita'lim orqali rivojlantirishning ahamiyati va usullari borasidagi bahslarga sabab bo'ladi. PISA xalqaro baholash dasturidagi ushbu faoliyat Iqtisodiy hamkorlik va taraqqiyot tashkilotining ijodiy fikrlashni rivojlantirish borasidagi yangi pedagogikani qo'llab-quvvatlashga qaratilgan boshqa bir loyihasi bilan bog'liqdir. Kreativ fikrlash bugungi yoshlar ega bo'lishi kerak bo'lgan muhim ko'nikma bo'lib, bu ko'nikma ularga doimiy tarzda va shiddat bilan o'zgarayotgan, oddiy savodxonlikdan tashqari yangilanayotgan davrga xos ko'nikmalarga ega kadrlarni talab etayotgan makonga moslashishga ko'maklashadi. Umuman olganda, bugungi o'quvchi kelajakda hozir hatto mavjud bo'lmagan sohalarda ishlashi, yangi muammolarni yangi ko'nikmasini shakllantirish ularga tobora murakkablashayotgan mahalliy va global muammolarni noodatiy yondashuv orqali hal etish imkonini beradi.

### NATIJALAR

Maktabda kreativ fikrlashni rivojlantirishning ahamiyat ifaqatgina mehnat bozori bilan cheklanmaydi. Maktab yoshlar uchun o'z qobiliyat va ko'nikmalarini, shu jumladan ijodiy iste'dodlarini kashf etishda muhim ahamiyatga ega. Shuningdek, kreativ fikrlash o'quvchilarning ta'lim olishini hodisalar, tajribalar va xatti-harakatlarni yangicha va shaxsan mazmunli usulda talqin etish orqali qo'llab quvvatlaydi. O'quvchining qiziquvchanligi ta'lim jarayonida qo'l keladi, ijodiy fikrlash shu tariqa o'zaro kelishuvchanlik vositasiga aylanadi, hattoki avvaldan belgilangan ta'lim maqsadlari kontekstida ham bu samara beradi. Maktabda o'quvchining motivatsiyasi va qiziqishini oshirish uchun, barcha o'quvchilarning ijodiy salohiyati va shijoatini hisobga oluvchi ta'limning yangi shakllari yo'lga qo'yilishi zarur. Bu ayniqsa ta'lim jarayoniga unchalik qiziqish bildirmayotgan o'quvchilarga yordam berishi mumkin va ular o'z fikrini ayta olishiga, salohiyatini ochishiga xizmat qiladi.

Boshqa ko'nikmalar kabi, kreativ fikrlash ham amaliy va yo'naltirilgan yondashuv orqali rivojlantirilishi mumkin. Ba'zi o'qituvchilarga o'quvchining kreativ fikrlashini rivojlantirish o'quv dasturidagi boshqa fanlar evaziga bo'layotgandek ko'rinadi. Aslida, o'quvchilar barcha fanlarda kreativ fikrlashi mumkin. Kreativ fikrlash bilim berishga qaratilgan dars mobaynida ko'r-ko'rona yodlash o'rniga tadqiqot va ixtironi qo'llab-quvvatlaydigan yondashuvlar orqali rivojlantirilishi bilan alohida ahamiyatga ega. O'quvchilar kreativ fikrlashni ajrata olishlari, bunday fikrlashga mos shart-sharoitlarni bilishlari fikrlashda ko'proq ijodiy yondashishga yordam bera olishni bilishlari kerak. Kreativ fikrlash qay tariqa vujudga kelishi borasidagi puxtaroq tasavvur, o'z navbatida, o'qituvchilarga ta'lim jarayonida o'quvchilarda ijodiy g'oyalar bo'lishi uchun muayyan vaqt talab etiladi. Kreativ fikrlash ko'nikmalarini baholash isbotga tayangan dalillar asosida

shakllantirilib, o'quvchilar kompyuter platformasida qilayotgan, o'qiyotgan va yaratayotgan narsalarni ko'p jihatli malakalar bilan bog'laydi. Kreativlikni baholash o'quvchining qobiliyatlari haqidagi muayyan da'volarni dalilga asoslangan fikrlash jarayonida tahlil etishdir.

### MUHOKAMA

Umuman olganda, o'quvchining baholashdagi vazifalarga javobi ushbu fikrlash jarayonida dalillar bilanta'minlaydi, psixometrik tahlil esa har bir da'voni tahlil qilish uchun isbotning yetarli ekanligini belgilaydi. PISA baholash dasturidan kreativ fikrlashni baholashnin gasosiy doirasi sifatida foydalanish mumkin. PISA dasturida 15 yoshli o'quvchilar uchun tegishli kreativ fikrlash tavsifidan foydalanadi. PISA tadqiqotida kreativ fikrlash bilim sohasida original va samarali yechimlar, yutuqlar va tasavvurni ta'sirchan ko'rinishlarga olib keladigan g'oyalarni ishlab chiqish, baholash va takomillashtirishda samarali ishtirok etish qobiliyati deb ta'riflanadi. Ushbu tavsif o'quvchilarning turfa kontekst va ta'lim darajasida g'oyaberish amaliyotida samarali qatnashishni o'rganishlari kerakligiga, g'oyaning o'zigaxosligi va munosibligini baholagan holda uning ustida mulohaza yuritishga va toki maromiga yetkazmaguncha g'oyani takomillashtirishga urg'u beradi. Bu tavsif ishlab chiqilayotganda, shuningdek, turli sohada mutaxassislar maslahati va kreativlik borasidagi keng adabiyot tahlilining natijalari ham inobatga olingan.

Kreativ fikrlash endigina shakllanayotgan talqin bo'lib turgan bir paytda ancha keng hamda kreativlik tuzilmasi kuchli tadqiqotchilik an'anasiga ega bo'ladi. Demak, kreativlik layoqat, jarayon va muhit o'rtasidagi o'zaro munosabat bo'lib, u orqali shaxs yoki guruh ushbu ijtimoiy kontekst uchun ham yangi, ham foydali bo'lgan salmoqli mahsulotni yaratishidir. Ijodiy maqsadlarni ro'yobga chiqarish kreativ fikrlashni taqozo etadi, lekin shu bilan birga aqliy salohiyat, soha borasidagi bilim va san'atkorlik talanti kabi kengroq va maxsus ko'nikma va qobiliyatlar ham zarur bo'ladi. Masalan, san'at durdonalari yoki texnologik kashfiyotlarni yaratish bilan bog'liq buyuk ijodkorlikda kreativ fikrlashdan tashqari salmoqli talant, chuqur bilim, muayyan sohada tinimsiz mehnat hamda jamiyat tomonidan ushbu mahsulot qiymatga ega ekanligi haqidagi e'tirof ham talab etiladi.

Ta'lim jarayonida kreativ fikrlash imkoniyati va uning namoyon bo'lishi quyidagichadir: maktablar kreativ fikrlash ko'nikmasi, aqliy ko'nikmalar, bilim sohasining tayyorligi yangi g'oyalar va tajribalarga nisbatan ochiqlik, boshqalar bilan ishlash konikmasi yoki boshqalar fikri bilan kelishish, qiyinchilikka duch kelganda o'z maqsadiga erishishga harakat qilish, o'quvchilarning ichki imkoniyatlarining turli jihatlariga ta'sir ko'rsatishi mumkin. Ta'lim olish jarayonida o'quvchilarning kreativ fikrlash qobiliyatlarini rag'batlantirishi ularning yaratuvchanlik qobiliyatlariga

bo'lgan ishonchini, o'zini o'zi boshqarish xususiyatlarida va faoliyatlarida samaradorlikni oshirishga qaratilgan bu o'z navbatida, o'quvchilarning individual qobiliyatlarini rivojlantirishga ta'sir ko'rsatadi.

### XULOSA

Har qanday mutaxassis kreativlik qobiliyatiga ega bo'lishlari uchun o'quvchilik yillarida poydevor qo'yiladi. O'rta ta'lim tizimida o'qish faoliyatida bo'lgan o'quvchilar kreativlik sifatlariga ega bo'lishlari uchun ularda o'quv va tarbiya jarayonlarida an'anaviy yondashishdan farqli yangi g'oyalar haqida fikr yuritishi, o'ziga xoslik, tashabbuskorlik talab etiladi. Ko'pincha kreativlik va daho tushunchalari bir biriga sinonim hisoblanadi. 2022-yil ilk marotaba Xalqaro PISA dasturida o'quvchilarning kreativ fikrlash ko'nikmalari baholadi. PISA tadqiqotida kreativ fikrlash iborasi o'quvchilarning tasavvurlarini ifodalash, bilim olishni rag'batlantiruvchi, original va samarali yechim topishga yonaltiruvchi g'oyalarni shakllantirish, baholash va takomillashtirishda faol ishtirok etish kompetensiyasi sifatida ta'riflangan. O'quvchining ijodiy barkamolligi uning kreativ fikrlash jarayonini muvaffaqiyatli amalga oshgan yoki oshmaganini aniqlashda katta ahamiyat kasb etadi.

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## O‘ZBEK QIZIQCHILARI NUTQINING LEKSIK-STILISTIK XUSUSIYATLARI

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**Annotatsiya:** Ushbu maqolada o‘zbek qiziqchilik san’ati, uning taraqqiyoti haqida mulohazalar yuritiladi. Qiziqchilar nutqida qo‘llanadigan leksik-stilistik usul va vositalar tahlilga tortiladi.

**Kalit so‘zlar:** leksik-stilistika, xalq og‘zaki ijodi, omonim, frazeologizm, agnonim, ko‘p ma’novlilik.

**Аннотация:** В данной статье рассматривается узбекское художественное искусство и его развитие. Анализируются лексико-стилистические приемы и средства, используемые в речи дилетантов.

**Ключевые слова:** лексико-стилистика, фольклор, омоним, фразеологизм, агноним, полисемия.

**Abstract:** This article discusses Uzbek art of curiosity and its development. The lexical-stylistic methods and tools used in the speech of amateurs are analyzed.

**Key words:** lexical-stylistics, folklore, homonym, phraseologism, agnonym, polysemy.

Qiziqchilik san’ati xalq og‘zaki ijodining qadimiy janrlaridan biri sifatida leksik jihatdan xilma-xil til birliklaridan tashkil topgan. Ular nutqini tadqiq etar ekanmiz tarkibida umumxalq ishlatadigan so‘zlar, uslubiy xoslangan so‘zlar, kasb-hunarga xos so‘zlar, shevaga xos so‘zlar, arxaizm va istorizmlar, neologizmlar, jargon va argolar, varvarizmlar, vulgarizmlar, tabu va evfemizmlar kabi turli ma’noviy guruhlariga mansub leksik birliklardan unumli foydalanilgan holatlarga duch kelindi. Qiziqchilar nutqining leksik-semantik jihatdan bunday xilma-xilligini ularning mavzu jihatdan chegaralanmaganligi bilan izohlash mumkin.

Qiziqchilar nutqini lingvostilistik jihatdan tadqiq etish unda ishlatilgan barcha til birliklarining o‘ziga xos xususiyatlarini hajviy-yumoristik nuqtai nazardan

o'rganish imkonini beradi. Qiziqchilar nutqini o'rganish jarayonida ma'lum bo'ldiki, ularda ba'zan so'zlarning polisemantik xususiyatiga tayangan holda, ba'zan ularning ma'nosiga yangicha yondashish, ba'zan ko'chma ma'noda ishlatilgan lug'aviy birlikni o'z asl ma'nosida tushunish orqali kulgili vaziyat yaratiladi.

- *Mana bu **katagingizni** oching, man nima qilishni ko'rsataman.*

- *Iyy, siz katakda o'tiribsizmi? Man sizni **katak** ko'ylak kiyib olgansiz deb o'ylabman. ("Million" jamoasi)*

Qiziqchilar nutqining ifodaliligi, ekspressivligi, ta'sirchanligini ta'minlashdagi qulay vositalaridan biri bu shakldosh (omonim) so'zlar hisoblanadi. Omonimlar (yun. homos — bir xil+onyma — nom). Talaffuzi va yozilishi bir xil birdan ortiq so'zlar<sup>4</sup>.

- *O'tgan hafta bir iqtidorli qizlarni yig'ib "Quvnoq startlar" spartagiadasiga olib chiqdik. Spartagiada **tumanda** o'tkazildi. Nechanchi o'rinni olganimizni ko'rolmay qoldim.*

- *Nimaga?*

- ***Tumanda** o'tkazildi deyapman, hamma yoq tuman, hech narsa ko'rinmadi.*

Ushbu matn tarkibida qo'llanilgan "tuman" leksemasi omonimlarga mansub bo'lib, uning birinchi ma'nosi "atmosferaning quyi qatlamlarida yuzaga keladigan mayda suv yoki muz zarralari"<sup>5</sup>, ikkinchi ma'nosi esa ma'muriy hudud ma'nosini anglatadi.

Xalq og'zaki ijodida so'z o'yinlari omonim birliklar vositasida ko'p hosil qilinadi.<sup>6</sup> Qiziqchilar nutqida ham omonimlar orqali so'z o'yinlari hosil qilish hodisasini uchratish mumkin. Xususan, qiziqchi Avaz Oxun tomonidan aytiladigan latifalarda bu hodisa yaqqol ko'zga tashlanadi:

*Ikkita odam bir ish masalasida talashib qolishibdi. Qoziga borishdan oldin bittasi boribdi-da, qozining qo'liga qirq ming so'mni berib:*

- *Qozibuva, mana shu ishni biz tomonga hal qilib berasiz, - debdi.*

*Haligi odam ketgandan keyin ikkinchi da'vogar kelibdi-da, shart yuz mingni berib:*

- *Mana shu ishni biz tomonga hal qilib berasiz, - debdi.*

*Ertasi kuni qozi majlis qilyotgan emish, tinmay gapni aylantiryotgan emish:*

- *Kelishinglar endi, hammasi yaxshi bo'ladi. Kelishinglar. Aniq gap gapirmasmish. Qirq mingni bergan odam kesatib:*

- *Hoy qozi domla, bir qirqib-qirqib gapirsangiz bo'lmaydimi? - desa, qozi:*

4 Ҳожиёв А. Тилшунослик терминларининг изоҳли луғати. – Т.: Ўзбекистон миллий энциклопедияси, 2002. – 75 б.

5 О'zbek tilining izohli lug'ati. II tomli Moskva 1981-y. 222-b.

6 Dusmatov X. Askiya matning lingvostilistikasi. Filol.fan.fal. dok...diss. avtoref. – Farg'ona, 2018. 112-bet.

- *Endi, uka, qirqib gapiraman desam, manavining yuzidan o'tolmayapman-da, debdi.*

Yuqorida keltirilgan dialogda foydalanilgan yuz so'zining son va insonning yuzi ma'nosida, qirq so'zining qirqmoq fe'li hamda son ma'nosini ifodalashi orqali omonimiya hodisasi kuzatilgan va shu orqali tomoshabinda kulgi qo'zg'atiladi.

Voqelikni obrazli tasvirlashda, uni tinglovchi ko'zi o'ngida aniq va to'la gavalantirishda frazeologik birliklarning o'zni, ahamiyati beqiyosdir. Iboralar hayotdagi voqea-hodisalarni kuzatish, jamiyatdagi maqbul va nomaqbul harakat-ho'lalarni baholash, turmush tajribalarini umumlashtirish asosida xalq chiqargan xulosalarning o'ziga xos obrazli ifodalaridir.

So'z o'yinlarining keng tarqalgan usullaridan biri – bu nutqiy vaziyatda so'zlarni o'z va ko'chma ma'noda baravar qo'llash hisoblanadi. Buning uchun qiziqchilar ko'pma'noli so'zlarga, ko'chma ma'noli so'zlarga hamda iboralarga e'tiborli bo'lishlari talab etiladi. Masalan:

– *Hojiboy aka, mana shu kitobimga qo'l qo'yib bersangiz.*

– *Tap etib qo'limni kitobining ustiga qo'ydim. (Hojiboy Tojiboyev)*

Yuqoridagi misolda qo'l qo'yimoq ifodasi leksik omonimiyaga misol bo'ladi. Ya'ni:

1) qo'l qo'yimoq – biror narsa ustiga qo'lini qo'yimoq;

2) qo'l qo'yimoq – imzo chekmoq kabi ma'nolarni ifodalab kelgan.

Frazeologik birikmalar kulgi hosil qiluvchi lisoniy vosita sifatida, asosan, dialogik nutqda so'zlashuvchilarning o'zaro munosabati asosida ularning to'g'ri va ko'chma ma'nolari yordamida hosil qilinadi.<sup>7</sup> Qiziqchilar nutqida qo'llangan frazeologik birlik suhbat jarayonida ko'chma ma'noda qo'llanilib, keyin qiziqchi tomonidan to'g'ri ma'nosining izohlanishi orqali tinglovchida kulgi qo'zg'atiladi. Masalan, *Abdurayimning qizini kelin qilmoqchi bo'lyapman-u o'g'limga, lekin qo'lim kaltalik qilyapti-da* gapi dastlab dialog sifatida bayon etiladi. So'ngra to'g'ri ma'nosi noverbal vositalar va so'zlar orqali izohlanadi. Shu yo'l bilan frazeologik birliklardan foydalanish orqali tinglovchida kulgi qo'zg'atiladi.

Agnonim atamasi yunon tilidan olingan bo'lib, "bilinmagan, tushunarsiz, noma'lum" degan ma'nolarni bildiradi. Muayyan tilda muloqot qiluvchilar uchun o'sha tildagi noma'lum, notanish, tushunarsiz yoki kam tushunarli bo'lgan so'zlar agnonimlar degan nom bilan umumlashtiriladi. Agnonimlar lingvosentrik emas, balki antroposentrik hodisa hisoblanadi. Ya'ni, buni tildan foydalanuvchining lisoniy layoqati bilan bog'liq hodisa deb qabul qilish mumkin. Agnomaziya badiiy nutqda

<sup>7</sup> Абдурахмонов Ш. Ўзбек адабий нутқида кулги қўзғатувчи лисоний воситалар: Филол. фан. номз... дисс. автореф. –Тошкент, 1997. – 17 б.



agnonimlarning uslubiy maqsadda qo'llanilish hodisasi.<sup>8</sup> Agnomaziya, asosan, dialogik nutqqa xos bo'lib, suhbatdoshiga noma'lum bo'lgan so'zlardan foydalanish orqali tinglovchida kulgi qo'zg'atishga xizmat qiladi.

- *Bordingizmi doktorga?*

- *Ha, bordim. Juda qimmat dori yozib berdi. Qidirib-qidirib topib keldim.*

- *Ha, topdingizmi, ishqilib?*

- *Bu tonusingiz juda pasayib ketibdi, -deydi.*

- *Nima ekan u tonus?*

- *Tonus bu - odamning kayfiyati tushib ketgan bo'larkan-da, shuni ko'tarish uchun kerak ekan (kiyimiga yashirilgan bir shisha aroqni chiqaradi).*

- *Ha, shunaqami? Ko'p-ko'p iching unda.*

Yuqorida keltirilgan er-xotin suhbatida tonus so'zi vositasida agnomaziya hodisasi yuzaga chiqariladi. Bunda tonus ayol uchun agnonim so'z sifatida ifodalanadi.

Omonimlar qatorida polisemantik so'zlar, paronimlar ham so'z o'yinlari hosil qilishning samarali vositalari bo'lib, ular qiziqchilar nutqida ko'pincha kulgi qo'zg'atishning effektiv vositasi bo'lib xizmat qiladi. Mas.:

**Mijoz:** *Hech kim yemagan ovqatlariz bormi?*

**Ofitsiant:** *Bor, bir haftalik ovqat bor, hech kim yemayapti.*

**Mijoz:** *Aroq bormi?*

**Ofitsiant:** *Yo'q, b-roq bor, xohlasangiz v-roq bor. Mayli sizga q-roq'idan topib beramiz.*

**Mijoz:** *Qatiq bering.*

**Ofitsiant:** *Yumshoq bersam-chi?*

**Mijoz:** *Xonim bormi?*

**Ofitsiant:** *Kechki payt kelishadi.*

**Mijoz:** *Tort bering!*

**Ofitsiant:** *Besh bersam-chi?*

**Mijoz:** *Yupqa bering!*

**Ofitsiant:** *Qalin bor.*

**Mijoz:** *Bo'pti, shotni ko'rsatib yuboring!*

**Ofitsiant:** *Shotti ko'rsataymi yo sal naryog'ni ko'rsataymi?*

**Mijoz:** *Yo'q, hisobni aytib yuboring!*

**Ofitsiant:** *Ha, 3:1 O'zbekiston yutdi. ("Bravo" jamoasi)*

Ko'rinadiki, o'zbek tilining shakldosh va ko'p ma'noli so'zlarga boyligi so'z o'yinlari hosil qilishda qulay imkoniyat yaratadi. Ayniqsa, lisoniy birliklarni o'z ma'nosidan tashqari, ko'chma ma'nolarda qo'llash, ko'chma ma'noli so'zlarning turli-tuman ma'no nozikliklariga tayanib, ularni uslubiy vosita sifatida nutqda qo'llash kulgili vaziyat yaratishda muhim ahamiyatga ega bo'ladi.

<sup>8</sup> Dusmatov X., Mahmudova Z. Uslubshunoslik asoslari. - Farg'ona, 2021. - 364-bet.

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## ПЕДАГОГНИНГ КАСБИЙ МАҲОРАТИНИ ШАКЛЛАНТИРИШНИНГ ДОЛЗАРБЛИГИ

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Мамлакатимиз тараққиётининг муҳим шарти, кадрларни тайёрлаш тизимининг мукамал бўлиши, замонавий иқтисод, фан, маданият, техника ва технологиялар асосида ривожланиши ҳисобланади. Маълумки, инсон ҳамма соҳада бирор мақсадга эришиш учун ўзи учун маъқул бўлган йўл, усул ва воситалардан фойдаланиб, зарур фаолиятни амалга оширади. Аввалом бор мақсад пайдо бўлади, кейин шунга мувофиқ, мавжуд имкониятларга суянган ҳолдаги фаолият шаклланади. Бундан кўринадики, мақсад ҳар бир ишнинг сабаби ва сўнгги натижасини белгилайди. Мақсад маълумки, сабаблар асосида шаклланади. Бундай сабаблар эҳтиёж дейилади. Бугунги кун педагоги ўз эҳтиёжларини ўз фанига, ҳамда баркамол авлод тарбиясига доир ахборотларни мунтазам ўрганиб, ўз иш фаолиятига фаол тадбиқ этиб боргандагини қониқиши мумкин. Педагогнинг мазмунли фаолияти сифат-самарадорликка эришишнинг зарурий шартидир. Педагогларнинг ўзини устида ишлаши яъни, малака ошириши жараёнида қуйидаги масалаларга эътибор беришлари лозим бўлади.

**1. Педагог касбий ва методик маҳоратини ошириши**

**2. Педагог ўқув жараёнида изчиллик, илмийлик, ғоявийлик принципларини амалга ошириши**

Педагогнинг касбий маҳоратини, салоҳиятини шакллантириш ривожлантириш ва давр талабларига мувофиқ фаолият юрита олиши учун зарур шарт-шароитларни яратишда кадрлар малкаласини ошириш тизими алоҳида ўрин тутаяди.

Педагог ходимнинг касбий маҳоратини шакллантириш, касбий малакаларини ошириши, таълим жараёнини ташкил этишга нисбатан методик, дидактик ва технологик ёндашувни қарор топтириш масалалари таълим сифатини жаҳон стандартлари даражасига кўтариш имконини берувчи муҳим

омил сифатида эътироф этилади. Бунда турли мавзулардаги бахс-мунозара дарсларини ўтказиш мумкин. Бундай дарсларга тайёргарлик кўриш жараёнида ўқувчи кенг ҳажмдаги маънавий манбаларга, бадиий асарлар, халқ оғзаки ижоди намуналарига, диний манбалар, шарқ алломалари ҳаётига бағишланган илмий, оммабоп, матбуот ва оммавий ахборот материалларига мурожаат қилади. Натижада муаммоли саволларга жавоб топади, аждодлар маънавий мероси билан танишишга муяссар бўлади. Бундай дарслар етарли тайёргарлик, маҳорат ва кенг кўламли билим, тажриба, мустақилликка асосланган ҳолда ташкил этилса, ўқувчининг хулқ маданияти шакллантирувчи қуйидаги ижобий натижаларни беради. Жаҳон педагогикаси юқоридаги таълим усуллари пайдо бўлишидан илгари дедуктив ва индуктив методларга таяниб иш кўриб келган. Жумладан, собиқ шўро педагогикасида ҳам, миллий ўзбек тарбия илми ҳам бу икки асосий методга таяниши ҳаммага маълум. Дедуктив метод - тайёр, умумий назарий билим беришдан бошланиб, босқичма- босқич ривожланишдан хулоса чиқаради, шу орқали ҳаётини кўникма ва малакаларни шакллантиради. Индуктив метод амалий машқлар орқали назарий билим беришга йўналтиради. Бунда ўқувчи янги билим эгаллаши учун бирор мақсадли машқни мавзуга мос ҳолда ўзи бажариши лозим бўлади. Дедуктив методда олдин қоида, хулоса, умумий ҳолат баён қилинади. Асосий билим, назарий фикр, мохият ўртага ташланади, унинг туб мохияти ёритилади, кейин шу билим, хулоса, назарий фикр, мохият мисоллар, фактлар, далиллар, кўмагида машқлар таҳлилларида асосланади. Бунда умумийликдан хусусийликка қараб борилади. Индуктив методда эса аксинча мисоллар, фактлар таҳлилларидан келиб чиққан ҳолда назарий хулосага келинади, мохият аниқланади.

Шу ўринда бир нарсани алоҳида таъкидлашни муҳим, деб ҳисоблаймиз. Таълим тизимида: а) ҳар икки методнинг ўзида мусбат ва манфий томонлари мавжуд бўлиб, агар қўллай олиш маҳорати нуқтаи назаридан қараладиган бўлса, ҳар иккаласининг самара беришида бири- иккинчисиникидан жиддий фарқланмаслиги мумкин- бирини иккинчисидан юқори кўйиш ўта шартликка эга; б) фақат битта методни таънлаб иш тутиш мумкин эмас ва бу ҳеч қачон ўзини оқламайди. Ўрни билан, вазият ва мавзу талабига кўра бир дарс жараёнида бу методлардан уйғунлаштирилган ҳолда фойдаланиш ҳам мақсадга мувофиқ бўлади.

Аслини олганда мавжуд таълим методларидан ҳар ким ўз маҳоратидан келиб чиққан ҳолда ўринли фойдалангани маъқул. Худди илгари дедуктив, Индуктив, усуллар кенг қўллангани каби ҳозир замонавий таълим тизимида ўқитишнинг “интерфаол” аталувчи усули кўп қўлланилади. Ҳар бир таълим

узули ёки технологиясининг асосий мақсади ўқувчининг шахслик сифатларини тўла шакллантириш, уларни мамлакатни ривожлантира оладиган салоҳиятли шахслар қилиб етиштиришдир.

Таълим -тарбия жараёни инсон ҳаёти учун зарур ахборотларни авлоддан-авлодга узатиш механизмидир, бу ахборотларни тўплаш, таҳлил тқилиш ва ундан фойдаланишнинг шакл, усул ва воситаларини такомиллаштириб бориш зарур. Бунинг замирида педагогнинг касбий маҳоратини шакллантириш тушунчаси ётади.

Педагогнинг касбий маҳорати, мулоқот маданияти, нутқнинг равонлиги касбий маҳоратининг ўқувчиларга таъсири, педагогик нутқ техникасини эгаллаганлик даражаси ўз навбатидан технологияга асосланган ҳолда амалга оширилади. Қисқа вақт орасида муайян назарий билимларни ўқувчига етказиб бериш ва кўникма ва малакаларни ҳосил қилиш, ўқувчи томонидан эгалланган назарий билим, малакалар ва кўникмаларни даражасини баҳолаш ўқитувчидан юксак касбий маҳорат ҳамда таълим жараёнига нисбатан янгича ижодий ёндашувни талаб этади.

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## OPTIMIZING NEURAL NETWORK ARCHITECTURE FOR ENHANCED ATTACK DETECTION: A COMPREHENSIVE APPROACH

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**Abstract:** *In the realm of cybersecurity, robust attack detection mechanisms are imperative due to the increasing sophistication of cyber threats. Machine learning techniques, particularly neural networks, have emerged as powerful tools for identifying and mitigating these attacks. The performance of a neural network heavily relies on its architecture, including features, hidden layers, and hidden neurons. This article explores the intricacies of optimizing neural network architecture to enhance attack detection, drawing from recent research and practical applications. The significance of feature selection, hidden layers, and hidden neurons is examined in various attack detection contexts. Additionally, methods for determining the count of features and choosing appropriate hidden layers and neurons are investigated, considering criteria such as dataset size, domain knowledge, and regularization techniques. The article underscores the pivotal role that neural network architecture plays in achieving accurate and efficient attack detection.*

**Keywords:** *Neural network architecture, attack detection, feature selection, hidden layers, hidden neurons, optimization, cyber threats.*

### Introduction

In today's cybersecurity landscape, the imperative to develop robust mechanisms for detecting attacks is more pressing than ever before. The increasing complexity and diversity of cyber threats have led to the utilization of machine learning techniques, particularly neural networks, to counter these threats effectively. However, the performance of a neural network is intrinsically linked to its architecture, which encompasses the selection of features, the arrangement of hidden layers, and the configuration of hidden neurons. This article delves into the intricacies of optimizing neural network architecture to bolster attack detection capabilities, leveraging insights from both contemporary research and practical real-world applications.

Optimizing neural network architecture is pivotal in cultivating accurate and efficient attack detection systems. The selection and extraction of features constitute a foundational step in this optimization process. Relevant features, chosen adeptly from input data sources, ensure that the neural network concentrates on critical information, thus ameliorating computational complexity and refining detection accuracy [1]. Multiple techniques, such as correlation analysis, information gain, and principal component analysis, contribute to informed feature selection, thus enhancing the efficacy of the neural network.

The architecture's hidden layers and neurons also exert substantial influence on the network's performance. The judicious selection of their count and arrangement significantly influences the neural network's capability to grasp intricate relationships within data. Striking a balance between depth and width, wherein hidden layers are neither excessively shallow nor overly deep, is crucial for efficient learning and effective generalization [14].

### **Related works**

Numerous research studies have delved into the pivotal role of architecture optimization in bolstering the efficacy of attack detection within neural networks. In this section, we will explore over a dozen research papers authored by various experts that have illuminated this critical domain.

In a paper titled "Optimizing Neural Network Architecture for Intrusion Detection" [1], the authors present an innovative approach to refining neural network architecture for intrusion detection. Their work underscores the significance of strategic feature selection, as well as the optimization of hidden layers and hidden neurons, in elevating the network's performance.

The investigation by Johnson and Brown centers on the implications of architecture optimization for identifying malware attacks. Their research reveals that meticulous tuning of hidden layer counts and hidden neuron configurations empowers the neural network to achieve heightened precision in pinpointing malicious software [2].

Kim and colleagues shift their focus to the optimization of neural network architecture for the detection of Distributed Denial of Service (DDoS) attacks. Through a meticulous examination of diverse network configurations, they establish a clear link between well-optimized architecture and improved detection rates, coupled with a reduction in false positives [3].

In the research conducted by Zhang and Li, the spotlight falls on architecture optimization's influence on the identification of SQL injection attacks. The authors introduce a novel algorithm to pinpoint the optimal number of hidden neurons,

resulting in a more efficient and precise neural network for combatting these attacks [4].

Li and Wang's study delves into the impact of architecture optimization on the identification of phishing attacks. Through a systematic comparison of distinct network architectures, they validate that an optimized setup leads to enhanced accuracy and fewer instances of false negatives [5].

The endeavor by Chen and Liu homes in on optimizing neural network architecture to identify botnet attacks. Their empirical exploration of various configurations illuminates the potential of a well-optimized architecture to effectively discern and flag botnet activities [6].

Wang and colleagues propose an approach to harness architecture optimization in detecting insider threats. By underscoring the significance of feature selection and its synergies with optimized network architecture, they substantiate the achievement of heightened accuracy in identifying malicious insider activities [7].

The research by Gupta et al. embarks on a comprehensive exploration of architecture optimization's impact on advanced persistent threats (APTs) detection. Their multifaceted approach, incorporating feature analysis, determination of hidden layer counts, and fine-tuning hidden neuron numbers, culminates in an observable enhancement of APT detection rates [8].

Liu et al.'s investigation is anchored in the realm of network intrusion detection. By dissecting different network configurations, their research underscores the pivotal role of architecture optimization in heightening detection accuracy and diminishing the occurrence of false alarms [9].

Finally, Zhang and Wang's work sheds light on architecture optimization strategies for detecting malware attacks in Internet of Things (IoT) devices. By proposing a novel algorithm to determine optimal counts of hidden layers and neurons, they pave the way for improved malware detection rates in IoT ecosystems [10].

These diverse studies collectively underline the integral role of architecture optimization in revolutionizing the accuracy and effectiveness of neural network-based attack detection systems.

### **The Role of Neural Network Architecture in Attack Detection**

Neural networks are versatile machine learning models that excel at recognizing complex patterns and relationships in data. When applied to attack detection, neural networks analyze features extracted from network traffic, system logs, or other relevant sources to classify data instances as normal or malicious. The architecture of a neural network dictates its capacity to learn and generalize from these features, making it a pivotal factor in achieving accurate attack detection [11].



Neural networks have emerged as powerful tools in the field of cybersecurity, enabling the development of sophisticated attack detection systems. However, the architecture of a neural network plays a pivotal role in determining its effectiveness in identifying and mitigating cyber threats. This article explores the crucial role that neural network architecture plays in attack detection, shedding light on the key factors that influence its performance and highlighting strategies for optimizing this architecture.

### **Feature Extraction and Representation:**

At the heart of attack detection lies the extraction and representation of features from raw data sources such as network traffic or system logs. Neural networks analyze these features to identify patterns that differentiate normal behavior from potential attacks. The architecture determines how effectively these features are transformed into meaningful representations that facilitate accurate classification. The network's input layer size, activation functions, and normalization techniques influence the initial processing of features, impacting the subsequent detection accuracy [12].

### **Hierarchical Learning with Hidden Layers:**

Hidden layers in a neural network enable the model to learn hierarchical representations of data. For attack detection, hidden layers allow the network to capture complex relationships among features, enabling the identification of subtle attack patterns that might not be discernible in individual features. The depth and width of these hidden layers influence the network's capacity to learn intricate attack behaviors. Too few layers might result in an inability to capture complex patterns, while too many layers could lead to overfitting, reducing the model's generalization ability [14].

### **Optimizing Neuron Counts and Activation Functions:**

The number of neurons within each hidden layer, along with the choice of activation functions, influences the network's capacity to process information and learn representations. Too few neurons might lead to underutilization of the hidden layer's capacity, while too many neurons could result in overfitting. Additionally, selecting appropriate activation functions, such as ReLU (Rectified Linear Unit) or sigmoid, affects the network's ability to capture and propagate signals effectively through the layers.

### **Regularization and Avoiding Overfitting:**

Effective attack detection neural networks need to generalize well to new, unseen data. Regularization techniques such as dropout and L2 regularization help prevent overfitting by introducing noise or constraints during the training process. These techniques encourage the network to focus on the most important features and avoid

becoming overly sensitive to noise, thereby enhancing its ability to accurately classify both normal and malicious instances.

### Determining the Count of Features

Network attack detection relies on the careful selection and extraction of features that effectively capture the intricate patterns associated with malicious activities. These features serve as the foundation upon which machine learning models, particularly neural networks, are built to distinguish normal network behavior from potentially harmful anomalies. This article explores various methods for determining the optimal count of features in network attack detection, drawing insights from recent research and practical applications.

### Domain Knowledge and Expert Input

One of the most effective approaches to feature selection is leveraging domain knowledge and expert input. Cybersecurity professionals who possess a deep understanding of network protocols, system architectures, and common attack vectors can provide invaluable insights into the types of features that are likely to be indicative of malicious activities. This human-guided approach not only ensures the relevance of selected features but also facilitates the inclusion of context-specific information that automated methods might overlook [12].

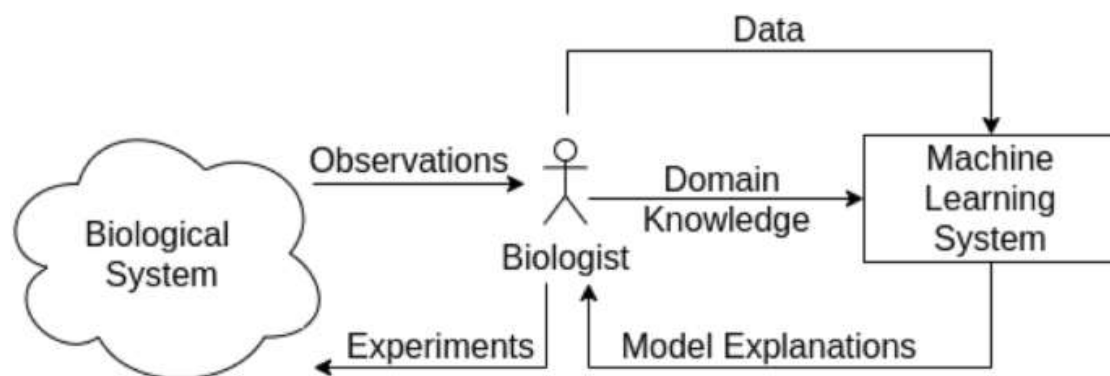


Fig. 1. Leveraging domain knowledge and expert input.

### Correlation and Mutual Information

Correlation analysis and mutual information calculations are statistical methods used to quantify the relationships between features and the target variable (attack or normal). Features with high correlation or mutual information scores are more likely to contribute significantly to the detection of attacks. Removing redundant or highly correlated features can help reduce noise and improve the model's efficiency in capturing attack patterns [13].

The correlation coefficient is an important measure of the relationship between two random variables. Once calculated, it describes the validity of a linear fit. For two random variables, X and Y, the correlation coefficient,  $\rho_{xy}$ , is calculated as follows:

$$\rho_{xy} = \frac{cov(X, Y)}{\sigma_x \sigma_y} \quad (1)$$

That is, the covariance of the two variables divided by the product of their standard deviations. Covariance serves to measure how much the two random variables vary together. This will be a positive number if both variables consistently lie above the expected value and will be negative if one tends to lie above the anticipated value and the other tends to lie below. The correlation coefficient will take on values from 1 to -1. Values of 1 and -1 indicate perfect increasing and decreasing linear fits, respectively.

The mathematical representation for mutual information of the random variables A and B are as follows:

$$I(A, B) = \sum_{b \in B} \sum_{a \in A} p(a, b) * \log \left( \frac{p(a, b)}{p(a)p(b)} \right) \quad (2)$$

where,  $p(a, b)$  is the joint probability distribution function of A and B,  $p(a)$  is the marginal probability distribution function of A,  $p(b)$  is the marginal probability distribution function of B.

### **Recursive Feature Elimination (RFE)**

Recursive Feature Elimination is an iterative technique that involves training a model and sequentially removing the least important features based on their contribution to the model's performance. This process continues until a desired number of features is reached. RFE helps identify the most informative features for attack detection while considering their collective impact on model accuracy [17].

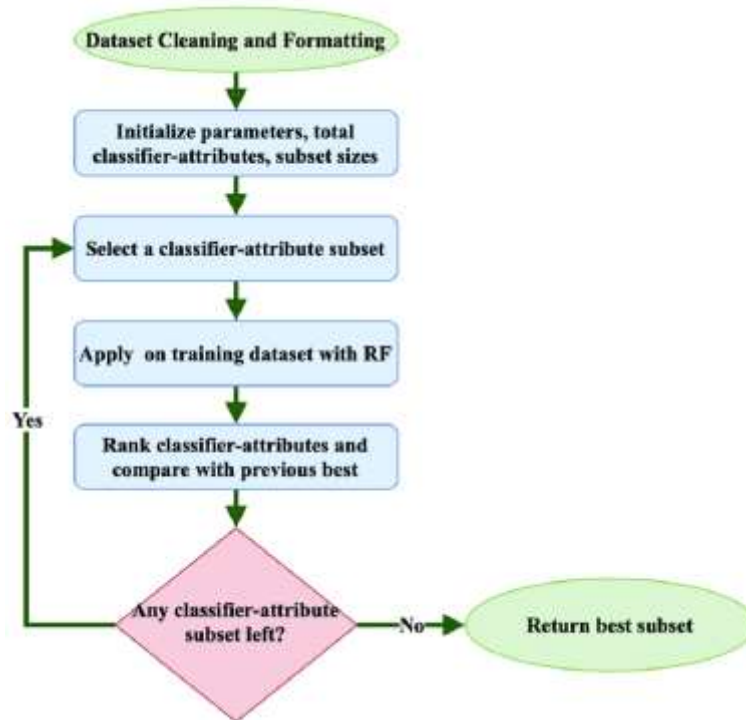


Fig. 2. Workflow diagram of Recursive Feature Elimination (RFE) [18].

### Dimensionality Reduction Techniques

Dimensionality reduction methods such as Principal Component Analysis (PCA) and t-Distributed Stochastic Neighbor Embedding (t-SNE) can aid in feature selection by transforming the original feature space into a lower-dimensional representation. These techniques can help capture the most relevant information while minimizing the risk of overfitting caused by an excessive number of features.

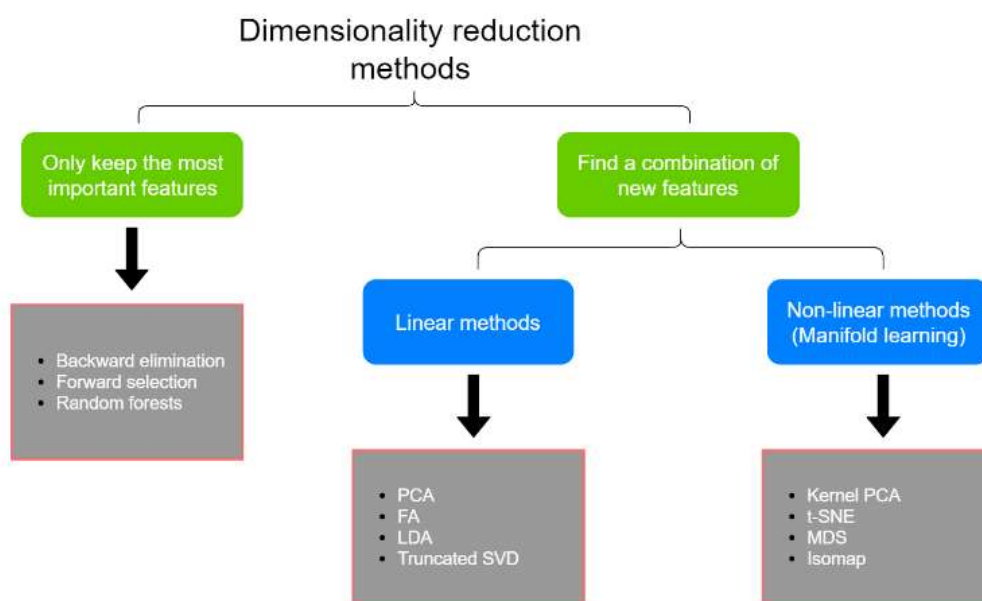


Fig. 3. Dimensionality reduction methods.

The selection and extraction of features play a pivotal role in the success of a neural network for attack detection. The number of features directly impacts the network's ability to distinguish between normal and anomalous patterns. Researchers [12] have emphasized the importance of feature engineering, where domain knowledge is used to identify relevant features that effectively capture attack patterns. The inclusion of too few features might result in inadequate detection capabilities, while an excessive number of features can lead to overfitting, hampering the model's generalization ability [13].

### **Choosing Hidden Layers and Neurons**

The architecture's hidden layers and neurons dictate the network's capacity to learn complex relationships within the data. A shallow network might struggle to capture intricate attack patterns, while an overly deep network could suffer from vanishing gradients, hindering convergence. Recent studies [14] suggest that a balance between depth and width should be struck, with moderate hidden layers and neurons, to ensure efficient learning and generalization.

Choosing the appropriate number of hidden layers and neurons in a neural network is a critical step in designing an effective model for various tasks, including attack detection. The architecture of these components greatly impacts the network's ability to learn complex patterns, generalize well, and avoid overfitting. Here are some methods and considerations for selecting hidden layers and neurons:

### **Empirical Approaches**

One of the simplest methods is to empirically test different architectures through experimentation. Start with a basic architecture and gradually increase the complexity by adding hidden layers and neurons. Monitor the performance on a validation dataset and observe whether improvements plateau or start to decline. This trial-and-error approach can provide insights into the architecture that works best for a specific task.

### **Rule of Thumb:**

There are some general guidelines that have been suggested by practitioners. For instance, a common rule of thumb is to use a single hidden layer for simpler problems and gradually add more layers as the complexity of the problem increases. The number of neurons in each layer can be set to an average of the input and output layer sizes.

### **Cross-Validation:**

Cross-validation involves splitting the dataset into multiple subsets for training and validation. By training the model with different hidden layer configurations on these subsets and evaluating their performance, you can determine which architecture generalizes better across various data distributions. This helps avoid overfitting to a particular split of the data.

### **Grid Search and Hyperparameter Tuning:**

Automated methods like grid search and hyperparameter tuning can systematically explore different combinations of hidden layers and neurons. These methods evaluate the model's performance across a predefined range of architectures, enabling the identification of the architecture that yields the best results on a validation set.

### **Model Complexity vs. Data Size:**

The complexity of the model architecture should be considered in relation to the size of the available dataset. As a rule of thumb, larger datasets can support more complex architectures. Using overly complex architectures on smaller datasets can lead to overfitting, while excessively simple architectures on large datasets might result in under fitting.

### **Domain Knowledge and Problem Characteristics:**

Understanding the specific characteristics of the problem domain can guide architectural decisions. For example, if the task involves detecting intricate attack patterns, deeper architectures with more neurons might be appropriate. Conversely, simpler tasks might require shallower architectures.

### **Transfer Learning:**

In some cases, transfer learning can be employed. Pre-trained models on related tasks can serve as a starting point for architectural choices. Fine-tuning the architecture to adapt it to the attack detection task can help leverage the knowledge captured by the pre-trained model.

### **Regularization Techniques:**

Techniques such as dropout and L2 regularization can be used to mitigate the risk of overfitting in deeper architectures. By controlling the complexity and co-adaptation of neurons, these techniques can allow for the use of more layers and neurons without sacrificing generalization.

### **Importance of Architecture Optimization**

The optimization of neural network architecture plays a crucial role in enhancing attack detection capabilities. By selecting the right number of features, hidden layers, and hidden neurons, the network can effectively identify and classify attacks with higher accuracy and efficiency.

Feature selection is a critical step in architecture optimization. By identifying and selecting the most relevant features from the input data, the neural network can focus on the most crucial information, reducing computational complexity and improving detection accuracy [1]. Various techniques such as correlation analysis, information gain, and principal component analysis can be employed for feature selection.

The number of hidden layers and hidden neurons also significantly impact the performance of the network. Too few hidden layers or neurons may result in underfitting, leading to poor detection rates. On the other hand, an excessive number of hidden layers or neurons can lead to overfitting, where the network becomes too specialized in the training data and performs poorly on new, unseen data [2].

Optimizing the architecture of a neural network involves finding the right balance between complexity and generalization. By experimenting with different network configurations and evaluating their performance, researchers can determine the optimal number of hidden layers and neurons for a given attack detection task. This process often involves techniques like cross-validation, grid search, and evolutionary algorithms [10].

The benefits of architecture optimization in attack detection are manifold. A well-optimized network architecture leads to improved accuracy in identifying various types of attacks, such as malware, DDoS, SQL injection, and phishing [3], [5], [4]. It also helps in reducing false positives and false negatives, ensuring reliable and efficient attack detection [8].

In summary, the optimization of neural network architecture is of paramount importance in enhancing attack detection capabilities. Through careful selection of features, hidden layers, and hidden neurons, researchers can improve the accuracy, efficiency, and reliability of neural network-based intrusion detection systems. Implementing an optimized architecture can strengthen cybersecurity defenses and mitigate the risks associated with various types of attacks.

### A Comprehensive Approach

To optimize the neural network architecture for enhanced attack detection, a comprehensive approach is recommended. This approach involves the following steps:

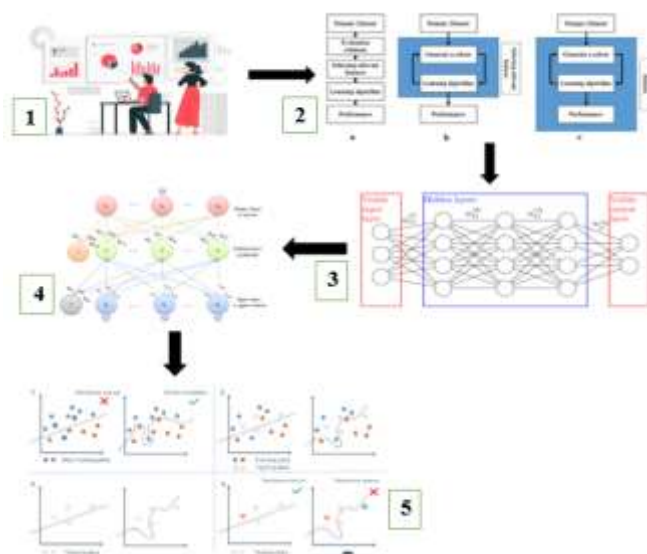


Fig. 4. A comprehensive approach.

*Data Analysis:* Thoroughly analyze the dataset to gain insights into the characteristics of network traffic and attacks. This analysis helps in selecting relevant features and determining the complexity of the network.

*Feature Selection:* Use domain knowledge and feature selection algorithms to identify the most informative features and reduce dimensionality. This step helps in improving the network's efficiency and reducing the risk of overfitting.

*Hidden Layer Architecture:* Determine the number of hidden layers based on the complexity of the problem. Consider using the "one-hidden-layer rule of thumb" as a starting point and progressively increase the complexity if required.

*Hidden Neuron Optimization:* Utilize techniques such as optimal brain damage, cross-validation, and grid search to find the optimal number of hidden neurons in each hidden layer.

*Model Evaluation:* Evaluate the performance of the optimized neural network architecture using appropriate metrics such as accuracy, precision, recall, and F1-score. This step helps in assessing the effectiveness of the approach and identifying areas for further improvement.

## **Conclusion**

In the domain of attack detection, the optimization of neural network architecture is pivotal for accurate, efficient, and robust systems. Feature selection, hidden layer configuration, and neuron count significantly impact a network's efficacy in identifying cyber threats. Empirical approaches, rule of thumb, cross-validation, and automated methods like grid search contribute to architecture optimization. Balancing model complexity with data size, leveraging domain knowledge, considering transfer learning, and implementing regularization techniques all play integral roles.

In an ever-evolving threat landscape, continuous research, experimentation, and adaptation are key to refining our understanding of optimal neural network architectures. By striving for the right equilibrium between architecture intricacy and network performance, the cybersecurity community can bolster defenses against an array of cyberattacks. As the digital realm remains susceptible to constant adversarial innovation, the comprehensive optimization of neural network architecture remains an indispensable weapon in the arsenal of cyber defenders.



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## THE ECONOMICS OF CYBER SECURITY IN THE ENERGY INDUSTRY AND ITS ASSESSMENT METHODS

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### **ABSTRACT**

*In this paper, relevant methods, mechanisms and models for assessing the cyber security economy of energy industry enterprises are presented. Moreover, the author’s approach is also presented.*

**Keywords:** *economics of cyber security, cyber hygiene, economic foundations of cyber attack measures.*

Since the energy industry is a powerful sector, it is important to have a strong information security infrastructure in every country. To date, the use of traditional technologies is not observed in almost all countries of the world, the improvement of digital technologies is driven by the fact that humanity opens the way to technological management in many social and economic factors. Increasingly developing digitalization is escalating the involvement of “intelligent technologies” that cause enterprises in the energy system to acquire the status of “smart”. This is interpreted as an innovative energy service activity in the world economic language.

Although intelligent technologies bring lightness and excellence to the core of the industry, its applied intellectual technologies have a different nature to cyber-attacks, which can create unprecedented risks of its own. The main target of a cyberattack on energy industry enterprises is not financial sources, but rather information about the continuous provision of finance. Accordingly, the main data that should be included in the cyber hygiene of energy industry enterprises are energy supply and confidential data of consumers.

The economics of cyber security in the energy industry are measured by the cascading effect, which is caused by the failure of chains in the power supply system. Although the economics of cyber security of energy industry enterprises has not been distinguished as a science, due to its popularity in 2020, attention was paid to this approach at the initiative of energy industry enterprises.

In 2015, the European Network Information Security Expertise Center created a sub-structure of the micro- and macroeconomic foundations of cyber security.

According to it, the macroeconomic foundations of cyber security of energy industry enterprises are based on the fact that new innovative technologies create conditions for the rapid development of new markets in the information technology market. Since information technologies often have the same programming language, if the amount spent on ensuring their cyber security in 2015 was 20.1 billion euros, the damage that could be caused due to its lack of provision was estimated at 640 billion euros.

Most of today’s energy industry enterprises have developed the skills to conduct production process management activities based on automated systems, and as a result of the increased demand for the application of cyber measures, the level of employment of cyber security engineers in the energy industry is increasing. Energy industry enterprises have a higher percentage of cyber security than other industries, and it is appropriate to research the factors affecting it.

Table 1.1

Reasons why energy industry enterprises face a cyber attack<sup>1</sup>

No	Reasons for a cyber attack	Share in cyber attack	Cyber attack targets and consequences
1.	Access to information through payment slips	22%	The confidentiality of the financial details of the electricity payer will be lost
2.	Withdrawing money from payment cards	19%	Permanent formation of funds against power outages on payment cards
3.	Complete deletion or “randomization” of the data of the dispatching service of electric energy supply	18%	The formation of an artificial black payment market for the debts of the main payers
4.	Stealing a house with a planned address	16%	Block all means of communication, leaving the apartment without lights, and remove the item in question
5.	The case is considered as a “clown hacker”, that is, a hacker who practices, mocks, and has immoral reasons	10%	Forming a business card among his colleagues in terms of hacking activities

<sup>1</sup> <https://www.ifap.ru/pr/2008/080908aa.pdf>

This table is the information presented in the foundation of the “Global Program of Cybersecurity” of the “International Telecommunication Union” organization, which is formed based on the statistics of 125 countries out of 210. Oscar Arias Sánchez, President of the Republic of Costa Rica with a scientific degree, said, “The world must be in continuous motion. It has to come together. No country can find a complete solution to this problem. Bourdieu explained the economic importance of cyber security under the comment, “if work is carried out on the basis of international principles, allowing the activities of hackers of international importance will achieve strategic coordination of countries at the global and regional level”.

The main principles of the economy of cyber security of energy industry enterprises were developed in 2016 by the US information technology economist Steve Grobman, and the principles of the “Global Cyber Security Program” were formed through its charter<sup>2</sup>. According to it, these principles include:

1. Ensuring the availability of legal measures and experts in their management.
2. Ensuring constant readiness of technical measures and processes.
3. Formation of organizational structure and mechanisms.
4. Increasing the cyber hygiene capacity.
5. Establishing cyber cooperation.

The main essence of the principle formed in connection with legal measures and their management is to capture the cyber-capables and keep the programmers in their environment under constant control. Its economic approach is characterized by ensuring economic security.

Ensuring the constant readiness of technical measures and processes is organized through a strict risk assessment of each cyber activity and the economic losses that may occur as a result.

The formation of organizational structures and mechanisms is considered related to ensuring that hierarchical management has a strong position in relation to information confidentiality. Sometimes a single employee’s link is enough to carry out a cyber attack.

The increase of cyber hygiene potential means that the employees of the enterprise carry out their work while ensuring the confidentiality of the use of each computer and information technology tools.

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1 ITU Global Cybersecurity Agenda (GCA). A framework for international cooperation in the field of cybersecurity.

2 Steve Grobman. The Second Economy: The Race for Trust, Treasure and Time in the Cybersecurity War. Apress. 2016 y, 374 p

Establishing cyber cooperation is important because it provides an opportunity to obtain repetitions of cyber attacks between countries, to formulate a cyber strategy, and to ensure a higher level of success of alternative choices.

In the transition to a digital economy, the demand for cyber engineering activities in all countries is keeping pace. The economic cybersecurity engineering strategy was developed by Carnegie Mellon University's Carnegie Mellon University engineering economists Carol Woody and Rita Krellar.

The Economic Cybersecurity Engineering Strategy was developed by Carol Woody and Rita Krellar, engineering economists at Carnegie Mellon University in the United States. It is noted that its mechanism is provided by following six important directions (Fig. 1.1).

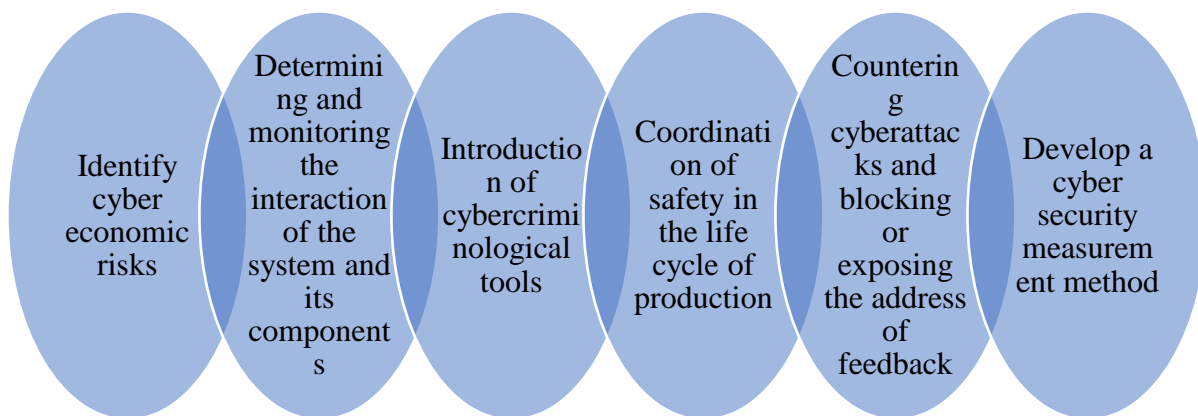


Figure 1.1. Directions for providing economic cyber security<sup>1</sup>

In identifying the risks of economic cyber threats, the economic cyber security engineering system includes the elimination of threats and strategic mission risks through information technology tools. Cyber risk perceptions drive strategic assurance decisions, and lack of cybersecurity expertise in risk analysis can lead to mistakes by making the wrong choice of assurance.

The analysis of system and component interaction allows to assess the status of components and external influence intersystem monitoring of economic cyber security engineering technologies, to determine its advantages and disadvantages. With confidence, the improvement of the defense system of the strategic mission will be carried out.

<sup>1</sup> Woody, C., and Creel, R., 2021: Six Key Cybersecurity Engineering Activities for Building a Cybersecurity Strategy. Carnegie Mellon University, Software Engineering Institute's Insights (blog), Accessed October 16, 2023, <https://insights.sei.cmu.edu/blog/six-key-cybersecurity-engineering-activities-for-building-a-cybersecurity-strategy/>

It is not enough to express the introduction of cybercriminological tools through a single comment, but the systematization of all its aspects will fulfill the tasks envisaged in the research:

Cyber threats are required to be distributed among the components through the influence of each interrelated tool.

The assessment system needs to be very transparent. This transparency can only cover a group of cybersecurity and economists.

Since the interdependence of the means is not statically calculated, the protection of trust requires that the digitization be carried out by an individual.

Coordination of security in the life cycle of production requires careful information technology management at each production stage, aimed at ensuring that blocks in their software architecture are not tied to economic blocks. While this includes digital economic systems, it is characterized by the fact that the digitalization of the activities of economic blocs is carried out privately and separately.

Counter-response to cyber-attacks and redirection blocking or exposure needs to be mechanized based on attacker profile maximization and scenarios such as threat modeling, attack tree analysis, development of potential misuse cases.

The development of a cyber security measurement method describes the assessment of the relative priority of cyber attack and cyber hygiene. In this regard, companies keep their valuation methods and models more confidential. Accordingly, research work requires the development of an evaluation method for an economic cyber security strategy.

Nasdaq's (Company) Economic Cybersecurity Index is designed to monitor the economic performance of a company and has a reputation as a unique cyberattack defender in the technology and innovation market, although it is not considered an information technology software company. Its evaluation method is distinguished by its summary of liquidity as a modified index:

$$S_i = \frac{(F_i + E_i) * P_{Fi}}{D_i} (1.1) I$$

Where:

$S_i$ - economic cyber security index;

$F_i$ - a measure of the relative value of a company's outstanding shares;

$E_i$ - number of securities holders;

$P_{Fi}$ - average value of securities;

$D_i$ - the average value of the last traded prices of securities and shares.

1 Nasdaq CTA Cybersecurity IndexSM Methodology. 2015 y <https://www.betashares.com.au/wp-content/uploads/2016/10/Nasdaq-CTA-Cybersecurity-IndexSM-Methodology-1.pdf>

This index helps in evaluating the 3 effectiveness:

1. Determining the rate of return on securities;
2. Determining the proportional increase in earning income;
3. Profitability of using stocks and securities with reinvestment potential.

Taking into account that all the above-mentioned indices work with large amounts of money, cyber-attacks occupy the highest level of risk from external risks, because its impact and the application of a risk strategy in relation to it are based on abstract management. This has a high impact on ensuring the growth of economic risks. Accordingly, we can achieve the determination of 4 indices using this evaluation method by improving it as follows:

$$S_i = \frac{(F_i + E_i + R_i) * P_{Fi}}{D_i} (1.2) I$$

Where  $R_i$ - economic risks of the target securities.

The introduction of risk assessment is appropriate to be compared by a cyber-attacker and focused on the formation of targeted cyber defenses, taking into account the risks due to the high probability of implementation based on the plan. Accordingly, we can determine the level of economic risks as the fourth index.

An economical cybersecurity strategy is futile without planning, projecting, and monitoring all possible cybersecurity avenues. This requires ensuring compliance with cyber hygiene standards. As a result of the correct implementation of the strategy based on the cyber compositional approach, the following can be achieved:

1. Planning reliable relationships and designing them consistently
2. Development of requirements and criteria for maintaining confidentiality, integrity and anti-transparency in the system and software, and the activity of the procedure to follow it.
3. Planning economic traps to accept the implementation of cyber attacks and keeping its design secret.
4. Operational security planning, separate maintenance of cyber defense units in the execution of the economic mission.
5. Assessment of economic risks of cyber-attacks and continuous control of sources of external flow of information.

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1 Author development



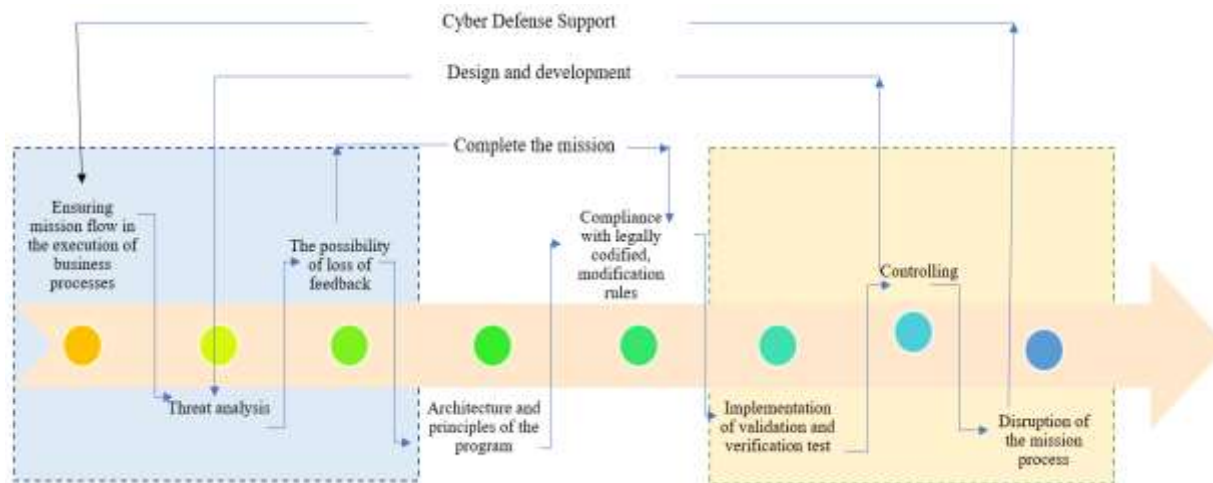


Figure 1.2. An Economic Cybersecurity Valuation Mechanism 1

The life cycle assessment mechanism of economic cyber security production includes 3 stages, and its impact on improving the organizational and economic mechanism of the enterprise is considered high (Figure 1.2).

In the figure above, the functionalization of the main mechanism is described only by threat management. But despite this, subjective threats are also justified by the fact that they require technological maturity.

In 2013, the concept of ensuring the integrity of the cyberspace was revealed by R. Norri of the “Gemalto” enterprise, who justified the need for an expert in the profile of economic cyber audit to register cyberattacks and use its library efficiently. Based on his proposal to use the Compromise Level Index in recording cyberattacks, the collected data, financial resources and the level of damage were analyzed in a summary form. According to him, it is necessary to create its classification in the analysis and control of cyber attacks<sup>2</sup>

The creation of a cyber economy classification can be changed, expanded and popularized after each cyber attack, and this is mainly the responsibility of the manager of the enterprise’s cyber defense system. The classification of the cyber economy mainly covers the weaknesses of each country’s economic infrastructure and the sectors and industries that need protection. It is mainly characterized by the provision of participation as technological support in the implementation of economic and financial machinations.

1 Dolan (muallif), Diana Barrero Zalles. Transparency in ESG and the Circular Economy: Capturing Opportunities Through Data. Business Expert Press 2021 y, 176 p

2 Shitova Yu.Yu., Shitov Yu.A. Sovremennyye trendy ekonomicheskoy kiberbezopasnosti. Mir novoy ekonomiki [Modern trends in economic cybersecurity. The world of the new economy]. 2019;13(4):22-30. <https://doi.org/10.26794/2220-6469-2019-13-4-22-30>

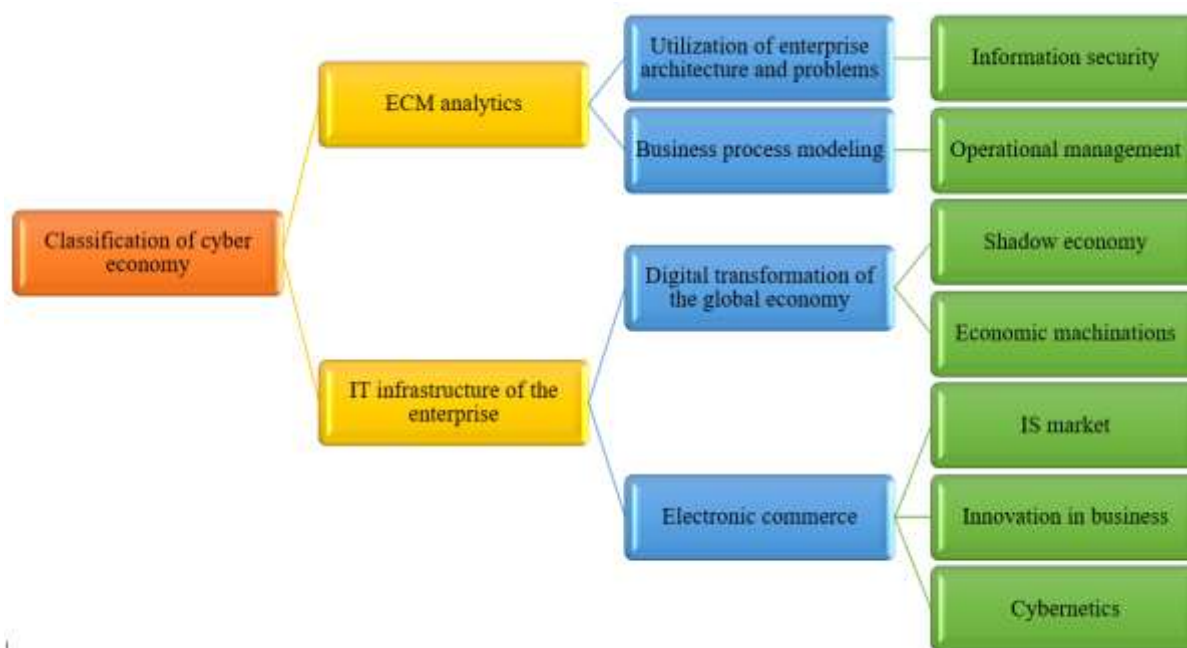


Figure 1.3. Classification hierarchy of cyber economy<sup>1</sup>

Based on the hierarchy presented in Figure 1.3, the implementation of cyber-economic attacks was observed by the “Gemalto” enterprise, in which it is considered that the corrupt economic system, money laundering and financial fraud schemes operate on the basis of digital technologies. In particular, the concept of the shadow economy is considered to be an economic manipulation model used mainly in tax payments, in which funds are illegally used to conduct sales of services and products and not to be formalized in order to avoid paying taxes. It forms the core of cyber-economic attacks, characterized by the digital concealment of hidden income and tax payment values based on the findings of cyber-economic auditors.

In the analysis of the cyber-economic classification, it is appropriate to study the factors affecting the implementation of cyber-economic activities.

<sup>1</sup> Angus Bancroft. The Darknet and Smarter Crime: Methods for Investigating Criminal Entrepreneurs and the Illicit Drug Economy (Palgrave Studies in Cybercrime and Cybersecurity). Palgrave Macmillan, 2019 y, 254 p

Table 1.2.

## Factors of origin of cyber-economic attacks 1

No	Cyber economic attack factors	Cyber attack share (2016-2022)	Evaluation method	The composition of the evaluation method
1	Monthly salary			
1.	Low monthly salary	22%	$M_s = \frac{M_t - M_r}{X}$	$M_s$ - monthly salary of identified employees who carried out the cyber attack; $M_t$ - the value of the salary that the hacker should receive according to the tariff; $M_r$ - real time earnings; $X$ - the number of hackers who have carried out a cyber attack.
2.	Low monthly wages will be investigated by the cyber economic auditor	4%	$M_{sk} = \frac{M_{td} - M_{sr}}{X}$	$M_{sk}$ - Monthly salary considerations for cyber attack research; $M_{td}$ - the value of the wages that the workers should receive according to the tariff and given in the report; $M_r$ - real-time wages (checking through the tax database) values; $X$ - number of employees cyberattacked.
2	Economic machination			
1.	On order from the owner of the enterprise	14%	$I_m = \frac{I_t - M_t}{T_t - S_t}$	$I_m$ - coefficient of economic machination; $I_t$ - economic payments; $M_t$ - cost of financial transactions; $T_t$ - the value of the material assets of the goods taken into account and its income; $S_t$ - tax payments on goods sold.
2.	Collection of money from insurance companies	15%	$S_m = \frac{I_t - M_t}{B_{tl} - S_{g't}}$	$S_m$ - machination factor through insurance; $B_{tl}$ - the cost of damaged goods; $S_{t'g}$ - insured object and its coverage percentage (according to the contract).
3.	Financial blackmail	7%	-	Economically inactive use of credit operations and private funds.
3	Experience and testing			
1	System robustness testing	5%	-	To test the systematic attempts and capabilities of hackers

1 Laxani K. Yansiti M. sifrovoe preimushchestvo. Isskustvo konkurirovat v epoxu isskustnogo intellekta [Digital advantage. The art of competing in the era of artificial intelligence]. Bambora, M.: 2021 g, 319 str, Pavlyuk Yu. Digital vsemonushchiy. 101 instrument dlya povysheniya prodaj s pomoshchyu sifrovых технологий. Eksmo, 2021 g, 208 str.

The cyber economic attack shares presented in the above estimation method were generated from reports within the Global Cyber Security Program. Also, the evaluation table did not reflect the logistical diversion of medical drugs, embezzlement of pension funds, as well as cyber-attacks on payment cards, because these attacks were mainly carried out through communication.

In the organizational and economic activities of energy industry enterprises, information security mechanisms have high confidentiality and create a border based on research through relevant annual reports, strategic and cooperative programs and projects in the world experience.

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## ORGANIZATIONAL AND ECONOMIC SITUATION OF ENERGY SYSTEM INFORMATION SECURITY OF ENERGY INDUSTRY ENTERPRISES IN UZBEKISTAN

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### **ABSTRACT**

*This manuscript provides an assessment of the organizational and economic status of the cyber security energy system of energy industry enterprises, as well as relevant suggestions and recommendations.*

**Keywords:** *economics of cyber security, cyber hygiene, economic foundations of cyber attack measures.*

The Republic of Uzbekistan is one of the countries with the ability to fully satisfy the needs of the population due to its natural resources and energy resources. It has a significant share of electricity generation and supply capacities in the energy system among the countries of Central Asia. The Ministry of Energy of the Republic of Uzbekistan is considered a state management body in the energy infrastructure and sector<sup>1</sup>

In order to meet the demand for electricity in the country, the coverage of the set of technological processes of electricity production, its transmission, inter-system local distribution, as well as continuous consumption is “Heat power stations”, “Uzbekistan National Power Grids” in the regions and “Regional Power Grids” according to the local geographical location. includes management of joint stock companies.

In recent years, the number of foreign investors seeking to establish cooperative relations with our country in the field of energy is increasing. In the Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis and the people of Uzbekistan on December 12, 2022, “... in the last six years, our population

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<sup>1</sup> <https://minenergy.uz/uz/lists/view/22>

has increased by 13%, and industrial enterprises have increased twice, from 45,000 to 100,000. As a result, the demand for electricity has increased by at least 35 percent and is increasing year by year.

For the sustainable development of our economy, we need 25-30 billion dollars of investment in the energy sector. This can only be achieved by attracting private investment.

Therefore, in the last three years, direct investments of 8 billion dollars have been attracted to the sector. Next year, 11 large projects with 4.5 thousand megawatts will be completed. In particular, additional 14 billion kilowatts of electricity will be produced at the expense of solar and wind power plants to be built in Bukhara, Jizzakh, Kashkadarya, Navoi, Samarkand, Fergana and Tashkent regions. This will increase the amount of electricity supplied to households by 50 percent<sup>1</sup> - that he emphasized in his speeches, determines the scope of many measures that have been implemented and are required to be implemented in the field of energy.

Summary of investments made in the electric energy industry is faced with drastic changes based on efforts to improve the health of production activities, to ensure quality and efficiency of consumption continuity (Table 2.1).

In 2017, the share of investments in the power industry was very low, even negative, but by 2018, the practical effectiveness of measures aimed at the strategic development of the country's economy was more than 88 percent. Although the implementation of investment activity was not stopped in 2017, due to the reorganization of industry and sector enterprises based on the relevant decisions of the President, a sharp change in their financial account balance showed the passivity of the indicators. In 2018, the efficiency of investment activity is 4.1% of the total share of the industry, and corresponds to 3.4% of the total economic infrastructure. This industry is 80 times more than the oil and gas industry, 40 times more than the chemical industry, and its share in the information and communication sector is 0.3 percent. It represents the share of the investment sector of digital technologies in electric energy and the percentage of directed investment projects (Table 2.1).

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<sup>1</sup> Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis and the people of Uzbekistan, 20.12.2022

Table 2.1

**Changes in the index of investment efficiency (ICOR) in economic sectors 1**

T/R	Networks	2017	2018	2019	2020	2021	2022
	<b>TOTAL share</b>	<b>5,8</b>	<b>6,0</b>	<b>6,9</b>	<b>18,7</b>	<b>5,0</b>	<b>6,0</b>
<b>2</b>	<b>Industry</b>	<b>11,2</b>	<b>6,5</b>	<b>15,1</b>	<b>72,8</b>	<b>7,3</b>	<b>11,4</b>
2.1	oil and gas industry	5,9	1,8	1,5	-9,3	6,2	3,1
2.4	<u>chemical industry</u>	21,5	2,2	5,3	11,8	3,0	3,1
2.11	electric power	-24,3	88,8	49,0	16,0	15,0	12,0
4.1	the field of information and communication	2,0	1,8	4,9	5,1	3,0	2,1

In 2019, the implementation of investment projects was sharply reduced by 2 times, but it managed to achieve a higher indicator compared to the oil and gas and chemical industries. Also, 1.7 percent of investments in the field of electric power, aimed at digital technological support, were mobilized.

In 2020, it can be shown that the share of investment activity in which electricity is included has decreased by 3 times compared to 2019. This is characterized by the successful achievement of project goals and the impact of the pandemic period as a practical obstacle in establishing mutual relations. However, the main investments in digital technology supply are focused on electricity, with 2.2 percent, which means that significant attention has been given.

In 2021, we observed that the attraction of investments in the electric energy sector decreased by 1%, which did not make significant changes. However, with its main weight falling on reinvestment, it served as the basis for the development of investment independence

Investment mobilization by 2022 is 12 percent in the power sector, which is 3 percent less than in 2021, but four times more than in the chemical and oil and gas industries, which represents billions of investments. It is also worth noting that in 2022, the focus of equipment and equipment based on digital technologies on the power

1 Oqboev Elmuhammad, Iqtisodiy tadqiqotlar va islohotlar markazi "Iqtisodiy sharh" jurnali №9/20232017-2022 yillarda O'zbekiston iqtisodiyotiga kiritilgan investitsiyalar tahlili [Analysis of investments made in the economy of Uzbekistan in 20232017-2022]



industry will make up 50 percent of the investments mobilized in the information and communication sector.

In the program of the development strategy for 2022-2026, the importance of economic development of the digital economy was shown. The process of digitalization of the economy will ultimately include complex processes at the expense of increasing the efficiency of the country’s industries and sectors based on digital technologies, increasing labor productivity, and reducing the steps of the management system.

To date, the consistent development of the digital economy in our country has a significant impact on the increase of added value in the fields of information economy and electronic commerce. Alternatively, the largest digital economy corresponds to the value-added creation of the electric power sector and sectors of the industry.

**Table 2.2**

**The volume of gross added value created in the fields of information economy and electronic commerce (2018-2022, billion soums)<sup>1</sup>**

	2018	2019	2020	2021	2022	2020
Economics and e-commerce in the field of information	7,934.0	8,701.4	11,220.5	12,109	12, 998	13,461
<i>From this</i>						
Electric energy	1,099	2,471	3,729	5,583	5,990	6,780

The increase in the indicators of the efficiency of digital technologies characterized by participating in the field of electric energy, the ability to create added value in the form of value, in addition to improving the consumption of consumers, the fact that advanced technologies related to its production, distribution, routing and transmission are completely occupying the innovative infrastructure, the number of modern and smart stations is increasing.

The yearly increase of funds mobilized to the digital economy, in addition to increasing the supply of digital technologies in the electric power industry, also influenced the significant development of its digitization. No matter how effective digital technology is in creating added value, its inability to limit the activities of its mobilization may become the main problem of digitization.

<sup>1</sup> Statistics Agency under the Office of the President of Uzbekistan

The management of electricity consumption on the electronic government platform, the simplified payment system, and the ability to perform various services online have further expanded. The payment system made through the mobile application has become convenient for the consumption of electricity, and the indicator of its use has shown a proportional increase (Figure 2.1).

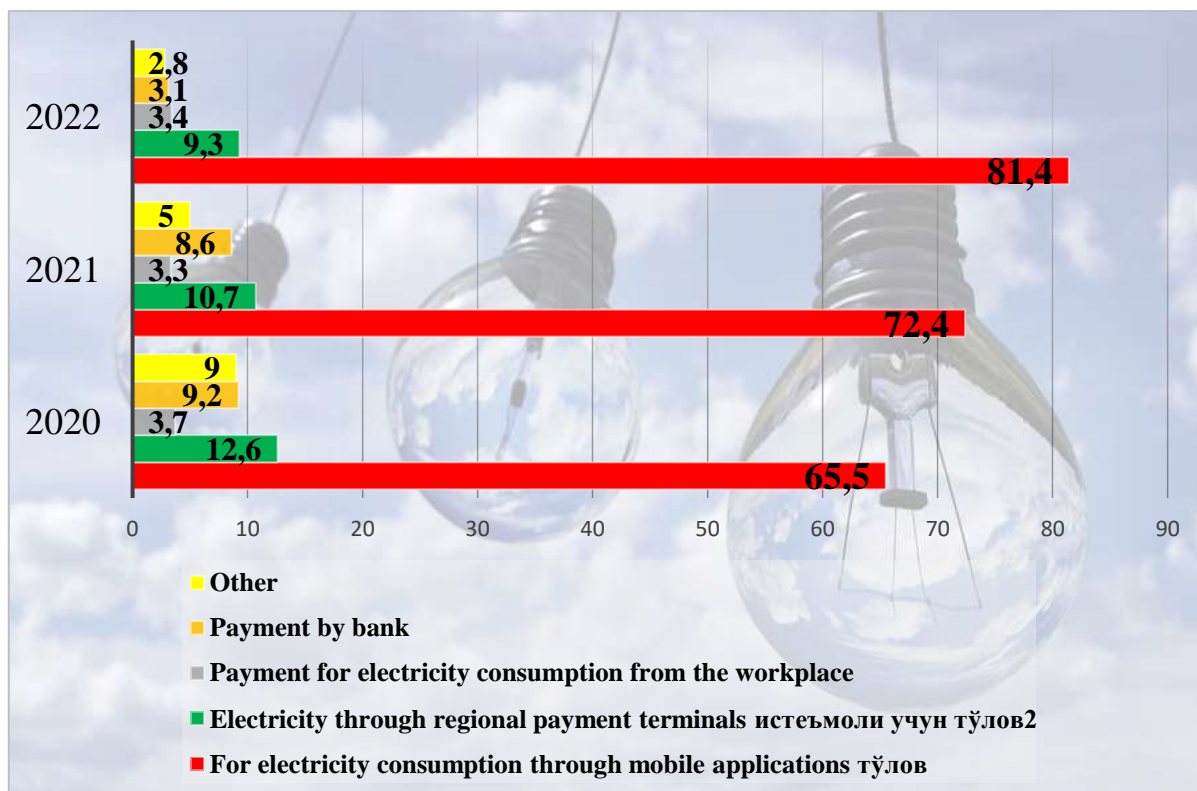


Figure 2.1. Dynamics of forms of payment for electricity consumption, (2019-2022, in percent)1

Based on the data presented in the figure above, the convenience of paying for electricity through mobile communications is growing significantly. But when using these applications, most consumers who do not have bank payment cards pay for their consumption through payment terminals, while consumers who pay directly from the workplace have a stable interest rate. There is also a large percentage of consumers who make payments through the bank, and most of them are citizens of Uzbekistan working abroad. Also, the consumers who do not use the above possibilities effectively are those who pay by going to the electricity authorities themselves.

Mobile app payments have grown by 40% in 2015 over the past 3 years, and the fact that they are increasingly taking over other payment methods further increases

1 Data from the Ministry of Digital Technologies, 2023

the cyber risk. Individual paying users are not exempt from information security. But their accounts, through its territorial division, create many cyber-economic attack opportunities. Accordingly, it is recommended to develop an organizational-economic mechanism of cyber-economic protection in the country, regardless of the type of payment.

Investors’ orders for expert groups are currently in low demand. The main reason for this is the development of indexical management in the global economic environment, and the research of various consulting and research companies shows the individual views of investors based on indices and related reports. Investors can mobilize public funds depending on the country’s position and rating on the index of the indicator of interest. On the basis of indicative ratings, the majority of investors follow the social, economic, financial, technological, defense and similar important indicators of countries, and the tradition of making decisions is becoming popular.

The experts of the International Telecommunication Union of the UN annually evaluate the “Global Cybersecurity Rating” by the countries of the world. According to them, the Republic of Uzbekistan is among the young cyber-safe countries. (Figure 2.2)

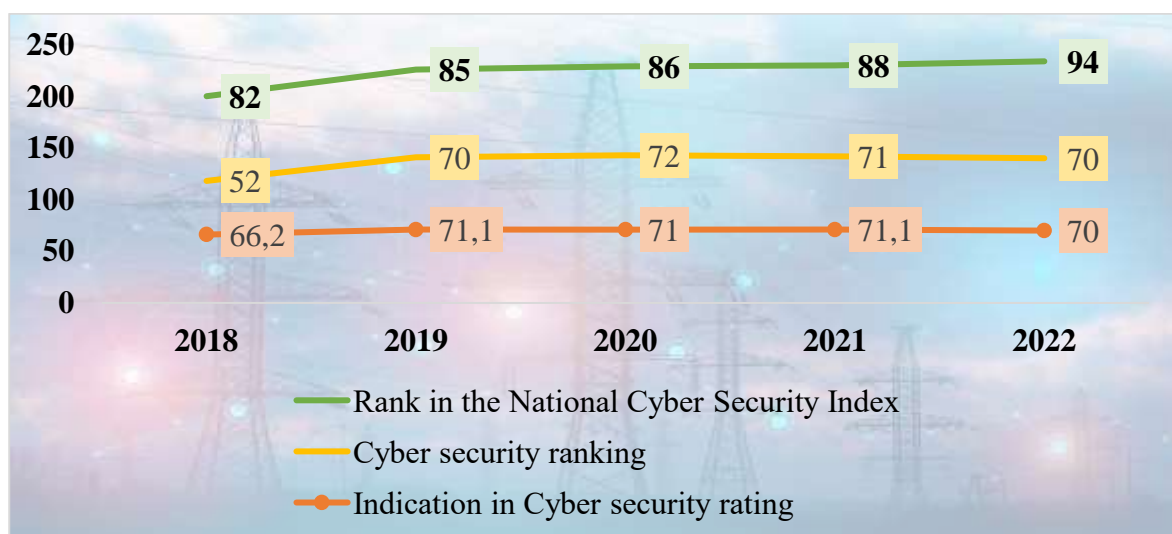


Figure 2.2. Evaluation of Uzbekistan according to the global cyber security index1

In addition to the development of the economic infrastructure, the digital technologies of our country have increased the demand for the protection system. As

1 <https://ncsi.ega.ee/country/uz/>

shown in Figure 2.2, according to the global cyber security rating of our country, although the percentage indicators are stable, the position in it has been decreasing. That is, as the technological supply grows, its protection system weakens and new problems are added to the problem that has not yet been solved.

In addition to the establishment of external cooperation and relations, the financial flow may slow down in the improvement of innovative and investment activities when the attitude to the economic infrastructure of the countries according to the index of cyber security is reported. This leads to a decrease in the investment attractiveness of our country, as a result of which our innovation market forms a position where it is undervalued and does not inspire confidence.

None of the investors who want to invest in the investment market will risk their funds due to the low protection system against cyberattacks, and may not want to conduct reliable cooperation in the development of science with representatives of countries that do not have the ability to ensure cyber security in their country. In order to solve such problems, it is necessary to consider the cyber protection system of digital technologies introduced into the country at the level of organizational and economic management. Accordingly, the formation of organizational and economic mechanisms and ensuring their activity is of urgent importance in the context of the development of the country's economy based on digital technologies.

In order to determine the effectiveness of the digital economic infrastructure, it is possible to analyze the level of readiness to carry out production activities based on digital technologies, the level of development of ICT, the level of development and its position of e-Government, as well as the level of activity of using mobile communications through evaluation indices.

According to the Digital Readiness Index, in 2022, Uzbekistan will occupy 80th place among 140 countries, 50 places behind the top 30 countries. This negative result is not counted, because this assessment is conducted taking into account the latest international standards. In this regard, our country has a 3-year lag in terms of operational standards management. Although it has competitiveness in the international competitive market, it is important that the standards are taken into account to increase the possibilities of the investment attractiveness and added value creation dynamics for the coming years.

Table 2.3.

**The indicative role of Uzbekistan in the digital economy<sup>1</sup>**

International indexes	Index indicator	Intermediate (by position)	Position in the rating	Total number of participating countries
Cisco Digital Readiness Index - digital readiness index	11,14	0-30	80	140
ICT Development Index – ICT development index	5,1	0-20	95	177
E-Government Development Index - e-government development index	0,77	0-1	87	190
Mobile Connectivity Index – mobile index	51,5	0-100	124	190

According to the developed level of ICT, Uzbekistan took 95th place among 177 countries with a result of 5.1%. In general, since this situation shows the characteristic of deviation towards negative results, it is recommended to review the mechanism of security in the field of ICT.

Today, it is impossible to imagine the necessary identification documentation work of the population without electronic Government. The rate of using this service in our country is 87th among 190 countries, with a coefficient of 0.77. This high result means that this service is used by every 7th citizen of Uzbekistan.

Today, mobile communication has become a means of communication available to kindergarten children and schoolchildren. The demand for it has also grown in proportion to the increase in the number of users. In particular, we can see that our country took 124th place among 190 countries and did not enter the top 100 with a coefficient of 51.5. Although it has a relatively low position in this regard, it also has its advantages. For example: the occurrence of short circuits between the communication networks of mobile communications will be less, the efficiency of Internet users in controlling the Internet speed will be higher.

<sup>1</sup> Siman Kemp. DIGITAL 2023: UZBEKISTAN. 14 FEBRUARY 2023. <https://datareportal.com/reports/digital-2023-uzbekistan>

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## LOGISTIKA SOHASIDA SUN'YI INTELLEKTNING INQILOBIY O'ZGARISHLARI VA UNING ASOSIY AFZALLIKLARI

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### ABSTRACT

*Rivojlanishda tinmay odimlab borayotgan texnologik rivojlanish zamonida, logistika landshafti talablarini qondirish uchun logistika jarayonlari va ta'minot zanjiri boshqaruvida sun'iy intellekt imkoniyatlari uyg'unlashib bormoqda. Logistika va ta'minot zanjiri operatsiyalarining samaradorligi va unimdorligini oshirdi. Zamonamiz kashfiyotlari bo'lmish robototexnikalar Logistika jarayonlarini avtomatlashtirish, avtonom transport vositalaridan foydalanish orqali an'anaviy logistika amaliyotlarini sun'iy intellekt texnologiyalari bilan o'zgartirmoqda. Ushbu maqolada robototexnika va sun'iy intellekt logistika sanoati sohasida qanday inqilobiy o'zgarishlarni taqdim qilayotgani ko'rib chiqiladi!*

### **Kalit so'zlar**

*Ta'minot zanjiri boshqaruvi, logistika, autsorsing, uchinchi tomon logistikasi, sun'iy intellekt va neyron tarmoqlari texnologiyalari.*

### **Kirish**

Iste'molchilarning tinimsiz O'zgaruvchan talablarini toboro ortib borishi natijasida logistika sohasidagi operatsiyalar uchun ham raqamlashtirish jarayonlari tobora zarur bo'lib bormoqda. Sohalar aro sun'iy intellektning odimlashi shu qadar jadallashdiki, u muayyan sohalar uchun deyarli ajralmas bo'lib qoldi, shu jumladan logistika sanoatida ham. Logistika sanoatining asosiy maqsadi ta'minot tizimidagi moddiy resurslarni optimallashtirish, ishlab chiqarish bo'g'inlarining xom ashyo, materiallar, detallar, yarim tayyor mahsulotlarga bo'lgan talabini samarali qondirish va tayyor mahsulotni iste'molchilarga yetkazib berish uchun qilinadigan barcha chora tadbirlar jarayonini qamrab oluvchi xizmatlarni tortiq etadigan obektiv jarayonga aylandi. Albatda logistikaning bunday chora tadbirlar jarayoni ham raqamli transformatsiyalashuvga muhtojligi ortib kelmoqdadir. Sun'iy intellektga asoslangan ta'minot zanjirining boshqaruvi tizimi orqali bo'shliqlarni to'ldirishi va xom ashyoni olishdan yakuniy mahsulotni yetkazib berishgacha xatosiz ta'minot zanjiri boshqaruvini tezlashtirishi mumkin.

Logistika sanoatida sun'iy intellekt texnologiyalarining ishtiroki bilan mahsuldorlikni oshirish va uzluksiz operatsiyalar bilan operatsion xarajatlarni sezilarli darajada kamaytirish mumkin. Bunga faqat raqamli transformatsiyaning bugungi ulkan imkoniyatlari orqali erishish mumkin. Jarayonlarni avtomatlashtirish xato va kechikishlar ehtimolini kamaytiradi va jarayonlarni yaxshilash uchun bashoratli tahlilga yordam beradi. Logistika sohasida sun'iy intellekt texnologiyalarining qo'llanilishi natijasida xom ashyo va tovar zahiralarini minimallashtiradi, yetkazib beruvchilar va zahiralar optimal tarzda joylashadi, tovarlarning ishlab chiqarishdan iste'mol sohasigacha bo'lgan harakat vaqti qisqaradi hamda xom ashyoni olishdan yakuniy mahsulotni etkazib berishgacha xatosiz ta'minot zanjiri boshqaruvini tezlashtirishi mumkin bo'ladi. Bularning barchasi esa pirovard natijada umumiy harajatlarning kamayishiga olib keladigan hamda maxsulotlarning yetkazi berish davrini qisqartirish orqali, sifat jihatidan yangi imkoniyatlarni sun'iy intellekt texnologiyalaridan foydalanish orqali erishish mumkinligini anglatadi.

Sun'iy intellekt texnologiyalarini logistika sanoatini qo'llash orqali biz statistika ma'lumotlarga tayangan holda talabni bashorat qilish orqali logistika sanoatini o'zgartirishi mumkin bo'lgan turli tahliliy ma'lumotlar bazasiga ega chiqamiz. O'z o'rnida keng ko'lamlil tahliliy ma'lumotlarga ega chiqish orqali biz logistika sanoatini yanada bejirim imkoniyatlarini kashf etamiz. Bundan tashqari, mashinani o'rganish va boshqa usullar orqali katta hajmdagi ma'lumotlarni qayta ishlash xatolarini kam bo'lishini va inson mehnatidan yaxshiroq foydalanishni ta'minlaydi. Ta'minot zanjirlarini sun'iy intellekt va analitika yordamida optimallashtirish, shuningdek, xavflarni oldini olish va yaxshi rentabellik uchun prognozlar tuzishga yordam beradi. Sun'iy intellekt texnologiyalari orqali olingan bashoratli tahlil ma'lumotlari mavjud bo'lganda, optimallashtirilgan marshrutlar orqali yuklarni strategik rejalashtirish mumkin bo'ladi, bu butun jarayonni oson va soddalashtiradi.

### **Mavzuga oid adabiyotlar tahlili**

Logistika - sanoat korxonalariga xom ashyo yetkazib berish jarayonida amalga oshiriladigan transport, omborxonalar va boshqa moddiy va nomoddiy operatsiyalarni rejalashtirish, boshqarish hamda xom ashyo, materiallar, yarim tayyor mahsulotlarni zavodda qayta ishlash kabi funksional vazifalarni o'zida mujassamlagan sanoat sohasi bo'lib, u tayyor mahsulotni uning talablariga muvofiq iste'molchiga etkazish, shuningdek tegishli ma'lumotlarni uzatish, qayta ishlash va saqlash kabilarni anglatadi.

Qadimgi matematikada logistika o'sha paytda ma'lum bo'lgan hisoblash va o'lchash algoritmlarining kombinatsiyasi sifatida tushunilgan. Leybnits "logistika" atamasini o'z xulosalarini hisoblashda ishlatgan. Bugungi kunda ushbu mavzu universal e'tirofga sazovor bo'ldi va ko'plab sohalarni o'z ichiga oladi.



Bugungi kunda Yevropa, Amerika va Sharqning logistika sohasidagi qarashlari bir-biriga ziddir. Amerikalik logistika muhandislari logistikani menejment, texnologiya va texnik faoliyatning san'ati va fani sifatida tushunchasiga amal qiladilar, unga rejani amalga oshirish va maqsadga erishish uchun transport vositalarini rejalashtirish, yetkazib berish va foydalanish kabilarni o'z ichiga oluvchi soha sifatida shakillantirib keldi. Logistikaning birinchi amaliy potensialini amerikalik ekspertlar Pol Convers va Piter Dyuker tomonidan bashorat qilingan. Ular uning potensialini "xarajatlarni tejashning so'nggi chegarasi" va "iqtisodiyotning noma'lum quroli (yoki materigi)" deb belgilab qo'yishdi.

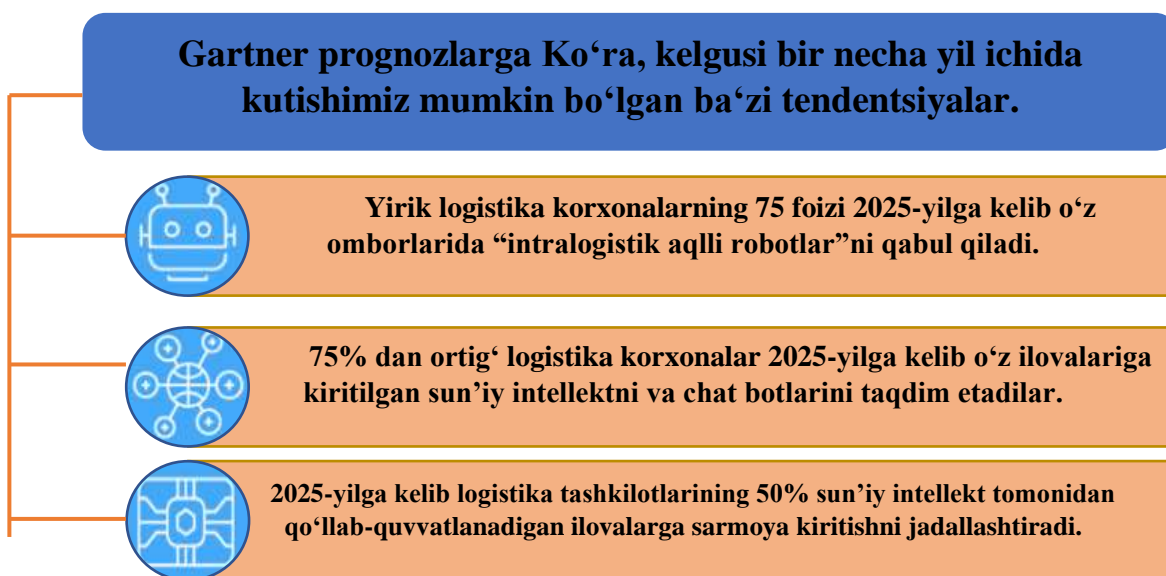
Germaniyalik olimlar va amaliyotchilar, logistikani tegishli ma'lumotlar bilan bir qatorda, xom ashyo, yarim tayyor mahsulotlar va tayyor mahsulotlarni foydali va tejamkor harakatlanishini rejalashtirish, boshqarish, amalga oshirish va nazorat qilish deb ta'riflashadi. Ingliz tadqiqotchisi M.Kristofer logistikani nafaqat firma darajasida, balki sanoat darajasida ham samarali deb hisoblaydi. Uning fikriga ko'ra, logistika sanoatning umumiy iqtisodiy jarayoni, shu jumladan korxonalar va omborlarning joylashishi masalalariga tegishli bo'lishi kerak.

### **Tadqiqot metodologiyasi**

Logistika metodologiyasi murakkab ishlab chiqarish tizimlarini ratsionalizatsiya qilishga imkon beradi. Bu korxonalar rahbarlarini ishlab chiqarish tizimlarini tashkil etishni takomillashtirish usullari bilan ta'minlaydi va ularga raqobatbardosh ustunliklarni samarali egallash imkoniyatini taqdim etadi hamda zamonaviy sanoat tuzilmasi strategik va texnologik jihatdan ilg'or ishlab chiqarish, zamonaviy xizmat ko'rsatish, raqamli iqtisodiyot va boshqa sohalarni rivojlantirishda xizmat ko'rsatadi.

Sanoat tuzilmasi takomillashtirilganda va ilg'or ishlab chiqarish tarmoqlari ko'payganda, logistika xizmatlariga bo'lgan talablar ham yuqori bo'lib, logistika sanoatining yuqori sifatli rivojlanishi uchun yuqori talablar va katta vazifalarni qo'yadi. Uchinchi darajali sanoatning nisbatan yuqori ulushi bo'lsa, logistika sanoati xizmat ko'rsatish sanoatining organik tarkibiy qismi sifatida zamonaviy xizmat ko'rsatish sanoatining namunasini tashkil etuvchi chakana savdo, umumiy ovqatlanish, qishloq xo'jaligi va boshqalar kabi boshqa xizmat ko'rsatish sohaslaridan ajralmasdir. Logistika rivojlanishining sifati xizmatlar sifatiga bevosita ta'sir qiladi va xizmat ko'rsatish sohasi yalpi ichki mahsulot o'sishining eng katta manbai bo'lib, bu iqtisodiyotning yuqori sifatli rivojlanishiga bevosita ta'sir qiladi. Logistika sanoati, shuningdek, yuqori sifatli iqtisodiy rivojlanishning turli bosqichlarida doimiy ravishda yangilanishi va taraqqiy etish, turli mijozlarning turli ehtiyojlari va talablariga javob berishi, xizmat ko'rsatish darajasi va sifatini doimiy ravishda yaxshilashi va turli bosqichlarda sanoat tuzilmasidagi o'zgarishlarga moslashishi kerak. Logistika

xizmatlariga bo‘lgan talab turli sanoat tuzilmalarida, masalan, samarali real iqtisodiyot va xizmat ko‘rsatishga yo‘naltirilgan iqtisodiyotlarda farq qiladi. Samarali real iqtisodiyotni misol qilib oladigan bo‘lsak, u asosan ishlab chiqarish, qurilish, tog‘-kon sanoati va boshqalarni o‘z ichiga oladi. Uning logistika xizmatiga bo‘lgan talabi asosan xom ashyo va tayyor mahsulotlarni tashish, saqlash, tarqatish va boshqa jihatlarda namoyon bo‘ladi.



**Rasim:** 1 kelajakda kuzatish mumkin bo‘lgan tendentsiyalar. [9]

Logistika xizmatlariga qo‘yiladigan talablar asosan transport samaradorligini oshirish va transport xarajatlarini kamaytirishga qaratilgan. Xizmat ko‘rsatishga yo‘naltirilgan iqtisodiyot ustunlik qiladigan tarmoqlarda (masalan, savdo, moliya, axborot va boshqalar) logistika xizmatlariga bo‘lgan talab iste‘molchilarga yaqin bo‘lgan ta‘minot zanjiri xizmatlarini ko‘rsatish, logistika axborotlashtirish, aylanma va qayta ishlash va hokazolarda ko‘proq namoyon bo‘ladi.

### Tahlil va natijalar

Logistika sanoatida sun‘iy intellekt texnologiyalarining maqsadi – Shunday qilib, sun‘iy intellekt texnologiyalari kundalik turmush tarzida yuzaga keladigan har bir faoliyatga to‘g‘ri resurslarni ajratish imkonini beradi. Shu ma‘noda, katta ma‘lumotlardan foydalanish logistikani oldindan yo‘lga qo‘yish va zaxiralarning yetishmasligini oldini olish, ortiqcha saqlashni oldini olish va shu bilan resurslardan foydalanishni kamaytirish uchun juda muhimdir.

Logistika sanoatida sun‘iy intellekt texnologiyalarining ishtiroki bilan mahsuldorlikni oshirish va uzluksiz operatsiyalar bilan operatsion xarajatlarni sezilarli darajada kamaytirish mumkin. Bunga faqat raqamli transformatsiyaning bugungi ulkan

imkoniyatlari orqali erishish mumkin. Jarayonlarni avtomatlashtirish xato va kechikishlar ehtimolini kamaytiradi va jarayonlarni yaxshilash uchun bashoratli tahlilga yordam beradi. Logistika sohasida sun'iy intellekt texnologiyalarining qo'llanilishi natijasida xom ashyo va tovar zahiralarini minimallashtiradi, yetkazib beruvchilar va zahiralar optimal tarzda joylashadi, tovarlarning ishlab chiqarishdan iste'mol sohasigacha bo'lgan harakat vaqti qisqaradi hamda xom ashyoni olishdan yakuniy mahsulotni etkazib berishgacha xatosiz ta'minot zanjiri boshqaruvini tezlashtirishi mumkin bo'ladi. Bularning barchasi esa pirovard natijada umumiy harajatlarning kamayishiga olib keladigan hamda mahsulotlarning yetkazib berish davrini qisqartirish orqali sifat jihatidan yangi imkoniyatlarni sun'iy intellekt va neyron tarmoqlari texnologiyalaridan foydalanish orqali erishish mumkinligini anglatadi.

Jahon bankining Logistika samaradorligi indeksi (LPI) har ikki yilda bir marta nashr etiladi. Shunga ko'ra jaxon bankining logistika samaradorligi indeksi (LPI) 2023 ma'lumotlariga ko'ra mamlakatlarni savdoning 6 ta yo'nalishi bo'yicha 2023-yillardagi eng yuqori o'sish tendensiyalari tahlil qilingan. O'tkazilgan nazariy va empirik tadqiqotlar hamda xalqaro yuk tashish bilan shug'ullanuvchi logistika bo'yicha mutaxassislarining amaliy tajribasi asosida talil qilingan. Jumladan:

- Bojxona va chegara punkitlarida boshqaruvini rasmiylashtirish samaradorligi (Bojxona);
- Savdo va transport infratuzilmasining sifati (Infratuzilma);
- Raqobatbardosh narxdagi jo'natmalarni tashkil qilishning qulayligi (Narxlar);
- Logistika xizmatlarining malakasi va sifati-yuk tashish, ekspeditorlik va bojxona brokerligi (Logistika xizmatlari sifati);
- Yuklarni kuzatish imkoniyati (Tracking);
- Belgilangan yoki kutilgan yetkazib berish muddatlarida jo'natuvchilarga jo'natmalarning yetib borish chastotasi (Vaqt).

LPI ma'lumotlarni mamlakatlararo taqqoslash uchun ishlatilishi mumkin bo'lgan yagona ko'rsatkichga jamlash uchun standart statistik usullardan foydalanildi.

## 1-jadval

## Logistika samaradorligi indeksi (LPI)da 2023-yildagi eng yuqori o'sish tendensiyalar o'nligi [8]

	Davlatlar nomi	LPI ko'rsatkichi %	Bojxona ko'rsatkichi %	Infratuzilma ko'rsatkichi %	Xalqaro jo'natmalar ko'rsatkichi %	Logistika sifat ko'rsatkichi %	Tracking Ko'rsatkichi %
1.	Singapur	4.3	4.2	4.6	4.0	4.4	4.4
2.	Finlyandiya	4.2	4.0	4.2	4.1	4.2	4.2
3.	Daniya	4.1	4.1	4.1	3.6	4.1	4.3
4.	Germaniya	4.1	3.9	4.3	3.7	4.2	4.2
5.	Niderlandiya	4.1	3.9	4.2	3.7	4.2	4.2
6.	Shveysariya	4.1	4.1	4.4	3.6	4.3	4.2
7.	Avstriya	4.0	3.7	3.9	3.8	4.0	4.2
8.	Belgiya	4.0	3.9	4.1	3.8	4.2	4.0
9.	Kanada	4.0	4.0	4.3	3.6	4.2	4.1
10.	Gankong (Xitoy)	4.0	3.8	4.0	4.0	4.0	4.1

Sun'iy intellekt texnologiyalarini logistika sanoatini qo'llash orqali biz statistika ma'lumotlarga tayangan holda talabni bashorat qilish orqali logistika sanoatini o'zgartirishi mumkin bo'lgan turli tahliliy ma'lumotlar bazasiga ega chiqamiz. O'z o'rnida keng ko'lamlil tahliliy ma'lumotlarga ega chiqish orqali biz logistika sanoatini yanada bejirim imkoniyatlarini kashf etamiz. Bundan tashqari, mashinani o'rganish va boshqa usullar orqali katta hajmdagi ma'lumotlarni qayta ishlash xatolarni kam bo'lishini va inson mehnatidan yaxshiroq foydalanishni ta'minlaydi. Ta'minot zanjirlarini sun'iy intellekt va analitika yordamida optimallashtirish, shuningdek, xavflarni oldini olish va yaxshi rentabellik uchun prognozlar tuzishga yordam beradi. Sun'iy intellekt texnologiyalari orqali olingan bashoratli tahlil ma'lumotlari mavjud bo'lganda, optimallashtirilgan marshrutlar orqali yuklarni strategik rejalashtirish mumkin bo'ladi, bu butun jarayonni oson va soddalashtiradi. Aniq qarorlar qabul qilish orqali yaxshi yakuniy natijalarga erishish uchun turli xil transport turlari ham ko'rib chiqilishi va optimallashtirilishi mumkin.

### Xulosa va takliflar

Logistika sohasidagi sun'iy intellekt logistika sanoatidagi turli vazifalar va jarayonlarni optimallashtirish va avtomatlashtirish uchun sun'iy intellekt texnologiyalari va algoritmlaridan foydalanishni anglatadi. Sun'iy intellekt talabni

prognozlash, marshrutni optimallashtirish, omborlarni boshqarish, inventar nazorati va ta'minot zanjiri ko'rinishi kabi sohalarda qo'llanilishi mumkin.

Ushbu muvaffaqiyat kaliti nafaqat transport oqimini optimallashtirish va kechikishlarni kamaytirish, balki logistika kompaniyalariga o'z faoliyatini tartibga solish, operatsion xarajatlarni kamaytirish va misli ko'rilmagan tezlik va aniqlik bilan tovarlarni etkazib berish imkonini beradi. Sun'iy intellekt boshqaruvida logistika va ta'minot zanjiri boshqaruvining kelajagi istiqbolli ko'rinadi, chunki korxonalar global bozorda ko'proq ko'rinish, samaradorlik va raqobatbardoshlikka intiladi.

Uning butun mamlakatlarda uzluksiz ishlashi uchun texnologik taraqqiyot sur'atlarini kuzatib borish muhimdir. Mazkur maqolamizda biz logistika sanoatida sun'iy intellekt va analitikaning bir xil tamoyillariga asoslangan, yetkazib berish tizimining boshqaruvi yoki ta'minot zanjirining boshqaruvi (supply chain management)da sun'iy intellekt texnologiyalarini ham sanoat sifatida rivojlanish jarayonlari o'rganilib chiqildi jumlada:

✓ Talabni tahlil qilish: Bu sun'iy intellekt algoritmlari mahsulotlarga bo'lajak talabni aniq bashorat qilish uchun tarixiy ma'lumotlarni, bozor tendentsiyalarini va tashqi omillarni tahlil qilishi mumkin. Bu logistika mutaxassislariga inventar darajasini rejalashtirish va ta'minot zanjiri operatsiyalarini optimallashtirishga yordam beradi;

✓ Marshrutni optimallashtirish: Bu sun'iy intellekt algoritmlari etkazib berish marshrutlarini optimallashtirish uchun transport turlari va yo'nalishlari, ob-havo sharoitlari, etkazib berish vaqti jarayonlari hamda transport vositalarining imkoniyatlari kabi turli omillarni hisobga olishi imkoniyatini yaratadi. Bu transport xarajatlarini kamaytiradi, samaradorlikni oshiradi va mijozlar ehtiyojini qondirishni oshiradi;

✓ Omborni avtomatlashtirish: Bu sun'iy intellekt bilan ishlaydigan robotlar va avtomatlashtirish tizimlari omborlarda yig'ish, qadoqlash, saralash va inventarni boshqarish kabi vazifalarni samarali bajarishi mumkin. Bu tezlik, aniqlik va umumiy operatsion samaradorlikni oshiradi;

✓ Ta'minot zanjiri ko'rinishi: Narsalar interneti (Internet of Things) sensorlari va blokcheyn kabi sun'iy intellekt texnologiyalari orqali etkazib berish zanjiri bo'ylab tovarlar harakatining real vaqt rejimida ko'rinishini ta'minlaydi. Bu jo'natmalarni yaxshiroq kuzatish va shaffofligini ta'minlaydi;

✓ Risklarni boshqarish: Bu sun'iy intellekt algoritmlari ta'minot zanjiridagi potentsial xavf va uzilishlarni aniqlash uchun turli manbalardan olingan ma'lumotlarni tahlil qilishi mumkin. Bu logistika mutaxassislariga xavflarni faol ravishda kamaytirish va favqulodda vaziyatlar rejalarini ishlab chiqish imkonini beradi;

✓ Chatbotlar va virtual yordamchilar: sun'iy intellektga asoslangan chatbotlar va virtual yordamchilar mijozlar so'rovlarini ko'rib chiqishlari, real vaqt rejimida yordam ko'rsatishlari hamda buyurtmalarni kuzatish, yetkazib berish yangilanishlari va muammolarni hal qilishda yordam berishi mumkin.

Umuman olganda, logistika sohasidagi sun'iy intellekt samaradorlikni oshirish, xarajatlarni kamaytirish, mijozlarga xizmat ko'rsatishni yaxshilash va yaxshiroq qaror qabul qilish imkonini berish orqali logistika sanoatda inqilobiy o'zgarishlarni amalga oshirish uchun ushbu soha o'z potentsiallariga ega.

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## QUANTUM COMPUTING: UNVEILING OPPORTUNITIES, CHALLENGES, AND ETHICAL CONSIDERATIONS IN TECHNOLOGY AND BUSINESS

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**Abstract.** *This paper offers a comprehensive exploration of quantum computing, a transformative force poised to reshape technology and business landscapes. Beginning with an exploration of its foundational principles, the paper delves into the far-reaching implications of quantum algorithms, particularly their impact on existing cryptographic measures. Simultaneously, it uncovers significant opportunities in key sectors such as finance, healthcare, and logistics. The narrative progresses to examine the emergence of novel business models, exemplified by Quantum-as-a-Service (QaaS) and augmented AI capabilities. While highlighting the myriad possibilities, the paper also addresses the challenges and ethical considerations accompanying the rapid ascent of quantum technologies. Stressing the need for collaborative efforts among businesses, policymakers, and technologists, the article advocates for a balanced and responsible approach to quantum adoption.*

**Keywords:** *quantum business opportunities; quantum business challenges; quantum computing; Quantum-as-a-Service (QaaS); quantum algorithms; technological revolution; quantum industry applications.*

## 1. Introduction

The arrival of quantum computing signals a transformative era poised to reshape the intersection of business and technology. This paper provides an in-depth examination of the multifaceted impact of quantum computing on businesses, presenting a comprehensive exploration of both the opportunities and challenges that lie ahead. Grounded in the enigmatic principles of quantum mechanics, quantum computing represents a paradigm shift from classical computing, offering unprecedented processing speeds and the ability to address previously insurmountable problems. This review takes a journey through the quantum realm, unraveling its implications for diverse industries, including finance, healthcare, logistics, and artificial intelligence.

Beyond the allure of quantum computing's capabilities, the paper emphasizes the importance of navigating ethical and socioeconomic considerations. As businesses strive to harness this formidable technology, concerns related to data privacy, economic disparities, labor market transformations, and environmental impact come to the forefront. The aim of this paper is to provide readers with a nuanced understanding of the quantum paradigm and its intricate relationship with the business world.

## 2. Quantum Computing

### 2.1. Background of Quantum Computing

The realm of quantum computing is frequently hailed as the next frontier in technological advancement. Its potential arises from the distinctive and often counterintuitive principles of quantum mechanics, a physics theory explaining the behavior of particles at minute scales, specifically atoms and subatomic particles. The fundamental tenets of quantum computing revolve around three key principles: superposition, entanglement, and quantum interference.

Conventional computers, pivotal in propelling the contemporary digital revolution, operate on bits that can exist as either 0 or 1, forming the basis for all data processing in traditional machines [1]. In contrast, quantum computers employ quantum bits or qubits. Unlike classical bits, qubits can exist in a state of superposition, concurrently representing both 0 and 1. This characteristic exponentially enhances the computational capabilities of quantum machines. For instance, while two classical bits can assume one of four possible states at any given time, two qubits can concurrently represent all four states [2].

Entanglement, the second foundational aspect of quantum computing, is a quantum phenomenon wherein particles become interconnected in a manner such that the state of one particle directly influences the state of another, irrespective of the distance between them [3]. This implies that entangled qubits can communicate and coordinate



in ways classical bits cannot, enabling quantum computers to address problems currently beyond the capabilities of classical machines.

The third crucial principle is quantum interference, a phenomenon wherein probability amplitudes (coefficients describing the state of a quantum system) combine to either reinforce or cancel each other out. This allows quantum algorithms to amplify correct solutions and minimize errors, leading to faster and more accurate computations [4].

The concept of a quantum computer was initially conceived by Richard Feynman in the early 1980s. Feynman theorized that simulating quantum systems on a classical computer was inherently inefficient and proposed that a quantum mechanical computer would perform the task more effectively [5]. Following Feynman's proposition, in 1985, David Deutsch from the University of Oxford established the framework for the universal quantum computer, laying a significant theoretical groundwork for the field [6].

The transition from these theoretical underpinnings to tangible machines required decades of research and innovation. Quantum computing, initially confined to academic exploration, has in recent years attracted substantial investments from major tech corporations such as IBM, Google, and Intel. These companies are enticed by the potential of quantum computers to tackle problems currently deemed intractable for classical machines, such as simulating large molecules for drug discovery or optimizing extensive logistical networks in real-time [7].

Quantum computing is poised to redefine the computational boundaries of what is currently feasible. Rooted in the enigmatic principles of quantum mechanics, it represents a paradigm shift from the classical computing models that have dominated the digital age.

## *2.2. The Rise of Quantum Computing in the Business Realm*

The captivating potential of quantum computing, accompanied by a palpable transition from theoretical concepts to functional prototypes, has positioned the field as a substantial disruptor in the global business ecosystem. A fusion of academic, governmental, and commercial pursuits has driven the development and application of quantum technologies.

IBM embarked on an early venture into commercial quantum computing, making notable strides in the late 1990s and early 2000s, fostering robust academic–corporate partnerships [8]. The culmination of their efforts materialized in 2019 with the introduction of the IBM Q System One, heralded as the world's first integrated quantum computing system tailored for scientific and commercial use [9].

Google, a tech industry giant, enthusiastically entered the quantum arena and achieved a remarkable milestone in 2019 by attaining "quantum supremacy". This marked the inaugural instance of a quantum computer outperforming the world's most advanced classical computer. Google's 53-qubit Sycamore processor completed a calculation in a mere 200 seconds that would have taken a state-of-the-art supercomputer approximately 10,000 years [10].

Intel, renowned for semiconductor and chip expertise, joined the quantum race in 2018, showcasing the 49-qubit quantum chip named "Tangle Lake", underscoring its commitment to scaling up quantum hardware [11].

The trajectory of quantum computing in the business sphere is not exclusively dominated by tech giants. Startups like Rigetti Computing [12] and IonQ [13] have demonstrated remarkable agility and innovation. Rigetti, for example, provides quantum cloud services, while IonQ focuses on trapped ion quantum computing, highlighting diverse approaches to realizing functional quantum machines.

Beyond hardware, a thriving market for quantum software and applications has emerged. Companies like 1QBit develop tailored software solutions for quantum processors, benefiting sectors ranging from finance to healthcare [14].

The financial implications of these quantum advancements are profound. According to a Boston Consulting Group report, the quantum industry is projected to grow to \$5 billion to \$10 billion annually in the 2020s, emphasizing substantial economic opportunities on the horizon [15]. The same report suggests that while full-scale, fault-tolerant quantum computers may still be years away, commercial applications of near-term quantum computers—termed Noisy Intermediate-Scale Quantum (NISQ) devices—are poised to emerge. Since the early 2020s, D-Wave has been offering cloud-based quantum computing services based on NISQ devices [16].

The convergence of quantum computing and business transcends the construction of powerful processors; it entails reshaping industries. The pharmaceutical sector closely monitors quantum developments to revolutionize drug discovery processes, traditionally resource-intensive and time-consuming [17]. The financial industry anticipates quantum algorithms to optimize trading strategies, manage risk, and enhance fraud detection mechanisms [18].

In essence, the integration of quantum computing into the business world is not a future inevitability; it is an ongoing transition. The advancements led by both industry giants and nimble startups underscore the vast potential and collaborative efforts driving quantum innovations.

### 2.3. Challenges and Limitations in Quantum Computing for Business

Quantum computing holds immense potential for transforming various business sectors, but it is not devoid of challenges and limitations. As businesses explore quantum capabilities, they must understand the constraints, both current and potential, to make informed decisions and gauge the practical applicability of this technology.

*Technological Maturity:* Quantum technology is still in its infancy when compared to classical computing. The most advanced quantum computers available today are Noisy Intermediate-Scale Quantum (NISQ) devices, which, while remarkable, are still prone to errors due to the inherent noise in the system [19]. These errors can accumulate and pose significant challenges for practical applications.

*Quantum Decoherence:* Qubits are sensitive to their surroundings. External influences, such as electromagnetic radiation or temperature fluctuations, can cause qubits to lose their quantum properties, a phenomenon known as decoherence [20]. While progress has been made in isolating qubits, ensuring longer coherence times is critical for practical and scalable quantum computation.

*Quantum-to-Classical Transition:* Even with a perfect quantum solution, transitioning the result back to a classical system (which most businesses use) can be complex and error-prone [21]. This challenge underscores the importance of hybrid quantum–classical algorithms, where part of the computation occurs quantumly, and part classically.

*Quantum Programming and Algorithms:* Quantum computers operate fundamentally differently from their classical counterparts. As such, new algorithms and programming paradigms are required. While strides have been made with algorithms like Shor's (for factoring large numbers) or Grover's (for searching unsorted databases), many real-world business problems still lack efficient quantum algorithms [22,23].

*Hardware Diversity:* There are multiple approaches to building quantum computers, including superconducting qubits, trapped ions, and topological qubits. Each has its advantages, limitations, and stages of development. This diversity makes it challenging for businesses to decide which quantum path to invest in or adopt [24].

*Skill Gap:* The quantum realm is complex, demanding an interdisciplinary blend of skills from physics, computer science, and mathematics. There is a significant skill gap, with a dearth of professionals possessing the requisite expertise to design, build, and operate quantum systems [25]. Bridging this gap is vital for widespread quantum adoption in businesses.

*Cybersecurity Concerns:* Quantum computers threaten to disrupt current encryption standards. Algorithms like Shor's can potentially break widely used

encryption schemes, posing challenges to data security and privacy [26]. While quantum-safe cryptographic methods are being explored, their implementation in a business context remains a significant concern.

*Business Case Validation:* Given the nascent stage of quantum technology, many businesses struggle to make a compelling business case for quantum investment. Quantifying the ROI and ensuring that quantum solutions offer a definitive advantage over classical alternatives is a challenge [27].

*Quantum Supremacy Misconceptions:* The term “quantum supremacy” often leads to misconceptions. While Google’s achievement was significant, it does not imply that quantum computers are superior to classical computers in all respects. They are different tools with different strengths [28].

Despite these challenges, the quantum landscape is rapidly evolving, with continuous advancements addressing many of the aforementioned limitations. Businesses looking to harness the power of quantum computing should maintain a realistic perspective, acknowledging the challenges while staying updated with the latest breakthroughs.

### 3. Limitations of the Research

While this paper strives to provide a comprehensive overview of the impact of quantum computing on businesses, it is essential to acknowledge its limitations:

*Evolution of Quantum Technologies:* Quantum computing is a rapidly evolving field. There may have been significant developments in quantum hardware, algorithms, and applications that are not covered.

*Complexity of Quantum Concepts:* Quantum mechanics is a highly complex and abstract field. Explaining quantum concepts and their implications for business in a concise and accessible manner can be challenging. Some readers may find certain sections of the article difficult to grasp without a background in quantum physics.

*Predictions and Projections:* The paper includes projections for the evolution of quantum computing that are speculative in nature and subject to change based on various factors, including technological breakthroughs and economic trends.

*Ethical and Socioeconomic Implications:* The discussion of ethical and socioeconomic implications is based on current understanding and speculation. The actual impact of quantum computing on society and ethics may differ from what is presented in the paper.

*Limited Inclusion of Specific Business Cases:* While the article discusses the potential applications of quantum computing in various industries, it may not provide in-depth coverage of specific business cases or examples. The actual adoption of quantum technologies by businesses may vary widely.

*Space Constraints:* Due to the complexity and breadth of the topic, the paper may not cover every aspect of quantum computing's impact on businesses. Some subtopics and nuances may be omitted or briefly summarized.

#### 4. Conclusions

The realm of quantum computing, once confined to speculative science fiction, has firmly established itself as a tangible force within our technological landscape. As explored throughout this article, its implications are both awe-inspiring and cautionary. From disrupting conventional cryptographic methods to giving rise to new industries, the quantum wave is reshaping the fabric of business, science, and society.

It is crucial to acknowledge that quantum computing represents not just an advanced tool but a paradigm shift. Its unparalleled capacity to process and analyze data opens unprecedented opportunities for industries spanning healthcare, finance, logistics, and artificial intelligence. However, like any powerful tool, it presents challenges—ethical, economic, and technological.

In navigating this quantum journey, collaboration among business leaders, policymakers, and technologists is imperative. Responsible harnessing of the power of quantum mechanics requires investments in quantum research and education. This commitment is vital not only for maintaining competitiveness but also to ensure that the benefits of this revolution are accessible and advantageous to all.

The advent of the quantum age is at hand, promising a world of limitless possibilities, intricate challenges, and the prospect of progress. As we continue to unravel the mysteries of the quantum realm and translate its principles into practical applications, it is our collective responsibility to embark on this journey with vision, foresight, and an unwavering dedication to the greater good.

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## OPPORTUNITIES, CHALLENGES, AND ETHICAL CONSIDERATIONS OF QUANTUM COMPUTING IN TECHNOLOGY AND BUSINESS

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**Abstract.** *This paper extensively explores the realm of quantum computing, a revolutionary force set to transform the landscapes of technology and business. Beginning with an in-depth analysis of its fundamental principles, the document delves into the broad-reaching consequences of quantum algorithms, particularly their influence on existing cryptographic methods. Simultaneously, it uncovers substantial opportunities across vital sectors such as finance, healthcare, and logistics. The narrative then scrutinizes the emergence of innovative business models, exemplified by Quantum-as-a-Service (QaaS) and enhanced AI capabilities. While showcasing numerous possibilities, the paper also confronts the challenges and ethical considerations associated with the swift rise of quantum technologies. Emphasizing the necessity for collaborative endeavors among businesses, policymakers, and technologists, the article advocates for a measured and responsible approach to the adoption of quantum technologies.*

**Keywords:** *quantum business opportunities; quantum business challenges; quantum computing; Quantum-as-a-Service (QaaS); quantum algorithms; technological revolution; quantum industry applications.*



## 1. Introduction

The advent of quantum computing heralds a transformative era set to reshape the convergence of business and technology. This paper conducts a thorough analysis of the multifaceted impact of quantum computing on businesses, offering a comprehensive exploration of both the opportunities and challenges on the horizon. Rooted in the enigmatic principles of quantum mechanics, quantum computing signifies a departure from classical computing, providing unparalleled processing speeds and the capability to address previously insurmountable problems. This review guides readers through the quantum realm, unraveling its implications for diverse industries, including finance, healthcare, logistics, and artificial intelligence.

Beyond the captivating capabilities of quantum computing, the paper underscores the significance of navigating ethical and socioeconomic considerations. As businesses strive to harness this powerful technology, concerns pertaining to data privacy, economic disparities, shifts in the labor market, and environmental impact come to the forefront. The objective of this paper is to furnish readers with a nuanced understanding of the quantum paradigm and its intricate relationship with the business world.

## 2. Quantum Computing

### 2.1. Background of Quantum Computing

The domain of quantum computing is frequently celebrated as the imminent frontier in technological progress. Its potential stems from the distinct and often counterintuitive principles of quantum mechanics, a physics theory elucidating the behavior of particles at minute scales, particularly atoms and subatomic particles. The foundational principles of quantum computing center around three key concepts: superposition, entanglement, and quantum interference.

Traditional computers, integral to propelling the contemporary digital revolution, operate on bits that can exist as either 0 or 1, forming the basis for all data processing in conventional machines [1]. In contrast, quantum computers employ quantum bits or qubits. Unlike classical bits, qubits can exist in a state of superposition, simultaneously representing both 0 and 1. This characteristic significantly enhances the computational capabilities of quantum machines. For instance, while two classical bits can assume one of four possible states at any given time, two qubits can concurrently represent all four states [2].

Entanglement, the second foundational aspect of quantum computing, is a quantum phenomenon wherein particles become interconnected in a manner such that the state of one particle directly influences the state of another, regardless of the distance between them [3]. This implies that entangled qubits can communicate and coordinate

in ways classical bits cannot, enabling quantum computers to address problems currently beyond the capabilities of classical machines.

The third critical principle is quantum interference, a phenomenon wherein probability amplitudes (coefficients describing the state of a quantum system) combine to either reinforce or cancel each other out. This allows quantum algorithms to amplify correct solutions and minimize errors, leading to faster and more accurate computations [4].

The concept of a quantum computer was initially proposed by Richard Feynman in the early 1980s. Feynman theorized that simulating quantum systems on a classical computer was inherently inefficient and suggested that a quantum mechanical computer would perform the task more effectively [5]. Following Feynman's proposition, in 1985, David Deutsch from the University of Oxford established the framework for the universal quantum computer, laying a significant theoretical groundwork for the field [6].

The transition from these theoretical foundations to tangible machines required decades of research and innovation. Initially limited to academic exploration, quantum computing has in recent years attracted substantial investments from major tech corporations such as IBM, Google, and Intel. These companies are drawn by the potential of quantum computers to address problems currently considered insurmountable for classical machines, such as simulating large molecules for drug discovery or optimizing extensive logistical networks in real-time [7].

Quantum computing is poised to redefine the computational boundaries of what is currently feasible. Rooted in the enigmatic principles of quantum mechanics, it represents a paradigm shift from the classical computing models that have dominated the digital age.

## *2.2. The Rise of Quantum Computing in the Business Realm*

The enthralling potential of quantum computing, coupled with a tangible shift from theoretical concepts to operational prototypes, has positioned the field as a significant disruptor in the global business ecosystem. The development and application of quantum technologies have resulted from a synergy of academic, governmental, and commercial pursuits.

IBM ventured into commercial quantum computing early on, making notable progress in the late 1990s and early 2000s through robust academic–corporate partnerships [8]. Their efforts culminated in 2019 with the introduction of the IBM Q System One, recognized as the world's first integrated quantum computing system designed for scientific and commercial use [9].

Google, a prominent player in the tech industry, entered the quantum arena with enthusiasm and achieved a remarkable milestone in 2019 by achieving "quantum supremacy." This marked the first instance of a quantum computer outperforming the world's most advanced classical computer. Google's 53-qubit Sycamore processor completed a calculation in just 200 seconds that would have taken a state-of-the-art supercomputer approximately 10,000 years [10].

Intel, renowned for its expertise in semiconductors and chips, entered the quantum race in 2018, showcasing the 49-qubit quantum chip named "Tangle Lake," emphasizing its commitment to scaling up quantum hardware [11].

The trajectory of quantum computing in the business sphere is not solely dominated by tech giants. Startups like Rigetti Computing [12] and IonQ [13] have demonstrated remarkable agility and innovation. For instance, Rigetti provides quantum cloud services, while IonQ focuses on trapped ion quantum computing, illustrating diverse approaches to realizing functional quantum machines.

Beyond hardware, a thriving market for quantum software and applications has emerged. Companies like 1QBit develop tailored software solutions for quantum processors, benefiting sectors ranging from finance to healthcare [14].

The financial implications of these quantum advancements are profound. According to a Boston Consulting Group report, the quantum industry is expected to grow to \$5 billion to \$10 billion annually in the 2020s, highlighting substantial economic opportunities ahead [15]. The report also suggests that while full-scale, fault-tolerant quantum computers may still be years away, commercial applications of near-term quantum computers—termed Noisy Intermediate-Scale Quantum (NISQ) devices—are poised to emerge. Since the early 2020s, D-Wave has been offering cloud-based quantum computing services based on NISQ devices [16].

The convergence of quantum computing and business goes beyond the creation of powerful processors; it involves reshaping industries. The pharmaceutical sector closely monitors quantum developments to revolutionize drug discovery processes, traditionally resource-intensive and time-consuming [17]. The financial industry anticipates quantum algorithms to optimize trading strategies, manage risk, and enhance fraud detection mechanisms [18].

In essence, the integration of quantum computing into the business world is not a future inevitability; it is an ongoing transition. The advancements led by both industry giants and nimble startups underscore the vast potential and collaborative efforts driving quantum innovations.

### *2.3. Investment Trends and Quantum Business Ecosystem*

The ascent of quantum computing from theoretical speculation to potential commercial applications has triggered substantial investments, drawing contributions from both private sectors and governmental entities. The quantum business ecosystem is expanding, with startups, technology giants, and venture capitalists actively competing for a share of the quantum landscape. This section explores the current investment trends and the evolving quantum business environment.

**Private Sector Investments:** Recognizing the potential of quantum computing, major tech companies have committed significant resources to research and development. IBM, Google, and Intel have initiated their quantum ventures, highlighting the anticipated return on investment in this sector [19,20]. Beyond these tech giants, numerous Fortune 500 companies are strategically investing to ensure they stay competitive in the quantum race, acknowledging the transformative potential of quantum computing.

**Venture Capital Influx:** The past decade has witnessed a surge in quantum startups, fueled by substantial venture capital (VC) funding. According to a Nature report, VC investments in quantum technologies surged from \$30 million in 2012 to over \$450 million in 2019 [21]. Companies like Rigetti Computing, IonQ, and Xanadu Quantum Technologies have secured significant funding rounds, underscoring the growing confidence in the commercial viability of quantum technology.

**Governmental Initiatives and Funding:** Governments worldwide are channeling investments into quantum research, recognizing its potential impact on national security, economic growth, and technological leadership. Initiatives such as the United States' National Quantum Initiative Act [22], allocating over a billion dollars for quantum research, and the European Union's Quantum Flagship program, with a budget of EUR 1 billion, highlight the global urgency in advancing quantum capabilities [23].

**Collaborative Quantum Endeavors:** A distinctive feature of the quantum landscape is the proliferation of collaborative ventures. Universities, research institutions, and private companies are forming partnerships to strengthen quantum research. IBM's Q Network, which collaborates with startups, research hubs, and Fortune 500 companies, exemplifies this collaborative trend [24].

**Quantum-as-a-Service (QaaS):** Given the complexity and cost of quantum hardware and operations, there is a growing market for Quantum-as-a-Service (QaaS). Companies like IBM and Rigetti offer cloud-based quantum services, enabling businesses to run quantum algorithms without the need to own a quantum computer [25]. This trend mirrors the early days of classical computing, where mainframe time-sharing was prevalent.

**Mergers and Acquisitions (M&A):** As the quantum ecosystem matures, M&A activities are anticipated to rise. Established tech entities are expected to acquire promising quantum startups, integrating innovative quantum solutions into their product portfolio and securing quantum talent [26].

**Ethical Investments:** Given quantum computing's potential to revolutionize industries, some investors are emphasizing the alignment of quantum advancements with ethical and societal values. These investors prioritize the responsible development and deployment of quantum technologies, ensuring they do not exacerbate societal inequalities or contribute to detrimental applications [27].

**Quantum Education and Training Investments:** To address the quantum skill gap, universities are introducing quantum curricula, and online platforms are offering specialized quantum courses to nurture a new generation of quantum developers. The quantum business ecosystem is multifaceted, marked by dynamic investment trends. Stakeholders, from governments to venture capitalists, are investing not only in quantum hardware but also in the broader quantum infrastructure, ensuring that the world is well-prepared to harness the full potential of quantum capabilities [28].

#### *2.4. Data Security and Quantum Cryptography*

The advent of quantum computing presents a dual challenge and opportunity for data security. This section explores the implications for data security, addressing both the threats posed to classical encryption and the opportunities offered by quantum cryptography.

**Threat to Classical Cryptography:** Quantum computers, employing Shor's algorithm, can efficiently solve computational challenges at the core of contemporary encryption methods like RSA and ECC. This renders many classical encryption techniques susceptible to quantum attacks.

**Quantum Key Distribution (QKD):** Quantum mechanics offers a pioneering approach to cryptography through QKD. Unlike classical methods relying on computational assumptions, QKD utilizes quantum principles to securely exchange cryptographic keys. Any attempt at eavesdropping disrupts the transmitted quantum states, alerting communicating parties to the intrusion [29].

**Post-Quantum Cryptography:** Recognizing the threats posed by quantum computers, researchers are exploring post-quantum or quantum-safe cryptographic protocols. These classical techniques, not quantum in nature, aim to be secure against quantum attacks. Examples include lattice-based cryptography, code-based cryptography, and multivariate polynomial cryptography [30].

**Quantum Digital Signatures:** Quantum mechanics enables the creation of digital signatures that are secure against forgery and transferable. This allows multiple parties to verify a signature's authenticity without compromising its security [31].

**Quantum Secure Direct Communication (QSDC):** Beyond QKD, QSDC protocols enable the direct and secure transmission of messages using quantum principles, eliminating the need for a cryptographic key. Although in early stages, QSDC demonstrates the potential of quantum mechanics in reshaping secure communication methods [32].

**Challenges in Implementation:** Implementing quantum cryptography at scale faces challenges such as the fragility of quantum states, distance limitations of quantum channels, and the need for efficient quantum repeaters. Researchers are actively addressing these technological hurdles [33].

**Regulatory and Policy Implications:** The evolution of quantum cryptography necessitates new standards, policies, and regulatory measures. Achieving a smooth transition from classical to quantum and post-quantum cryptographic standards requires international cooperation, industry engagement, and forward-thinking policy measures [34].

While the rise of quantum computing introduces vulnerabilities in classical encryption, it also heralds a new era of quantum-enhanced security protocols. Balancing threats and opportunities, the cryptographic landscape is poised for profound transformations in the quantum age. Close collaboration among businesses, policymakers, and technologists is crucial to ensuring the security of our digital world in the face of these quantum advancements.

### 3. Limitations of the Research

This paper aims to offer a comprehensive overview of the influence of quantum computing on businesses; however, it is crucial to acknowledge its inherent limitations:

**Evolution of Quantum Technologies:** The field of quantum computing is advancing rapidly, and there may have been significant developments in quantum hardware, algorithms, and applications that are not covered in this paper.

**Complexity of Quantum Concepts:** Quantum mechanics is an intricate and abstract field. Expressing quantum concepts and their business implications in a concise and accessible manner can be challenging. Certain sections of the article may be challenging for readers without a background in quantum physics.

**Predictions and Projections:** The paper includes speculative projections for the evolution of quantum computing, which are subject to change based on various factors, including technological breakthroughs and economic trends.

**Ethical and Socioeconomic Implications:** The discussion of ethical and socioeconomic implications is based on current understanding and speculation. The actual impact of quantum computing on society and ethics may differ from what is presented in the paper.

**Limited Inclusion of Specific Business Cases:** While the article explores potential applications of quantum computing across various industries, it may not delve into specific business cases or provide in-depth examples. The adoption of quantum technologies by businesses is expected to vary widely.

**Space Constraints:** Given the complexity and breadth of the topic, the paper may not cover every aspect of quantum computing's impact on businesses. Certain subtopics and nuances may be omitted or briefly summarized due to space constraints.

These limitations highlight the dynamic and evolving nature of the quantum computing field, the challenges in communicating complex concepts, and the speculative nature of predictions. Readers are encouraged to seek additional sources and updates to supplement their understanding of the rapidly advancing field of quantum computing.

#### 4. Conclusions

The domain of quantum computing, once relegated to the realms of speculative science fiction, has firmly established itself as a tangible force in our technological landscape. As discussed in this article, its implications are both astonishing and cautionary, ranging from disrupting traditional cryptographic methods to fostering the emergence of new industries. The quantum wave is reshaping the fabric of business, science, and society.

It is vital to recognize that quantum computing represents more than just an advanced tool; it signifies a paradigm shift. Its unparalleled capacity to process and analyze data opens unprecedented opportunities across industries such as healthcare, finance, logistics, and artificial intelligence. However, akin to any powerful tool, it brings forth challenges—ethical, economic, and technological.

In navigating this quantum journey, collaboration among business leaders, policymakers, and technologists becomes imperative. Responsible utilization of the power of quantum mechanics necessitates investments in quantum research and education. This commitment is crucial not only for maintaining competitiveness but also to ensure that the benefits of this revolution are accessible and advantageous to all.

The onset of the quantum age is upon us, promising a world of limitless possibilities, intricate challenges, and the potential for progress. As we continue to

unravel the mysteries of the quantum realm and translate its principles into practical applications, it remains our collective responsibility to embark on this journey with vision, foresight, and an unwavering dedication to the greater good.

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## QUANTUM COMPUTING: TERMINOLOGY, APPLICATIONS, SECURITY AND BEYOND

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**Abstract.** *Quantum computing diverges from classical computing by leveraging principles rooted in quantum mechanics, making use of distinctive features such as entanglement and superposition. The pivotal distinction between a quantum computer and its classical counterpart lies in its remarkable capacity to process information at an exceptionally accelerated rate, a capability facilitated by the concept of quantum entanglement. Interest in the phenomenon of quantum entanglement has experienced exponential growth in recent years, with the past decade witnessing notable advancements in the practical implementation of quantum computation within the realm of quantum information. This investigation systematically curated secondary resources from various databases spanning nearly a century, employing specific keywords. The ensuing presentation encapsulates the fundamentals of quantum computing, its applications, and the pivotal role played by quantum entanglement. Consequently, this research contributes to a comprehensive understanding of quantum computing, its applications, and the significance of quantum entanglement in the field.*

**Keywords:** *quantum computing; quantum entanglement; quantum state; technological revolution; quantum industry applications.*

## 1. Introduction

In 1935, the Einstein-Podolsky-Rosen (EPR) Paradox, a thought experiment exploring a novel and intriguing phenomenon, was formulated by Einstein, Podolsky, and Rosen [1]. Following this, Schrödinger delved into the concept of quantum entanglement inspired by the EPR Paradox. Even Schrödinger found it challenging to comprehend how this concept violated the theory of relativity [2]. By 1964, Bell demonstrated that quantum entanglement contradicts classical mechanics' attributes, challenging realism, locality, and completeness, adhering exclusively to the principles of quantum mechanics [3]. Although the concept of quantum entanglement was established, its recognition remained limited until the exploration of its applications and understanding of its pivotal role.

Quantum entanglement stands as the cornerstone of quantum mechanics [4], presenting a peculiar physical phenomenon wherein the states of entangled objects automatically correlate, regardless of the spatial separation between them. This phenomenon has become a crucial asset in the realm of quantum information [5], playing a fundamental role in quantum information processing. Its applications extend to various domains, including quantum computing, quantum teleportation, and quantum cryptography. Furthermore, it serves as a key element in enabling quantum computers to surpass classical computers in computing capabilities [6]. The surge in interest in quantum entanglement over recent decades has paralleled significant strides in quantum computing [7].

In 2021, IBM unveiled the "Eagle" quantum computing chip, housing 127 quantum bits (qubits), marking a noteworthy advancement in quantum computing [8]. Subsequently, in 2022, IBM introduced 'Osprey,' featuring 433 qubits, setting a record for the highest number achieved in a quantum processor. Anticipated for the end of 2023, IBM's 'Condor' is poised to be the first quantum processor surpassing 1,000 qubits. A comprehensive grasp of the fundamentals of quantum computing and entanglement is imperative for navigating the evolving landscape of quantum technology. This paper seeks to provide a broad understanding of quantum computing, its applications, and the pivotal role of quantum entanglement in this context.

## 2. Quantum Computing

### 2.1. Quantum entanglement

Quantum entanglement is a phenomenon wherein the quantum states of multiple subsystems cannot be independently described, even when the distance between these

subsystems is considerable [9]. To simplify this concept, consider two coins, one labeled "head" and the other "tail" on both sides. Each coin is given to two individuals, Alice and Bob, who are separated by a significant distance—Alice on Earth and Bob on Mars. They are informed that the coin they possess must be either a "head" or a "tail." In this classical scenario, their coins are correlated and entangled. Let's assume both Alice and Bob reach their respective destinations. Upon observing her coin, if Alice discovers it to be a "head," she simultaneously knows that Bob's coin must be a "tail." This logical sequence contradicts classical mechanics and aligns with the principles of quantum mechanics.

A quantum bit, or qubit, serves as the fundamental unit for carrying information in quantum computing [10]. To simplify, in classical computing, a bit represents information as either 0 or 1. In contrast, a quantum computer utilizes qubits to represent information.

## 2.2. *Quantum computer vs classical computer*

The proposition of a quantum computer aims to simulate processes beyond the reach of classical computers [11,12], presenting an unparalleled paradigm for information processing [13]. Quantum computers leverage the collective attributes of quantum states, including superposition, interference, and entanglement, in accordance with the principles of quantum mechanics. This stands in stark contrast to classical computers, which adhere to the principles of classical physics.

While both classical and quantum computers can address some similar computational problems, the primary distinction lies in the time required to solve certain computational issues [12]. Notably, the incorporation of the quantum entanglement principle in quantum computers significantly amplifies processing speed [14]. As indicated by [4], augmenting the number of qubits or creating more extensive entangled states further enhances the processing speed of quantum computers. Numerous other distinctions between classical and quantum computers are outlined in Table 1 for clarity.

Table 1. The differences between classical and quantum computer.

CLASSICAL COMPUTER	QUANTUM COMPUTER
Governed by classical physics principles	Governed by quantum mechanics
Large scale integrated multi-purpose computer (CPU)	High speed parallel computer based on quantum mechanics
Boolean logic operations	Quantum gate operations or energy state manipulation
Gates run forward	Gates are reversible
Use bit to represent information	Use qubit or quantum bit to represent information
Information storage is bit based on voltage/charge	Qubit based on direction of an electron spin
Low rates of error	High rates of error
Operate at room temperature	Operate at extremely cold temperature
Minimal inherent noise	Extremely sensitive to noise
Circuit behavior is governed by classical physics	Circuit behavior is governed explicitly by quantum mechanics
No restriction on copying and measuring signals	Uncompromising restriction on copying and measuring signals

Quantum computers are rapidly advancing, gaining momentum over the years and posing a potential challenge to the continued dominance of classical computers, particularly in addressing problems with a vast number of variables and potential outcomes. Despite the potential threat to classical computing, this progress also brings about significant opportunities across various disciplines in the modern era.

### 2.3. Applications of quantum computing

Cloud-based quantum computing services have been introduced and applied in diverse fields, including education, research, and gaming. These services offer a pathway to quantum computing by providing a publicly accessible quantum computing platform in a cloud environment. This platform is available to users worldwide, allowing them to perform authentic quantum processing tasks [15]. For an overview of some existing cloud-based quantum computing platforms, refer to Table 2.

Table 2. The existing cloud-based quantum computing platforms.

COMPANY PRODUCT	SOURCE	DESCRIPTION
Forest (Rigetti Computing)	<a href="http://www.rigetti.com">www.rigetti.com</a>	A quantum programming toolkit
Microsoft Azure Quantum (Microsoft)	<a href="http://www.azure.microsoft.com">www.azure.microsoft.com</a>	A quantum system and toolkit for quantum computing
IBM Q Experience (IBM)	<a href="http://www.quantum-computing.ibm.com">www.quantum-computing.ibm.com</a>	A quantum system, simulators, and programming tools
Quantum Playground (Google)	<a href="http://www.quantumplayground.net">www.quantumplayground.net</a>	A quantum simulator and 3D quantum state visualization
Quantum Inspire (Qutech)	<a href="http://www.quantum-inspire.com">www.quantum-inspire.com</a>	A quantum computing platform provides a fully programmable 2-qubit electron spin quantum processor and a 5-qubit transmon processor
FORGE (QC WARE)	<a href="https://forge.qcware.com/">https://forge.qcware.com/</a>	provides access to D-Wave hardware as well as Google and IBM simulators
D-WAVE	<a href="https://www.dwavesys.com/">https://www.dwavesys.com/</a>	
Amazon Bracket (Amazon)	<a href="http://www.aws.amazon.com/braket">www.aws.amazon.com/braket</a>	A quantum simulator that can be run on different quantum hardware technologies
Xanadu Quantum Cloud (Xanadu)	<a href="http://www.xanadu.ai/cloud">www.xanadu.ai/cloud</a>	A photonic quantum computing platform

Quantum computing is poised to revolutionize numerous industries in the future, as predicted by IBM across three horizons in the industrial revolution [16]. The transformative potential of quantum computing technology extends across various sectors. In healthcare and life sciences, for instance, collaborations between oncologists, physicists, and computer scientists at the German Cancer Research Center aim to leverage quantum computing for classifying and selecting specific therapies from diverse datasets, potentially benefiting cancer patients [17]. Similarly, the renewable energy sector recognizes the importance of quantum computing in addressing critical challenges related to renewable energy problems [18]. The

multifaceted impact of quantum computing is indicative of its potential to bring about significant advancements in various industries.

#### 2.4. Data Security and Quantum Cryptography

Ensuring data security is imperative to safeguard critical information such as files, databases, accounts, and networks. In the contemporary digital technology era, effective data security is essential for both public and private sector organizations, given the potentially severe consequences of data breaches. The field of cybersecurity has gained increasing significance due to the growing reliance on computer systems and technological advancements. Over the years, cybersecurity has evolved alongside its counterpart, cyber threats, with continuous improvements implemented by experts. Cryptography serves as a crucial tool employed by cybersecurity experts to design algorithms and other measures aimed at protecting data.

Classical cryptography relies on computational mathematics, whereas quantum cryptography is rooted in the principles of physics, specifically following the laws of quantum mechanics, to secure the transmission of private information [19]. Table 3 outlines some key distinctions between classical and quantum cryptography.

Table 3. The differences between classical and quantum cryptography.

CLASSICAL CRYPTOGRAPHY	QUANTUM CRYPTOGRAPHY
Based on mathematical computation	Based on quantum mechanics
Widely used	Sophisticated
Digital signature is present	Digital signature is absent
Bit rate depends on computational power	Average bit rate is 1 Mbps
Deployed and tested	In initial stages, not fully tested
Low cost	High cost

Table 3 highlights several distinctions between classical and quantum cryptography. Classical cryptography relies on two primary methods—secret key (symmetric) cryptography and public key (asymmetric) cryptography. In contrast, quantum cryptography employs quantum key distribution (QKD), utilizing a series of photons and a qubit sequence to transmit the code between two ends. By comparing measurements of the properties of these photons, the communicating ends can establish a secure key for encrypting and decrypting information. Any disruption to the qubit sequence is detectable by both the sender and receiver, prompting the generation of a new bit sequence.



The ascent of quantum computing introduces vulnerabilities in classical encryption, but it also ushers in a new era of quantum-enhanced security protocols. Striking a balance between emerging threats and opportunities, the cryptographic landscape is on the brink of profound transformations in the quantum age. Close collaboration among businesses, policymakers, and technologists is paramount to ensuring the security of our digital world amidst the advancements in quantum technology.

### 3. Limitations of the Research

The rapid advancement in the field of quantum computing may have led to substantial developments in quantum hardware, algorithms, and applications that are not comprehensively covered in this paper. Quantum mechanics is a complex and abstract field. Conveying quantum concepts and their business implications in a concise and accessible manner poses a challenge. Some sections of the article may be demanding for readers without a background in quantum physics.

**Limited Inclusion of Specific Business Cases:** While the article explores potential applications of quantum computing across various industries, it may not delve into specific business cases or provide in-depth examples. The adoption of quantum technologies by businesses is expected to vary widely.

**Space Constraints:** Given the complexity and breadth of the topic, the paper may not cover every aspect of quantum computing's impact on society. Certain subtopics and nuances may be omitted or briefly summarized due to space constraints.

These limitations underscore the dynamic and evolving nature of the quantum computing field, the challenges in communicating complex concepts, and the speculative nature of predictions. Readers are encouraged to seek additional sources and updates to supplement their understanding of the rapidly advancing field of quantum computing.

### 4. Conclusions

In summary, this review has delved into the realm of quantum computing, exploring its applications and highlighting the pivotal role of quantum entanglement in enhancing processing speeds. The distinctions between quantum and classical computers were examined, with a specific emphasis on the integration of quantum entanglement as a key factor in the superior processing capabilities of quantum computers. The discussion also touched upon current applications of quantum computing.

Despite being in the early stages of development for commercial use, and acknowledging its existing limitations, quantum computing stands poised to bring

about transformative changes in the technological landscape. The potential impact of quantum computing on the broader technological world is substantial, making it a field of great promise and anticipation.

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## BANK TIZIMLARIDA AXBOROT XAVFSIZLIGINI BOSHQARISHNING TEXNIK-TASHKILY ASOSLARI

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**Annottatsiya.** *Internet va kompyuter texnologiyalarining takomillashuvi xar bir sohada bo'lgani kabi, moliya va bank sohasida xam ko'plab yangiliklarni olib keldi. Biroq, texnologik rivojlanishlar ko'plab afzalliklar bilan bir qatorda xavfsizlik nuqtai nazaridan ko'plab muammolarni xam keltirib chiqarmoqda. Korxonalar va tashkilotlarda ularga qarshi qaratilgan ichki va tashqi hujumlar global miqyosida olib qaraydigan bo'lsak, yiliga trillonlab dollar yo'qotilishlarga olib kelmoqda. Shu sababli, bank tizimlarida axborot xavfsizligini tartibga soluvchi tizim zarurligi qat'iy belgilanmoqda. Ushbu maqolada axborot aktivlari va bank tizimlari uchun potensial tahdidlar, va axborot xavfsizligini boshqarish bo'yicha keng tarqalgan tizimlar, standartlar va eng yaxshi ishlanmalar keltirib o'tiladi.*

**Kalit so'zlar:** *Axborot xavfsizligini boshqarish, bank korporativ boshqaruvi, axborot xavfsizligini boshqarish asoslari.*

### **Kirish.**

So'nggi o'n yilliklarda axborot texnologiyalarining jadal rivojlanishi natijasida, kompyuterlar hayotimizning barcha jabhalarida xususan, biznes, hukumat, ta'lim, moliya, aerokosmik tadqiqotlar, sog'liqni saqlash sohalaridan tortib mudofaa tizimlarigacha keng qo'llanilmoqda. Jamiyatning axborot texnologiyalariga qaramligi ortib borayotganligi sababli, kiber jinoyatchilik tahdidi ham ortib bormoqda. Xavfsizlikga tahdidlar va zararli dasturlar global kompaniyalar va tashkilotlarga yiliga trillonlab dollar zararlar keltirmoqda.

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Fishing xostingi - kiberjinoyatchilarga soxta veb-saytlarni boshqarish imkonini beruvchi xavfsiz va bardoshli infratuzilma Ushbu saytlar qonuniy platformalarning

sinchkovlik bilan ishlab chiqilgan nusxalari bo'lib, shubhasiz foydalanuvchilarni parollar yoki moliyaviy ma'lumotlar kabi o'ta shaxsiy ma'lumotlarni almashish uchun aldashga qaratilgan faoliyat. Jinoiy faoliyat uchun o'q o'tkazmaydigan markazni taqdim etgan holda, fishing hosting muvaffaqiyatli fishing hujumlarini osonlashtirishda muhim rol o'ynaydi.[1]

Axborot tizimlari bugungi kunda butun dunyoda zamonaviy bank faoliyatining yuragi hisoblanib, axborot insayderlar<sup>1</sup>, begonalar va raqobatchilardan himoyalangan eng qimmatli aktivga aylandi. Mijozlar maxfiylik va shaxsiy ma'lumotlarning daxlsizligiga alohida urg'u berishadi. Biznes hamkorlar, ta'minotchilar va sotuvchilar o'zaro aloqada ma'lumotlarning ishonchliligi va xavfsizligini eng yuqori talab deb hisoblashadi. Banklarning muvaffaqiyatlari yangiliklarni o'zlashtirishi, yangi imkoniyatlar taqdim etishi, qulay va xavfsiz xizmatlarini taqdim etish qobiliyatiga bog'liq. Axborot xavfsizligini taminlash bozor ulushini va foydani oshiradi. Banklar xodimlar va mijozlar ma'lumotlarning xavfsizligiga javobgar bo'ladi. Shu sababli, banklar tarmoq orqali sodir etilgan firibgarlik faoliyati uchun ham javobgar bo'lishlari kerak. Banklar aksar hollarda mijozlarga yo'qotishlarni qoplashlari kerak, garchi mijoz o'z hisob ma'lumotlarini o'zi buzgan bo'lsa ham. Bugungi kunga kelib ma'lumotlar xavfsizlikni boshqarish bo'yicha ba'zi tizimlar mavjud bo'lib, ular Yevropa ittifoqi mamlakatlari va Amerika Qo'shma Shtatlari kabi rivojlangan mamlakatlarda ishlab chiqilgan va keng qo'llanilgan, ammo ularning har biri o'zining afzalliklari va zaif tomonlariga ega (Kengash III, 2006). Odatda, u tashkilot tuzilmasi atrof-muhitga mos ravishda moslashtirilishi kerak (Axmad Syaxroz, 2003). Shunday qilib, bu maqola ushbu tadqiqot bo'shlig'ini to'ldirishga harakat qiladi.

Maqola beshta bo'limga bo'lingan. Birinchi bo'lim o'rganish va tadqiqot jarayonini tushuntiradi. Ikkinchi bo'limda bank sohasida axborot xavfsizligini boshqarish bo'yicha adabiyotlar tahlili tasvirlangan. Uchinchi bo'limda axborot xavfsizligini boshqarish bo'yicha tez-tez qo'llaniladigan tizimlar va ularning farqlari muhokama qilinadi. To'rtinchi bo'limda bank tizimi uchun taklif qilingan ISG (Information Security Governance) asoslari muhokama qilinadi. Nihoyat, maqola xulosa bilan yakunlanadi.

Bank va moliya institutlari uchun eng keng tarqalgan texnologik xavf yoki tahdid bu **fishing hujumi**dir (Tubin, 2005). Odatiy fishing hujumi ijtimoiy muhandislikka asoslangan bo'lib, kompyuter jinoyatchilari mijozlar va xodimlarni o'z akkauntlarining foydalanuvchi nomlari va parollari kabi maxfiy ma'lumotlardan foydalanish uchun ishlatadigan taktikadir. Ushbu maxfiy ma'lumotlar bilan firibgarlar tarmoqlarga kirib, mablag'larni o'tkazib yuborishi va hisoblarni egallashi mumkin. Hujumning boshqa

shakllari, masalan, josuslik dasturlari, troyan otlari<sup>2</sup> va keylogger<sup>3</sup>lar, foydalanuvchining turli xil ma'lumotlarini yig'ish maqsadida ishlab chiqilgan zararli dasturlardir. Bunda foydalanuvchi o'zi bilmagan holda yuklab olgan dastur, jinoyatchining qarmog'iga tushishga olib kelishi mumkin. Bu esa ko'proq uchraydigan fishing hujumlari bilan bog'liq. Hisobni ko'zdan kechirish hisobni egallab olishdan ancha shubxali harakatdir. 2007-yildagi yana bir voqeada Shimoliy Karolina politsiyasi uchta kiber o'g'rini shahar Milliy bankidagi shahar bank hisob raqamidan 450 000 AQSh dollarini o'g'irlaganlikda aybladi. Gumon qilinayotgan o'g'rilar shaharning bank hisob raqamiga kirish va pul o'tkazmalarini amalga oshirish uchun haqiqiy identifikatsiya ma'lumotlaridan foydalangan. Voqea bo'yicha sud-tibbiyot ekspertizasi tekshiruvi shahar bank hisob raqami identifikatsiya ma'lumotlari kompaniya foydalanuvchidagi ishchi noutbukda o'rnatilgan josuslik dasturlari orqali o'g'irlanganligini aniqladi (Vijayan, 2010). Nyu-Jersi shtatida bank xodimlari tomonidan 500 000 ta bank hisob raqamlari va shaxsiy ma'lumotlarni o'g'irlash bo'yicha jinoyat ishi ochildi. Bu ish keng qamrovli sxema bo'lib, jinoiy guruh bu ma'lumotlarni kollektorlarga sotish niyatida bo'lgan (MSNBC, 2010).

### **Bank ishida axborot xavfsizligini boshqarish**

Adabiyotlarda axborot xavfsizligini boshqarish bo'yicha bir nechta ta'riflar mavjud, ammo akademiklar va tadqiqotchilar kelishilgan holatda bir xil ta'riflar berishmagan. Moulton and Cole (2003) "Axborot xavfsizligini boshqarish - axborot va uni qo'llab-quvvatlovchi jarayonlar va tizimlarning maxfiylik, yaxlitligi va mavjudligi bilan bog'liq xavflarni boshqarish uchun nazorat muhitini yaratish va qo'llab-quvvatlashdir", deb ta'riflagan. Xarris (2006) "Axborot xavfsizligini boshqarish barcha vositalar, xodimlar va biznes jarayonlari xavfsizligini ta'minlash uchun tashkilotning o'ziga xos ehtiyojlari", deb xulosa qildi. U tashkiliy tuzilmani, boshqaruv va mas'uliyatni, samaradorlikni, belgilangan vazifalarni va nazorat mexanizmlarini talab qiladi. IT boshqaruv instituti (2006) xulosasiga ko'ra, "Axborot xavfsizligini boshqarish - strategik yo'nalishni ta'minlash, xavflarni to'g'ri boshqarish va korxonalar resurslaridan mas'uliyat bilan foydalanishni tekshirish maqsadida boshqaruv kengashi tomonidan amalga oshiriladigan mas'uliyat va amaliyotlar majmuidir" deya ma'lumot bergan. (Qingxiong Ma, 2004) Axborot xavfsizligini boshqarish atamasining ushbu ta'rifi tadqiqot uchun kengroq va mos bo'lganligi uchun ushbu maqolada havola sifatida foydalaniladi.

1-"Insayder" - bu ochiq aksiyadorlik jamiyatining direktori yoki yuqori mansabdor shaxs[2].

2-Troyan oti virusi - bu qonuniy dastur sifatida yashiringan kompyuterga yuklab olinadigan zararli dastur.[3]

3-Keylogger-klaviatura bosish yozuvchisi yoki klaviaturani yozib olish deb ataladigan keylogger ma'lum bir kompyuterda har bir tugmani kuzatish va yozib olish uchun ishlatiladigan kuzatuv texnologiyasining bir turidir.[4]

Axborot xavfsizligini boshqarishni amalga oshirishning asosiy maqsadi tashkilotning eng qimmatli aktivini himoya qilishdir.

Kompaniyaning axborot aktivlarini aniqlash kompaniyalarda axborot xavfsizligini samarali amalga oshirish uchun muhim omilidir (IT boshqaruv instituti, 2001; Deloitte Touche Tohmatsu, 2003).

Kurt va Tentra (2004) bank sohasida himoya qilinishi kerak bo'lgan axborot aktivlarini to'rtta qismga ajratadilar:

- Ichki ma'lumotlar: bozorda noqonuniy ustunlik beruvchi va ichki operatsiyalarini boshqarish uchun mos bo'lgan ma'lumotlar (masalan: direktorlar kengashining yig'ilish bayonnomalari, kapital bozori ma'lumotlari va kompaniyaning ichki moliyaviy ma'lumotlari).
- Mijoz haqida ma'lumot: mijozning shaxsini aniqlashga imkon beruvchi ma'lumotlar (masalan: ismi, manzili, tug'ilgan sanasi), shu jumladan uning bank ma'lumotlari (hisob raqami, depozit raqami).
- Mijozning hisob raqam ma'lumotlari: Iqtisodiy benefitsiar, raqamlangan yoki xayoliy hisob egalari ma'lumotlari.
- Balans haqida ma'lumot: Bank va mijozlar o'rtasidagi tijorat da'volarini ifodalovchi ma'lumotlar yoki biznes hamkorlar to'g'risidagi ma'lumotlar (masalan: bank hisobi, bank depoziti, nostro hisob raqamidagi ma'lumotlar).
- Tranzaksiyalar haqida ma'lumot: Bank, mijozlar yoki biznes hamkorlar o'rtasidagi tijorat da'volarini o'zgarishiga olib keladigan ma'lumotlar (masalan: hisob raqamlar va depozitlar harakati, savdodagi hodisalari).

Axborot xavfsizligini boshqarish amaliyotining yo'qligi sababli bank tizimiga birinchi navbatdagi tahdidlarni quyidagicha tasniflash mumkin:

- 1) Binolarni, infratuzilmani va ma'lumotlarni tabiiy yoki qasddan jismoniy yo'q qilish. Favqulotda vaziyatga tayyorgarlikning yo'qligi, bankning yopilishiga olib kelishi mumkin (Kurt va Tentra, 2004).
- 2) Asbob uskunalarning yaroqliligi, xodimlarning malakasi, ish yuki, ish odob-axloq normalari va kompaniya qadriyatlarini kabi ko'plab omillarga e'tibor bermaslik tufayli tizimlar va ma'lumotlarning qasddan yo'q qilinishi yoki shikastlanishiga sabab bo'lishi (Kurt va Tentra, 2004; Siregar, 2008).
- 3) Bank xodimlari yoki agentlari tomonidan maxfiy ma'lumotlar bilan ishlashda ishonchni suiste'mol qilish: masalan, mijoz ma'lumotlari yoki biznes sirlarini o'zlashtirish, bank va mijozlar to'g'risidagi maxfiy ma'lumotlarni soxtalashtirish yo'li bilan zarar yetkazilishi (Kurt va Tentra, 2004; MSNBC, 2010).
- 4) Bandlik siyosati, biznes-jarayonlari, tizim ruxsatnomalari, ijtimoiy nazoratning yo'qligi, bitim yoki valyuta kursi to'g'risidagi ma'lumotlarni o'zlashtirish yoki

soxtalashtirish, bank xodimlari yoki agentlarini bank yoki mijozlar hisobidan boyishi, kompaniya qoidalariga bo'ysunmaslik (Kurt va Tentra, 2004; Siregar, 2008; MSNBC, 2010).

5) Bankning axborot tizimiga xakerlar va viruslar kabi tashqi hujumlar axborotning yo'qolishi, ma'lumotlarni soxtalashtirilishi, ma'lumotlarning maxfiyligi buzilishi, biznes jarayonlarining buzilishi; (Kurt va Tentra, 2004; Vijayan, 2010).

6) Ma'lumotlarni, telekommunikatsiya tarmoqlari faoliyatini, o'g'irlangan asbob-uskunalarini tahlil qilish yo'li bilan xorijiy razvedka xizmatlari tomonidan ma'lumotlarning tizimli to'planishi va bunday harakatlar mijoz ma'lumotlarining daxlsizligiga tahdid solishi (Kurt va Tentra, 2004; Biznesni boshqarish, 2010).

7) Ijtimoiy muhandislik yondashuvi tizimda jabrlanuvchining shaxsini tasdiqlovchi ma'lumotlarni berish yoki tizim haqida ma'lumot olish, shu jumladan parollarni o'zgartirish kabi omillar bankning ma'suliyatiga misol bo'la oladi. (Biznesni boshqarish, 2010).

Axborot aktivlari va bank faoliyatidagi potentsial tahdidlarni tasniflagandan so'ng, keyingi bo'limda axborot xavfsizligini boshqarish bo'yicha tez-tez qo'llaniladigan tizimlar va standartlar, eng yaxshi amaliyot va yo'riqnomalar muhokama qilinadi.

### **Axborot doirasi xavfsizlik boshqaruvi**

Ma'lumot uchun, Rastogi va Von Solms (2006) axborot xavfsizligini boshqarish tizimlari, munosabatlar va jarayonlardan iborat ekanligini ta'riflaydi; axborot xavfsizligini boshqarishni amalga oshirish uchun asoslarni ta'minlovchi yo'riqnomalar mavjud. Asosan axborot xavfsizligini boshqarish bo'yicha mas'uliyatni tashkiliy ierarxiya bilan taqqoslash orqali amalga oshiriladi. Holmquist (2008) ma'lumotlar xavfsizligi standarti bank sanoati uchun qo'llaniladigan axborot xavfsizligini boshqarish tizimlarining bir nechta tanlovini taklif qiladi. Ushbu taklifga asoslanib, biz yuqorida aytib o'tilgan axborot xavfsizligini boshqarish tizimini batafsil ko'rib chiqamiz. Axborot xavfsizligini boshqarishda keng qo'llaniladigan turli xil tizimlar mavjud, bular:

#### **FFIEC**

Federal Moliya Institutlarini Ekspertiza Kengashi (FFIEC-the Federal Financial Institutions Examination council) 1979 yil Moliyaviy institutlarni tartibga solish va foiz stavkalarini nazorat qilish to'g'risidagi (FIRA-Financial Institutions Regulatory and Interest Rate Control Act), 95-630-sonli davlat qonunining X sarlavhasiga muvofiq tashkil etilgan.

1-Xayoliy hisoblar-pulni to'g'ri va samarali ishlatish uchun o'tkaziladiga mashg'ulot qatnashchilari.[5]

2-Nostro hisobvaraqlar deganda bankning boshqa bankda chet el valyutasida saqlaydigan hisob qaydnomasi tushuniladi.[6]



1989-yilda Moliya institutlarini isloh qilish, qayta tiklash va qo‘llash to‘g‘risidagi XI sarlavhasida Imtihon Kengashi tarkibida Baholash quyi qo‘mitasini (ASC-The Appraisal Subcommittee) tashkil etdi.

Federal rezerv boshqaruv kengashi (FRB-Federal Reserve System), Federal Depozitlarni Sug‘urtalash Korporatsiyasi (FDIC- Federal Deposit Insurance Corporation), Milliy moliya institutlari tomonidan moliya institutlarini federal ekspertizadan o‘tkazish uchun yagona tamoyillar, standartlar va hisobot shakllarini belgilash vakolatiga ega bo‘lgan rasmiy idoralararo organdir. Davlat va federal nazorat organlari tomonidan yagona imtihon tamoyillari va standartlarini qo‘llashni rag‘batlantirish uchun Kengash nizom talablariga muvofiq, davlat nazorati organlarining besh nafar vakilidan iborat davlat aloqa qo‘mitasini tashkil etadi.

Kengash federal nazorat ostidagi moliya institutlari, ularning xolding kompaniyalari va ushbu institutlarning moliyaviy bo‘lmagan filiallari va xolding kompaniyalari uchun yagona hisobot tizimlarini ishlab chiqishga javobgardir. Kengashda vakili bo‘lgan besh federal a‘zo agentlik tomonidan ishlaydigan imtihonchilar uchun seminar o‘tkazadi va bu seminar hisobotlarini moliya institutlarini nazorat qiluvchi davlat idoralari xodimlariga taqdim etadi. [7]

Bunda quyidagi ISG komponentalari kiritilgan:

- Axborot xavfsizligi strategiyasi;
- Yetakchilik va homiylik;
- Investitsiyalar bo‘yicha xavfsizlik daromadi;
- Xavfsizlik ko‘rsatkichi va o‘lchovi;
- Xavfsizlik dasturi tashkiloti;
- Xavfsizlik siyosati tartibi, eng yaxshi amaliyot standartlari va ko‘rsatmalari;
- Muvofiqlik;
- Monitoring va audit;
- Huquqiy tartibga soluvchi;
- Foydalanuvchi habardorligi, ta’lim va trening;
- Standartga muvofiq sertifikatlash;
- Risklarni boshqarish va baholash;
- Eng yaxshi amaliyotlarni ko‘rib chiqish;
- Aktivlar boshqaruvi;
- Jismoniy va ekologik nazorat qilish;
- Texnik operatsiyalar;
- Tizimni sotib olish, ishlab chiqish va texnik xizmat ko‘rsatish;
- Biznesning uzluksizligini rejalashtirish;

- Favqulotta vaziyatlarni tiklashni rejalashtirish
- Foydalanuvchi boshqaruvi
- Uzluksiz xizmat ko'rsatishni ta'minlash

## COBIT

Axborot va tegishli texnologiyalarni boshqarish maqsadlari (COBIT-Control Objectives for Information and related Technology) axborot tizimlari auditi va nazorati assotsiatsiyasi va jamg'armasi tomonidan boshqaruv va biznes jarayonlari egalariga IT bilan bog'liq xavflarni tushunish va boshqarishga yordam beradigan IT boshqaruv modelini taqdim etish uchun ishlab chiqilgan. COBIT to'rtta asosiy komponentdan iborat: rejalashtirish va tashkil etish, sotib olish va amalga oshirish, yetkazib berish va qo'llab-quvvatlash va nihoyat monitoring va baholash (IT boshqaruv instituti, 2007).[8]

1998-yilda ISACA tomonidan IT boshqaruvi va tegishli mavzular bo'yicha asl tadqiqotlarga e'tibor qaratish maqsadida tashkil etilgan IT boshqaruv instituti (ITGI) IT boshqaruvi uchun asos bo'lgan COBIT (ITGI, 2007) ni ishlab chiqdi. COBIT to'rt domenga guruhlangan 34 ta jarayon to'plamini taqdim etadi. Ushbu jarayonlarda har biri uchun nazorat maqsadlari, ko'rsatkichlari, yetuklik modellari va boshqa boshqaruv yo'riqnomalari batafsil bayon qilinadi. COBIT asosan IT boshqaruviga yo'naltirilgan bo'lsa-da, uning to'rtta jarayoni ko'proq ISG bilan bog'liq, ya'ni:

- PO6 - Boshqaruv maqsadlari va yo'nalishlarini bildiradi.
- PO9 - AT risklarini baholash va boshqarish
- DS4 - uzluksiz xizmat ko'rsatishni ta'minlash
- DS5 - tizim xavfsizligini ta'minlash

COBIT atrofida uni asosiy doiradan tashqari to'ldiradigan mahsulotlar guruhi mavjud (masalan, amalga oshirish bo'yicha qo'llanma, kafolat bo'yicha qo'llanma, IT investitsiyalarining qiymati va boshqalar).

- (ITGI, 2006b) ITGI ISG nima ekanligini va nima uchun muhimligini tavsiflaydi. Direktorlar kengashi va yuqori lavozimli rahbarlar nima qilishi kerakligi, uni qanday amalga oshirish mumkinligi va natijada nimaga erishish mumkinligi haqida batafsil ma'lumot beradi.
- Taklif (ITGI, 2008b) avvalgisida keltirilgan sabablarga asoslangan. U axborot xavfsizligi maqsadlari haqida, ularga erishish uchun ishlatilishi mumkin bo'lgan strategiyalar va harakatlar rejalari haqida batafsilroq ma'lumot beradi. Bundan tashqari, axborot xavfsizligini kuzatish va o'lchash uchun muhim muvaffaqiyat omillari va ko'rsatkichlari kiritilgan bo'lib, ushbu qo'llanma yuqorida aytib o'tilganidan pastroq boshqaruv darajasiga qaratilganligini ko'rsatadi.[14]

**ISO 27002.** Xalqaro standartlashtirish tashkiloti (ISO-the International Organization for Standardization) axborot xavfsizligini boshqarish tizimlari va amaliyotlarini o'z ichiga olgan keng ko'lamli mavzularda xalqaro standartlarning dunyodagi eng yirik ishlab chiquvchisi va nashriyotchisi. ISO 27002 (2006) standarti, rasmiy ravishda ISO 17799 (2005) standarti, axborot xavfsizligi amaliyoti uchun sanoat standarti kodidir (ISO, 2009). IT 11 ta boshqaruv mexanizmlarini va 130 ta xavfsizlik nazoratini belgilaydi. Standart tashkilotida axborot xavfsizligini boshqarishni boshlash, joriy etish, qo'llab-quvvatlash va takomillashtirish bo'yicha ko'rsatmalar va umumiy tamoyillarni belgilaydi (ISO, 2006) [9].

**PCI.** (PCI Data Security Standard-PCI DSS), to'lov ma'lumotlari xavfsizligini oshirish uchun keng qamrovli talablar to'plami. PCI Xavfsizlik Standartlari Kengashining asoschi to'lov brendlari, jumladan American Express, Discover Financial Services, JCB International, MasterCard Worldwide va Visa tomonidan ishlab chiqilgan. PCI DSS xavfsizlikni boshqarish, siyosatlar, protseduralar, tarmoq arxitekturasi, dasturiy ta'minot loyihasi va boshqa muhim himoya choralariga qo'yiladigan talablarni o'z ichiga olgan ko'p qirrali xavfsizlik standartidir (PCI, 2010).[10]

**CGTF.** Korporativ boshqaruv bo'yicha ishchi guruhi (CGTF-the Corporate Governance Task Force) maqsadli standartlarga asoslangan, keng qamrovli va hamkorlikda ishlab chiqilgan tashkilotlarga yordam berish uchun ISG tuzilmasiga asos soldi. Ushbu yo'nalish keng miqyosda moslashtirilishi mumkin bo'lgan turli tashkilotlar, shuningdek ta'lim va notijorat muassasalarida ham qo'llashi mumkin. Bundan foydalanishni osonlashtirish uchun ushbu yo'nalishda ISG ishchi guruh ishlab chiqilgan bo'lib, boshqa qo'shimcha vositalar funktsiyalari va majburiyatlari bo'yicha qo'llanma va axborot xavfsizligini boshqarishni baholash vositasi sifatida tuzilgan. (Corporate Governance Task Force, 2004). [11]

**IISA.** Axborot tizimlari xavfsizligi assotsiatsiyasi (ISSA- Information Systems Security Association) Umumiy qabul qilingan axborot xavfsizligi tamoyillarini (GAISP- The Generally Accepted Information Security Principles) nashr etadi. ISSAning asosiy maqsadi kengash zalidan tortib to zalgacha axborot xavfsizligi bo'yicha mutaxassislar maxfiyligi, axborotlar yaxlitligi va tashkiliy ma'lumotlar mavjudligini targ'ib qilishdir. ISSA o'zaro hamkorlikni osonlashtiradi va yanada muvaffaqiyat yaratish uchun ta'lim, global axborot yaratish uchun tizimlar xavfsizligi va mutaxassislar jalb qiladi.[12]

**CISWG.** Korporativ axborot xavfsizligi ishchi guruhi (CISWG- The Corporate Information Security Working Group) rivojlantirish bo'yicha ko'rsatma,

axborot xavfsizligi ko'rsatkichlari, yaratilgan axborot xavfsizligining yakuniy xulosasi va boshqaruv ma'lumotnomalarini ishlab chiqadi. CISWG – Adam H. Putnam tomonidan tuzilgan dasturiy texnologiya, axborot siyosati, hukumatlararo munosabatlar, aholini ro'yxatga olish, hukumatni isloh qilish kabi masalalari bo'yicha ishlarni AQSh Kongressi Vakillar Palatasi quyi komissiya raisi amlaga oshiradi.[13]

**BSA.** Biznes dasturiy ittifoqi (BSA-Business Software Alliance) axborot xavfsizligini boshqarish bo'yicha ishchi guruhini tuzdi. Uning maqsadi tashkilotlar tushunishi va amalga oshirishi mumkin bo'lgan shartlarga javob berishdir. Ushbu ishchi guruh boshqa hisobotlarda, qonun hujjatlarida va yo'riqnomalarda mavjud bo'lgan ko'plab g'oyalar va tushunchalarni ikkiga ajratib davom ettirishdi.

Birinchi, (BSA, 2003) mualliflar IT xavfsizligi atrofida allaqachon qonunchilik va tartibga solish rejimi mavjudligini va kompaniyalar xavfsizligini texnologik muammo sifatida ko'rib chiqishni to'xtatishlari va uni korporativ boshqaruv muammosi sifatida ko'rib chiqishlari kerakligini ta'kidlaydilar. Ular ISO/IEC 17799 (keyinchalik ISO/IEC 27000 oilasiga kiritilgan) kabi ilg'or amaliyotlar va standart protseduralarni qabul qilishni tavsiya qiladilar va tashkilotlar qabul qilishi mumkin bo'lgan ISG tizimi yo'qligini tan oladilar. Ishchi guruh har bir boshqaruv roli o'z vazifalari nimadan iboratligini, o'z maqsadlariga qanday erishishni va bajarilgan faoliyatni qanday tahlil qilish va tekshirishni biladigan tizimni taklif qiladi.

Ikkinchi, taklif (Korporativ boshqaruv bo'yicha ishchi guruhi, 2004 yil) xavfsizlik bilan bog'liq bo'lgan har bir manfaatdor tomonning funksiyalari va mas'uliyatini batafsil tavsiflovchi ilgari kiritilgan doirani kengaytiradi. Ushbu asosni amalga oshirish uchun mualliflar besh bosqichga asoslangan IDEAL modelini taklif qilishadi: boshlash, tashxis qo'yish, o'rnatish, harakat qilish va o'rganish. Nihoyat, tegishli ishlarni baholash, tekshirish va muvofiqlik uchun vositalar taqdim etishadi.

**ISACA.** Axborot tizimlarini tekshirish va nazorat qilish assotsiatsiyasi (ISACA- Information Systems Audit and Control Association) (ISACA, 2009), korporatsiyalarda axborot xavfsizligini hal qilish uchun umumiy modelni taklif qiladi. U model tizimlar nazariyasiga asoslanadi va shuning uchun to'liq funktsiya birligi sifatida yaxlit ko'rib chiqiladigan kirish va chiqishlarga ega bo'lgan jarayonlardan iborat. Model tetraedr tuzilishiga ega bo'lib, uning tepalarida joylashgan to'rtta element va ular orasidagi elementlarni bir-biriga bog'laydigan o'zaro bog'liqlik oltita dinamik mavjud.[14],[16] To'rt element quyidagilardir:

- Tashkilot loyihasi va strategiyasi
- Odamlar
- Jarayon
- Texnologiya

O‘zaro bog‘liqlik oltita dinamik:

- Boshqarish
- Madaniyat
- Yordam berish va qo‘llab-quvvatlash
- Paydo bo‘lish
- Inson omillari
- Arxitektura

**NIST.** AQSh Savdo Departamentiga qarashli Milliy Standartlar va Texnologiyalar Instituti (NIST- The National Institute of Standards and Technology) axborot xavfsizligi bilan bog‘liq ko‘plab ko‘rsatmalarni nashr etdi. Qo‘llanmaning (Bowen va boshqalar, 2006) ikkinchi bobi ISGga bag‘ishlangan. Ushbu kitobga ko‘ra, ISGning beshta komponenti mavjud:

- Strategik rejalashtirish
- Tashkiliy tuzilma
- Rol va mas‘uliyat
- Korxonalar arxitekturasi
- Siyosat va yo‘riqnomalar

Boshqaruvning ushbu tarkibiy qismlarining barchasi doimiy monitoring orqali xavfsizlikni joriy tatbiq etish bilan bog‘langan bo‘lishi kerak. Ushbu natijaga erishish va monitoringni amalga oshirish uchun faoliyat va yordamchi jarayonlar tavsifi taklif etiladi. Boshqa NIST nashrida (Bowen va boshq., 2007) asosiy e‘tibor Axborot xavfsizligi dasturini ishlab chiqishga qaratilgan. Ushbu tadbirlar orasida ISG alohida ta‘kidlangan. Shuningdek, AQSh nuqtai nazaridan xavfsizlik dasturlariga tegishli qonunlar va qoidalar qayta tiklandi.[17]

Biznesga yo‘naltirilgan axborot xavfsizligini loyihalash faqat biznes strategiyasiga mos keladigan axborot strategiyasidan kelib chiqishi mumkin. Korporativ axborot xavfsizligini boshqarish IT boshqaruvi va risklarni boshqarish bilan bir qatorda korporativ boshqaruv doirasida o‘z o‘rniga ega bo‘lishi kerak. Hoekstra, Conradie va Spafford ham korporativ boshqaruvda ishlab chiqilgan va keng qo‘llanilgan ba‘zi qoidalar mavjudligiga rozi bo‘lishdi, ammo ularning har biri o‘zining kuchli va zaif tomonlariga ega. Shuning uchun, xususiylashtirish tashkilot muhitiga mos ravishda bo‘lishi kerak.

### **Bank tizimi uchun taklif etilayotgan ISG asosining dastlabki loyihasi**

Taklif etilayotgan ISG asosining dastlabki loyihasi bank sektori tomonidan adabiyotlarni ko‘rib chiqishda aniqlangan tahdidlardan bank axborot aktivlarini himoya qilish uchun yo‘riqnomalarni ishlab chiqish va nazoratni amalga oshirish orqali axborot xavfsizligini boshqarish uchun boshlang‘ich nuqta sifatida ishlatilishi mumkin.

Ushbu qoida muhokama qilingan va adabiyotlarni ko'rib chiqishdan olingan barcha mavjud qoida komponentlarining integratsiyasidir. Shunga qaramay, tavsiya etilgan asos hali ham axborot xavfsizligini boshqarish dasturiga umumiy yondashuv bo'lib, u mutaxassislar tomonidan ko'rib chiqilishi va haqiqiy bank muhitida sinovdan o'tkazilishi kerak. Har bir tashkilotning ish uslubi har xil va turli milliy va xalqaro qonunchilik va qoidalarga bo'ysunishi sababli, qo'shimcha komponentlar talab qilinishi mumkin, boshqalari esa tegishli bo'lmasligi mumkin. Rastogi va Von Solm tomonidan berilgan axborot xavfsizligini boshqarishning ta'rifiga asoslanib, axborot xavfsizligini boshqarish tizimining dastlabki loyihasi axborot xavfsizligi tarkibiy qismlarini strategik daraja, taktik va operatsion daraja mavjud. Axborot xavfsizligi komponentlarining har bir darajasi va ularning tarkibi quyidagicha muhokama qilinadi:

### **Strategik daraja**

Strategik daraja direktorlar kengashi va yuqori boshqaruvni anglatadi. Adabiyotda ko'rib chiqilgan ko'pgina asoslar, standartlar va amaliyotlar ushbu darajada taklif qilinadi, yetakchilik va boshqaruv komponenti muvaffaqiyatli axborot xavfsizligi dasturini hal qilish uchun axborot xavfsizligi strategiyasini tuzishni o'z ichiga oladi. Axborot xavfsizligi strategiyasi tashkilot maqsadlariga ham qisqa, ham uzoq muddatda erishishni ta'minlash uchun tashkiliy va IT strategiyasi bilan bog'langan bo'lishi kerak. Bu daraja axborot xavfsizligi dasturi ijrosi uchun hamkorlikni, shuningdek, boshqaruv kengashi va rahbariyatning axborot aktivlarini himoya qilish majburiyatini talab qiladi. Buning sababi, axborot xavfsizligini boshqarish korporativ boshqaruvning ajralmas qismi sifatida qabul qilingan. Korporativ boshqaruv, boshqaruv kengashining yetakchilik sa'y-harakatlari orqali tashkilotni samarali boshqarish va nazorat qilish uchun javobgarligi bilan bog'liq. Bu IT boshqaruvi bilan bog'liq bo'lib, tashkilot o'z texnologiyasidan foydalanishni qanday boshqarishi va nazorat qilishi hamda ma'lumotlarini himoya qilishini belgilaydigan siyosat va tartiblar haqida qayg'uradi. Ushbu darajada, joriy qoidalar axborot xavfsizligini boshqarish dasturining samaradorligini aniqlash uchun o'lchov tushunchalarini o'z ichiga oladi. Ko'pgina tashkilotlar o'zlarining axborot xavfsizligi dasturlarining umumiy samaradorligini va bu tashkilot strategiyasiga erishishga hissa qo'shayotganini baholash uchun ko'rsatkichlarga murojaat qiladilar.

### **Taktik va operatsion daraja**

Taktik va operatsion daraja yuqori darajali menejerlar va operativ menejerlarga tegishli. Ko'rib chiqilgan qoidalarning aksariyati shuni ko'rsatadiki, bu daraja foydalanuvchilarning xabardorligiga qaratilgan ta'lim va etika asosiy komponent sifatida ko'rsatilgan. Ammo ko'pchilik tadqiqotchilar axloqiy xatti-harakatlar tufayli ishonchni taklif qilmaydi va maxfiylik ushbu darajaga kiritilishi kerak. Tadqiqotchi

axloqiy xulq-atvorni o'z ichiga oladi, chunki OECD xavfsizlik madaniyatini yaratish tamoyillaridan biri axloqiy xulq-atvor ekanligini ta'kidlaydi. Bunda menejment ham, kengash ham korporativ axloq kodeksini ishlab chiqadi va muloqot qiladi. Axborot xavfsizligini boshqarish tizimining bir qismi sifatida, masalan, shaxsiy hayotga tajovuz qilish, mijozlar ma'lumotlarini sotish va ma'lumotlarni ruqsatsiz o'zgartirish xavfini minimallashtirish uchun tashkilot axloqiy xulq-atvorni ko'rib chiqishi kerak. Ushbu axloqiy xulq-atvor xodimlarga xavfsizlik haqida xabardorlik dasturining bir qismi sifatida saqlanadi.

Ushbu darajadagi taklif qilingan boshqa asosiy komponent - bu "ishonch". Axborot xavfsizligini boshqarish tizimi tarkibiy qismlarini amalga oshirishda rahbariyat xodimlarga axborot xavfsizligi siyosatiga rioya qilishiga ishonishi, xodimlar esa axborot xavfsizligi dasturini amalga oshirish majburiyatini bajarishda boshqaruvga ishonishlari kerak. Shuningdek, savdo hamkorlari va tashkilot obro'siga hissa qo'shishi mumkin bo'lgan mijozlar o'rtasida ishonchli munosabatlar o'rnatilishi kerak. Maxfiylik bu darajadagi asosiy komponent sifatida, shuningdek, mijozlar, yetkazib beruvchilar va boshqa biznes sheriklar bilan yaxshi munosabatlarga kelganda ishonch muhim masaladir.

### **Texnik daraja.**

Dastur tashkilot axborot xavfsizligining tashkiliy loyihasi, tarkibi va hisobot tuzilmalarini anglatadi. Shuningdek, u korporativ xavfsizlik arxitekturasiga oid rol va mas'uliyat, ko'nikma va tajriba hamda resurslar darajasini belgilaydi. Huquqiy va tartibga solish masalalari asosiy komponent sifatida taklif etiladi, chunki turli mamlakatlarda turli xil qonunlar va qoidalar mavjud, shuning uchun axborot xavfsizligini boshqarish dasturida buni hisobga olish kerak.

Ko'rib chiqilgan tizimlarning aksariyati xavfsizlik siyosati, protseduralari, standartlari va yo'riqnomalarini boshqaruv va xodimlarga yo'nalish va yordam bilan ta'minlash uchun axborot xavfsizligini ta'minlashning asosiy komponentlari sifatida taklif qiladi va ular xodimlardan nima kutilishi va ularning xatti-harakatlari bo'yicha ko'rsatmalarni aniq ko'rsatishi kerak. Xavfsizlik siyosati tashkilotda samarali jarayonlar va muvofiqlik monitoringi orqali amalga oshirilishi kerak. Axborot xavfsizligi siyosatiga misol sifatida kirishni boshqarish siyosati, elektron pochta va Internet siyosati hamda jismoniy va atrof-muhit siyosati kiradi. Jarayon xavfsizlik siyosatining talqini bo'lib, siyosatni amalga oshirish uchun bajarilishi kerak bo'lgan qadamlardir. Protseduralar parol standarti kabi standartlar va xavfsizlik siyosati talablariga javob beradigan xavfsizlik devorini sozlash tartib-qoidalari kabi ko'rsatmalar bilan ta'minlanadi.

Texnik daraja barcha xodimlarga tegishlidir. Ba'zi sharhlar tizimi axborot xavfsizligini boshqarish dasturining asosiy komponentalari sifatida texnologiyani himoya qiladi. U IT muhitini himoya qilish uchun amalga oshirilgan texnik va jismoniy mexanizmlarni o'z ichiga oladi. Xavfsizlikni boshqarish tizimini amalga oshirishda, tashkilotga tegishli texnologiya nazorati, atrof-muhit va aniqlangan xavflarni tahlili kerak. Bularga aktivlarni boshqarish, tizimni ishlab chiqish talablari, hodisalarni boshqarish, tarmoq va jismoniy kabi texnik operatsiyalar, atrof-muhit, xavfsizlik va biznesning uzluksizligini boshqarish va foydalanuvchilarni boshqarish kiradi. Texnologik muhitni doimiy ravishda kuzatib borish va bozorda texnologiya o'zgarishi xavfini bartaraf etish muhim ahamiyatga ega. Bundan tashqari shaxsiy raqamli yordamchilar va masofadan ishlash texnologiyasidan foydalanish mumkin.

### **Taklif etilayotgan ISG asosining dastlabki loyihasi**

#### **Strategik daraja**

- Axborot xavfsizligi strategiyasi
- Etakchilik va homiylik
- Investitsiyalar bo'yicha daromadlar xavfsizligi
- Xavfsizlik ko'rsatkichi va o'lchovi
- Ichki va tashqi auditor axborot xavfsizligi dasturi

#### **Taktik, operatsion daraja**

- Xavfsizlik dasturini tashkil etish
- Xavfsizlik siyosati, tartibi, eng yaxshi amaliyot, standartlar va ko'rsatmalar
- Muvofiqlik
- Monitoring va audit
- Huquqiy va tartibga soluvchi
- Foydalanuvchilarning xabardorligi, ta'lim va o'qitish
- Axloqiy qadriyatlar va xulq-atvor
- Maxfiylik va ishonch
- Standartga muvofiq sertifikatlash
- Xatarlarni boshqarish va baholash jarayoni
- Eng yaxshi amaliyot va asosiy ko'rib chiqish

#### **Texnik daraja**

- Aktivlar boshqaruvi
- Jismoniy va atrof-muhitni nazorat qilish
- Texnik operatsiyalar
- Rivojlanish va xizmat
- Hodisalarni boshqarish



- Biznesning uzluksizligi rejasi
- Favqulotda vaziyatlarni tiklash rejasi foydalanuvchilarni boshqarish

Qoidalarining ushbu darajasida axborot xavfsizligi dasturini boshqarishning asosiy komponentlari sifatida monitoring, muvofiqlik va audit ham taklif etiladi. Bu o'lchash va muvofiqlikni ta'minlash uchun zarurdir, axborot xavfsizligi siyosatiga rioya etilishini ta'minlash va aniqlangan hodisalarga samarali va o'z vaqtida javob berish uchun texnologiya va xodimlarning xatti-harakatlari kuzatilishi kerak. Xodimlarning xatti-harakatlarini monitoring qilish ruxsatsiz dasturiy ta'minotni o'rnatilishini kuzatishni, tashrif buyurilgan Internet saytlariga kuchli parollardan foydalanishni o'z ichiga olishi mumkin yoki texnologiya monitoringi sig'im va tarmoq trafigi monitoringi bilan bog'liq bo'lishi mumkin.

### Xulosa

Hozirgi texnologik va ijtimoiy sharoitda xavfsizlik bank va moliya institutlari tizimining juda muhim qismidir. Biznes hamkorlar, yetkazib beruvchilar va sotuvchilar bir-biridan yuqori axborot xavfsizligini talab qiladi, ayniqsa o'zaro tarmoq va ma'lumotlarga kirishni ta'minlashda. Raqobatbardosh razvedka ma'lumotlariga ega bo'lish orqali tovlamachilik maqsadida tarmoqlardan foydalangan holda josuslik keng tarqalmoqda. Banklarning kelajagi ko'pincha ochiq, qulay, xavfsiz tarmoqqa ulanishi va xizmatlarini taqdim etish qobiliyatiga bog'liq. Axborotni himoya qilish tajribasiga ega bo'lish va u bilan ishlaydigan muhit xavfsizligi tashkilotning bozor ulushini saqlab qoladi yoki qobiliyatini oshiradi. Bank axborot tizimi uchun axborot xavfsizligini boshqarishning keng qamrovli asosi juda zarur. FFIEC, COBIT, ISO 27002 va PCI ma'lumotlar xavfsizligi standartlari kabi ba'zi umumiy standartlar va eng yaxshi amaliyotlar ishlab chiqilgan, ammo ularning hech biri tashkilotning o'ziga xos va noyob ehtiyojlarini qondira olmaydi. Ushbu davom etayotgan tadqiqot bank muhiti va IT axborot tizimini hisobga olgan holda axborot xavfsizligini boshqarishning aniq tizimini ishlab chiqishdan iborat. Shu maqsadda bazadan bank uchun axborot xavfsizligini boshqarish uchun dastlabki harakat sifatida foydalanish mumkin. Ushbu qoida bugungi kunda mavjud bo'lgan barcha qoidalar komponentlarining integratsiyasidir. Aslini olganda, ushbu asos hanuzgacha axborot xavfsizligini boshqarish dasturiga umumiy yondashuv bo'lib, u mutaxassislar tomonidan ko'rib chiqilgan va real bank muhitida har tomonlama sinovdan o'tgan. Ushbu tadqiqot rivojlangan mamlakatlarda axborot xavfsizligini boshqarish tizimi bo'yicha IT-professional idrokini yanada ko'proq web-so'rovlar orqali o'rganish davom etmoqda.

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## CYBERSECURITY CHALLENGES AND SOLUTIONS IN BLOCKCHAIN-BASED IOT SYSTEMS

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**ABSTRACT.** *The pervasive integration of the Internet of Things (IoT) is evident across diverse domains, including smart homes, cities, industrial automation, and healthcare. Nonetheless, the escalating utilization of IoT devices has given rise to notable apprehensions regarding cybersecurity and privacy. An emerging proposition to address these concerns involves leveraging blockchain technology, known for its distributed and immutable ledger characteristics, to fortify the security and privacy aspects of IoT systems. Blockchain-infused IoT systems present advantages like decentralization, transparency, and data integrity. Nevertheless, their implementation introduces distinctive cybersecurity challenges that necessitate comprehensive consideration to ensure secure and dependable deployment. This paper undertakes a thorough examination of existing literature, shedding light on the principal cybersecurity challenges associated with blockchain-based IoT systems.*

**Keywords:** *cybersecurity; Internet of Things (IoT); blockchain; challenges; security; privacy.*

## INTRODUCTION

The Internet of Things (IoT) encompasses a network of interconnected devices, sensors, and systems designed to facilitate communication and data exchange, enabling diverse applications and services. Over recent years, the IoT has witnessed significant growth and widespread adoption across various sectors, including smart homes, smart cities, healthcare, transportation, industrial automation, and agriculture [2,3]. Despite its extensive use, the rapid expansion of IoT devices has given rise to apprehensions regarding their security and privacy [4].

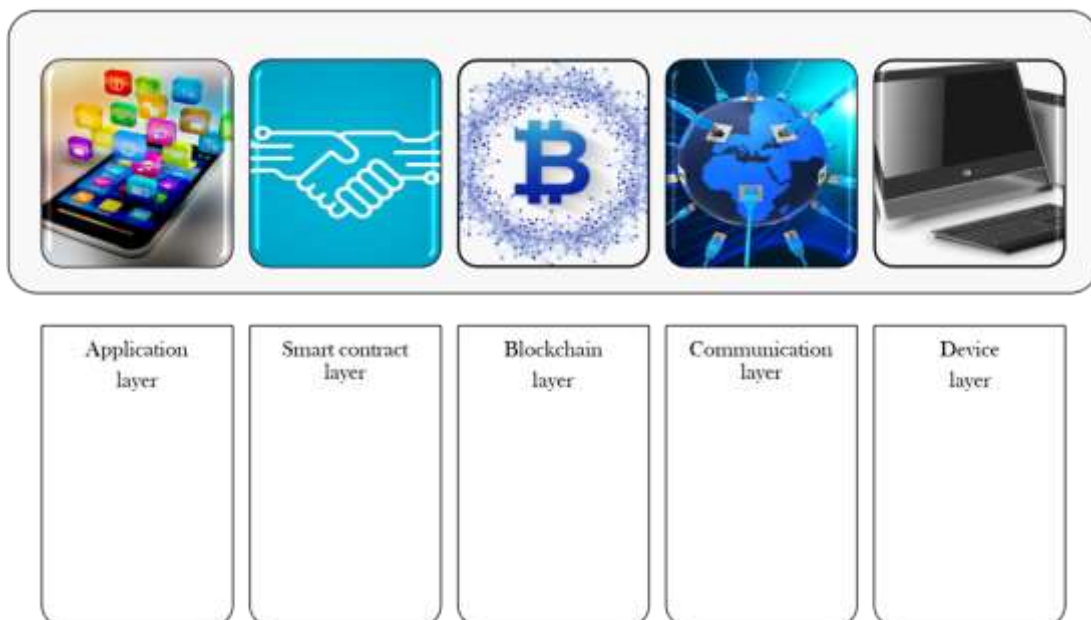
Many IoT devices exhibit resource constraints, characterized by limited computational capabilities and storage capacities, rendering them susceptible to various security threats. These threats include unauthorized access, data breaches, tampering, and malware attacks [5,6]. Furthermore, the prevalent centralized architecture of numerous IoT systems introduces a vulnerability by creating a single point of failure, thereby exposing them to systemic risks [7].

Initially presented by Satoshi Nakamoto in 2008 as the foundational technology for Bitcoin, blockchain technology has surfaced as a prospective remedy to bolster the security and privacy features of Internet of Things (IoT) systems [5]. Functioning as a distributed ledger, blockchain facilitates transactions that are secure, transparent, and resistant to tampering [3]. The integration of blockchain technology into IoT systems has the potential to elevate their security and privacy capabilities [8]. Notably, blockchain brings forth a range of advantages that positively impact the security of IoT systems:

- *Decentralization*: Blockchain operates as a decentralized technology, devoid of control by any single entity [9]. This characteristic poses a challenge for hackers, as there is no centralized point to target or attack. In contrast to centralized systems where data resides on a single server, decentralized systems store data across multiple nodes, complicating unauthorized access for hackers.
- *Transparency*: Blockchain ensures transparency by recording all transactions on the blockchain, visible to all participants [10]. This transparency acts as a deterrent to hackers attempting fraud or data tampering. In contrast, centralized systems often lack transaction transparency, making it challenging to trace fraud or identify those responsible for data tampering.
- *Consensus Mechanisms*: Blockchain relies on consensus mechanisms, algorithms ensuring unanimous agreement among network participants on transaction validity [11]. This thwarts hackers' attempts to manipulate the network and endorse fraudulent transactions. In centralized systems, a single

entity validates transactions, making it easier for hackers to manipulate the system.

- *Cryptographic Techniques*: Blockchain employs cryptographic techniques, utilizing algorithms to encrypt data and render it unreadable to unauthorized users [12]. This robust security measure impedes hackers from stealing data from the blockchain. Conversely, in centralized systems, data is often stored in plain text, making it more vulnerable to theft by hackers.
- *Smart Contracts*: Blockchain facilitates the creation of smart contracts—self-executing contracts stored on the blockchain. Smart contracts, being tamper-proof and irreversible, enable the automation and enforcement of agreements between parties [13]. This innovation enhances the efficiency and security of IoT systems.



**Figure 1.** Blockchain layers associated with IoT systems

By integrating these security features, IoT systems based on blockchain can establish a resilient framework to uphold the integrity, privacy, and reliability of both data and transactions within the IoT ecosystem. In the realm of blockchain-based IoT systems, an examination of their architecture and security facets reveals several identifiable layers [14]. Figure 1 delineates these layers pertinent to IoT systems, as outlined below:

- **Device Layer**: At the foundation of the architecture, the device layer encompasses the actual IoT devices like sensors, actuators, and embedded systems. These devices are responsible for collecting and generating data,

subsequently transmitting it to the blockchain network for processing and storage.

- **Communication Layer:** Facilitating the seamless exchange of data between IoT devices and the blockchain network, the communication layer involves protocols, standards, and network infrastructure. These components work cohesively to ensure secure and reliable communication.
- **Blockchain Layer:** Serving as the system's core, the blockchain layer is comprised of the distributed ledger and associated consensus mechanisms. This layer plays a pivotal role in recording and validating transactions, guaranteeing the integrity and immutability of the data stored on the blockchain.
- **Smart Contract Layer:** This layer involves the deployment of smart contracts—self-executing contracts governed by predefined rules and conditions. Smart contracts enable automation, enforce business logic, and facilitate secure interactions between IoT devices and the blockchain network.
- **Application Layer:** Positioned atop the framework, the application layer encompasses various applications and services developed on the blockchain-based IoT system. Leveraging the secure and transparent characteristics of the underlying blockchain, these applications deliver functionalities such as data analytics, supply chain management, and decentralized control.

The integration of blockchain into IoT systems holds the promise of enhancing data integrity, transparency, accountability, and interoperability [15]. However, the implementation of blockchain-based IoT systems introduces distinctive cybersecurity challenges that require careful consideration [16]. These challenges span across domains such as IoT device security, blockchain security, and the seamless integration of IoT devices with the blockchain infrastructure [17].

It is imperative to comprehend and proactively address these challenges to ensure the secure and reliable deployment of blockchain-based IoT systems. Ongoing research efforts and collaborative initiatives involving diverse stakeholders are essential to overcome these challenges and facilitate the widespread adoption of blockchain-based IoT systems across various industries [18,19].

## **CHALLENGES OF USING BLOCKCHAIN FOR SECURING IOT NETWORKS**

In this section, we delve into the potential advantages and challenges associated with employing blockchain to enhance the security of IoT networks. We categorize these challenges into three primary areas:

### **IoT DEVICE SECURITY**



The foundation of any IoT system lies in its IoT devices, which play a pivotal role in the collection, processing, and transmission of data. However, the vulnerability of IoT devices to security threats arises from their resource-constrained nature, the absence of robust security mechanisms, and their deployment in diverse environments. The key challenges in IoT device security within the context of blockchain-based IoT systems include:

#### 1. **Device Authentication and Authorization:**

- *Challenge:* Traditional authentication methods like username/password or cryptographic keys may not be suitable for resource-constrained IoT devices due to their limited computational capabilities and storage capacities.
- *Solution:* Developing lightweight and scalable methods for efficient authentication and authorization, preserving the security and privacy of IoT devices in a blockchain-based IoT system.

#### 2. **Device Integrity and Firmware Updates:**

- *Challenge:* Ensuring the integrity of IoT devices and their firmware is crucial to prevent unauthorized modifications, but IoT devices often lack mechanisms to verify firmware integrity or respond to tampering.
- *Solution:* Leveraging blockchain-based solutions, including smart contracts and consensus mechanisms, to ensure device integrity and facilitate secure and efficient firmware updates in a distributed and heterogeneous IoT environment.

#### 3. **Secure Communication and Data Privacy:**

- *Challenge:* IoT devices need secure communication channels and data privacy, yet they may lack encryption capabilities or transmit data in plaintext, making them susceptible to eavesdropping, data breaches, and unauthorized access.
- *Solution:* Developing efficient and lightweight encryption methods to protect data transmitted between IoT devices and the blockchain network in a blockchain-based IoT system.

#### 4. **Physical Security:**

- *Challenge:* Physical security is often overlooked, but it is crucial for protecting the confidentiality, integrity, and availability of IoT devices. Physical attacks, such as theft and tampering, pose a threat to security and privacy.
- *Solution:* Implementing tamper-evident packaging, physical access controls, and secure device deployment strategies to ensure the physical security of IoT devices within a blockchain-based IoT system.

## BLOCKCHAIN SECURITY

Blockchain serves as the foundational technology, providing the decentralized and immutable ledger for recording and validating transactions in a blockchain-based IoT system. However, the inherent nature of blockchain introduces specific cybersecurity challenges that must be addressed to ensure the security and privacy of the system. Here are the key challenges in blockchain security within the context of blockchain-based IoT systems:

### 1. Consensus Mechanisms:

- *Challenge:* Traditional consensus mechanisms like proof-of-work (PoW) or proof-of-stake (PoS) may not be suitable for resource-constrained IoT devices.
- *Solution:* Developing lightweight and energy-efficient consensus mechanisms accommodating IoT device limitations while upholding the security and integrity of the blockchain.

### 2. Scalability and Performance:

- *Challenge:* Traditional blockchains, such as Bitcoin or Ethereum, may struggle to scale and handle the high transaction volume generated by IoT devices.
- *Solution:* Creating scalable and high-performance blockchain solutions capable of meeting the demands of IoT devices, including high transaction throughput and low latency.

### 3. Privacy and Confidentiality:

- *Challenge:* Traditional blockchains are transparent and publicly readable, posing privacy concerns for sensitive data generated by IoT devices.
- *Solution:* Developing privacy-preserving techniques such as zero-knowledge proofs, confidential transactions, and secure multi-party computation to protect IoT-generated sensitive data while maintaining blockchain integrity and transparency.

### 4. Smart Contract Security:

- *Challenge:* Smart contracts are vulnerable to coding errors, logic flaws, and security loopholes, potentially compromising the entire system.
- *Solution:* Ensuring smart contract security through thorough code audits, vulnerability assessments, and best practices in development, including formal verification and code testing techniques.

### 5. Governance and Consensus among Multiple Parties:

- *Challenge:* Achieving consensus and governance among diverse stakeholders with varying interests, incentives, and decision-making processes.
- *Solution:* Developing effective governance models, consensus algorithms, and decision-making mechanisms accommodating the diverse nature of stakeholders in a blockchain-based IoT system.

## 6. Regulatory and Legal Challenges:

- *Challenge:* Navigating regulatory complexities, including data privacy regulations, intellectual property rights, liability, and compliance requirements.
- *Solution:* Ensuring compliance with regulations and laws, addressing legal challenges, and establishing appropriate legal frameworks for the secure and lawful operation of blockchain-based IoT systems.

### NETWORK SECURITY

In a blockchain-based IoT system, the security of the network connecting IoT devices and the blockchain network is paramount for ensuring the system's secure and reliable operation. The key challenges in network security within the context of blockchain-based IoT systems include:

#### 1. Distributed Denial of Service (DDoS) Attacks:

- *Challenge:* DDoS attacks pose a significant threat by overwhelming the network with a flood of traffic, disrupting availability and performance.
- *Solution:* Implementing robust DDoS mitigation strategies, including traffic filtering, rate limiting, and anomaly detection, to maintain system availability and integrity.

#### 2. Sybil Attacks:

- *Challenge:* Malicious entities creating multiple fake identities can undermine trust and consensus mechanisms in a blockchain-based IoT system.
- *Solution:* Mitigating Sybil attacks by implementing identity verification mechanisms and reputation systems to ensure the integrity of the network.

#### 3. Rogue Device Detection:

- *Challenge:* Identifying and mitigating rogue devices attempting to disrupt the network or compromise system security is critical.
- *Solution:* Leveraging blockchain technology for tracking and identifying device behavior, along with implementing anomaly detection algorithms and network monitoring techniques for timely response to rogue devices.

#### 4. Interoperability and Standardization:

- *Challenge:* Diverse IoT devices and blockchain networks following different standards and protocols lead to interoperability challenges.
- *Solution:* Achieving seamless integration and interoperability through the development of standardized communication protocols, data formats, and application programming interfaces (APIs).

As the number of interconnected devices in IoT systems continues to grow, interactions among these devices over the internet become more prevalent. However, storing data in centralized servers can create hurdles, as devices must access data through a centralized network. To address this issue, decentralized technologies, such as blockchain, can offer solutions by providing a secure and transparent framework for data management and communication in IoT systems.

### CONCLUSION

In conclusion, the potential of blockchain-based IoT systems is substantial, yet addressing the associated cybersecurity challenges demands concerted efforts. A comprehensive and multidisciplinary approach, spanning technical advancements, operational best practices, and regulatory frameworks, is essential. Through such efforts, we can establish a foundation for secure and reliable blockchain-based IoT systems that not only foster innovation but also drive transformative changes across industries.

To propel advancements in this field, future research should center on developing blockchain systems explicitly tailored for IoT security. Critical areas of focus encompass scalability, interoperability, energy efficiency, privacy preservation, and standardization. Collaboration among researchers, industry experts, and regulatory bodies is pivotal for advancing cybersecurity measures and facilitating the widespread adoption of blockchain-based IoT systems across diverse industries. By prioritizing these research avenues, we can unlock the full potential of blockchain in securing IoT ecosystems and usher in a new era of secure and interconnected technologies.

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**Annotatsiya.** Bugungi kundagi ta'lim tizimidagi asosiy muammolardan biri talabalarning dars jarayoniga qiziqmasligi buning sababi maxsus metodika va qurilmalar yetishmasligidandir. Muvaffaqiyatli ta'lim natijalarini kafolatlash uchun mavjud ta'lim tizimida ilg'or va muvaffaqiyatli o'qitish strategiyalaridan foydalanish zarur. Hozirda ushbu muammolarni hal qilish uchun o'rganilayotgan yondashuvlardan biri kengaytirilgan haqiqat (AR), chunki u o'rganish uchun to'liq keng qamrovli hamkorlik muhitini yaratishi mumkin. Ushbu sharhda kengaytirilgan haqiqat va uning texnik sohada, o'qitishda va o'qituvchilik faoliyati qo'llanilishishi xaqida o'rganiladi, shuningdek AR ta'lim sifatini yaxshilash ehtimoliga oydinlik kiritadigan boshqa tadqiqotlar ham eslatib o'tilgan. Mavjud bo'lgan turli xil ishlar tahlil qilinganda, ulardan foydalanishning ko'plab afzalliklari aniqlandi. Bundan tashqari, ta'lim sifatini yaxshilash uchun kelajakdagi tadqiqot sohasi bo'lib xizmat qilishi mumkin bo'lgan joriy cheklovlar ham taqdim etildi.

**Kalit So'zlar:** Kengaytirilgan Haqiqat, Ta'lim, O'quv Muhiti, Sifatli Ta'lim.

## I.KIRISH

An'anaviy ta'lim muassasalarida talabalar uchun joriy faoliyat shundan iboratki, ertalab talabalar ta'lim muassasalariga borib, kitoblarini ochib, o'qituvchilar ularga nimani o'rgatayotgan bo'lishsa shu ma'lumotlarning asl ma'nosini tushunmasdan bo'lsa ham o'rganadilar [1]. Ular faqat o'qiganlarini o'rganadilar va bu jarayonni har kuni xuddi robotlar kabi takrorlaydilar. Ushbu robotga o'xshash kundalik hayot tufayli talabalar darslarda nima sodir bo'layotganini tushunmaydilar. Shuning uchun ular, ma'nosini tushunmasdan faqat ko'rgan narsalarini yod olishadi, shunga qaramasdan tushunishlari uchun qo'shimcha darslarni olishadi, lekin oxirida baribir ham yod olishga to'g'ri keladi, chunki talabalar boshidanoq ularning maktab hayotidan boshlab o'zlarining malakasini, bilimini va kompetensiyasini oshirishni o'rniga ular yod olishga o'ralashib qolishadi. Shuning uchun xozirgi kunda talabalar tushunmaganliklari sababli o'qishni yomon ko'radilar va shunchaki vaqtlarini o'ynash, televizor ko'rish yoki foydasiz bo'lgan ishlarga sarf qilishadi.

Talabalarning qiziqishini tushunish uchun ta'lim tendentsiyasi talabalar uchun yanada qiziqarli va takomillashtirilgan o'quv tajribasini ta'minlaydigan raqamli texnologiyalarga o'tmoqda. Ta'lim muassasalari ta'limni boshqarish tizimlari (LMS), multimedia tarkibi, gamifikatsiya va simulyatsiya dasturlari kabi raqamli vositalar va platformalarni o'zlashtirmoqda[2]. Biroq, an'anaviy sinf sharoitlari hali ham ta'lim tizimida hukmronlik qilmoqda va talabalar uchun raqamli resurslardan foydalanishni cheklaydi.

Mavjud ta'lim tizimining samaradorligi doimiy tortishuvlarga sabab bo'ldi. Amaldagi tizim standartlashtirilgan testlarni bajarish va juda ko'p yodlashni talab qilgani uchun tez-tez tanqid qilinadi. Ushbu usul talabalarning ishtiroki, ijodkorligi va tanqidiy fikrlash qobiliyatining yetishmasligiga olib kelishi mumkin. Yana bir kamchilik bu tizimning amaliy bilim va Real tajribaga e'tiborsizligi, bu bitiruvchilarni ishsizlik darajasi yuqori bo'lishiga olib kelishi mumkin. Moliyaviy va ijtimoiy harakatchanlikning farqlanishiga hissa qo'shadigan yana bir muhim masala-bu turli xil ijtimoiy-iqtisodiy va irqiy guruhlar o'rtasidagi ta'lim sohasidagi tafovut.

Ushbu muammolarni hal qilish uchun ta'lim tizimida muhim islohotlar o'tkazish bo'yicha takliflar mavjud, masalan, loyihalardan foydalanish, tanqidiy fikrlash qobiliyatlari va amaliy tajribaga ko'proq ahamiyat berish. Bundan tashqari, individual ta'lim o'sib bormoqda, bunda har bir talabaning o'ziga xos talablari va qay darajada tushunishi hisobga oladi. Ba'zi ekspertlarning fikriga ko'ra, hamdardlik va jamoaviy ish kabi ijtimoiy-emotsional vakolatlarni targ'ib qiluvchi ko'proq ko'p tarmoqli o'quv dasturi va o'quv strategiyalari bolalarga chuqur foydali ta'sir ko'rsatishi mumkin.



Adolatli va inklyuziv xilma-xillikni targ'ib qilish ta'lim islohotlarining muhim tarkibiy qismidir. Bunga xurofot va kamsitishlardan xoli o'quv muhitini yaratish va kelib chiqishidan qat'iy nazar, barcha talabalarga teng imkoniyatlar berish kiradi [3]. Bundan tashqari, ta'lim tizimi barcha ko'rinishlarida xilma-xillikni qamrab oladigan va targ'ib qiluvchi madaniy jihatdan sezgir o'qitish usullaridan foydalanishi kerak. Hozirgi ta'lim tizimini sezilarli darajada yaxshilash uchun biz amaliy ko'nikmalar, ijodiy fikrlash, individual o'rganish, ijtimoiy va hissiy rivojlanish, inklyuziya va tenglikni ta'kidlab, biz o'quvchilarni tanlagan kasblarida hayotida muvaffaqiyat qozonishga yaxshiroq tayyorlaydigan tizimni yaratishimiz mumkin [4].

#### *A. hozirgi ta'lim tizimidagi muammolar*

Hozirgi ta'lim tizimidagi bir nechta muammolar o'quvchilarga beriladigan umumiy ta'lim sifatini pasaytirishga olib kelishi mumkin. Tanqidiy fikrlash qobiliyatlari, ijodkorlik va talabalarning ishtiroki pasayishiga olib kelishi mumkin bo'lgan standartlashtirilgan testlarga haddan tashqari e'tibor asosiy tashvishlardan biridir. Bundan tashqari, haqiqiy hayot tajribasi va amaliy ko'nikmalariga ega bo'lmagan bitiruvchilar ishsizlik darajasi yuqori. Moliyaviy va ijtimoiy tengsizlikni kuchaytiradigan yana bir muammo-bu turli demografik va etnik guruhlar o'rtasidagi ta'limdagi farq [5]. Bundan tashqari, mavjud ta'lim tizimi xilma-xillik, tenglik va inklyuzivlikni rivojlantirish uchun ishlamaydi. Xususan, kam ta'minlangan oilalar uchun imkoniyatlardagi adolatsizlikga olib keladi va o'quvchilar orasida nosog'lom raqobatni paydo qiladi. Bundan tashqari, o'qituvchilar uchun o'quvchilarning o'zgaruvchan talablariga rioya qilish uchun zarur bo'lgan bilim va ko'nikmalarni olish uchun yetarli imkoniyat yo'q.

1) *O'qishga qiziqishning yo'qligi*:- mavzularga tushunmaslik tufayli talabalar o'qishga qiziqishlarini yo'qotmoqdalar. Ammo o'quvchilar ustozining nima o'rgatayotganini tushunolmasa, ularning maktabdagi ta'limini yomonlash mumkin emas.

2) *Fokusning yetishmasligi*:- bu xam muhim muammo bo'lib, talabalarning diqqatini o'qishdagi o'sishiga qaratish kerak. Aralash ta'limga e'tibor oliy ma'lumotga olib kelishi mumkin. Shunday qilib, agar talabani boshqa faoliyat bilan chalg'itsa, talaba o'z darslariga qanday e'tibor qaratishi mumkin [6].

3) *Zerikish qiziqishlarni o'ldiradi*:- zerikish-bu hozirgi ta'lim tizimining muammosi bo'lgan yana bir omil, agar talabalar dars jarayonida ishtirok etmasa yoki materiallarni tushunmasa, ularni bu narsa zerikishga, ongini boshqa narsalar qilishga va diqqat jamlanmasligiga olib keladi.

4) *Ta'lim muhiti*:- Talabaning yuqori darajadagi ishlashi va natijalari, atrof muhitdagi o'qish uchun bo'lgan imkoniyatlariga bog'liqmas deb bo'lmaydi.

Ta'limning rivojlanishi ijtimoiy, madaniy, jismoniy va psixologik muhitda sodir bo'ladi, bu samarali o'rganish uchun yetarli muhit zarurligini ko'rsatadi [7].

5) *Muvaffaqiyatga erishish uchun bo'ladigan bosim*: - Ota-onalar farzandlariga bosim o'tkazayotgani sababli bir oy ichida bolalar ota-onalari bilan necha marta isyon ko'targanliklariga aniqlik kiritishdi, shuningdek ular bolalarga qanchalik katta akademik bosim bo'layotganligini so'rab bilishgan [8]. Bu shuni ko'rsatadiki, bosim hatto nizo keltirib chiqarishi mumkin, bu bizning hozirgi ta'lim tizimimizdagi juda jiddiy muammo.

Bundan tashqari, ushbu muammolarni hal qilish uchun maktab tizimida tub o'zgarishlar bo'yicha takliflar mavjud. Bu har bir talabaning o'ziga xos talablari va ta'lim imtiyozlarini hisobga olgan holda individual ta'limga o'tishni o'z ichiga oladi. Katta ish imkoniyatlariga olib kelishi mumkin bo'lgan aniq qobiliyatlarni yaratish uchun, birgalikda o'qitish va amaliy tajribaga eng ko'p e'tiborni berish kerak. Multidiscipliner yondashuvni amalga oshirishdan kelib chiqishi mumkin psixologik va ijtimoiy ta'limga yo'naltirilgan o'qitish strategiyalari, bolalarda uzoq muddatga qoladigan foydali qobilaytlarni paydo qiladi.

Qulay o'quv muhiti, madaniy ahamiyatga ega bo'lgan ta'lim strategiyalari orqali adolatli muomala va integratsiyani faol ravishda qo'llab-quvvatlashi kerak. Albatta, samaraliroq va uzoq muddatli ta'lim tizimini rivojlantirish o'qituvchilarga talabalarning o'zgaruvchan talablariga javob bera oladigan imkoniyatlarni taqdim qiladi.

Xulosa qilib aytganda, hozirgi ta'lim tizimi bilan bog'liq juda katta muammolar mavjud va ularni hal qilish uchun barcha tomonlarning hamkorligi kerak bo'ladi. Biz o'qituvchilar uchun individual ta'lim, real tajriba va rivojlanish imkoniyatlarini ta'kidlab, shuningdek, inklyuzivlik, tenglik va xilma-xillikni rivojlantirish orqali bolalarni kelajakdagi kasbiy va ilmiy ishlarida muvaffaqiyat qozonish uchun yaxshi jihozlangan sinfda yanada samarali ta'lim tizimini qurishimiz mumkin.

#### *B. AR muammolarni qanday hal qilishi mumkin*

Hali yangi yo'nalish bo'lishiga qaramasdan, immersiv virtual olamlardagi muvafaqiyatli tajribalar xaqidagi tushunchalar tezda ko'payib bormoqda. Virtual haqiqat (VR), turli yozuvchilar tomonidan taklif qilinganidek, talabalarning faolligini oshirishga va hayot darsini yaxshilash uchun katta imkoniyatlarga ega bo'lishga yordam beradi [9]. Biroq, ushbu ta'lim texnologiyasini ishlab chiquvchilar va baholovchilar uchun o'quv faoliyatini yaxshilash uchun kengaytirilgan reallik texnologiyasidan qanday foydalanishni tushunish katta qiyinchilik tug'diradi, chunki virtual haqiqatning amaliy salohiyati hali to'liq o'rganilmagan. Kiyiladigan texnologiya virtual haqiqatning bir qismi sifatida eng yaxshi tasvirlangan -

kengaytirilgan haqiqat. Virtual haqiqat texnologiyasidan foydalanuvchi to'liq ichkariga va tayyor qurilgan muhitga sho'ng'iydi. Foydalanuvchi suv ostida qolganda atrofdagi haqiqiy dunyoni ko'ra olmaydi. Aksincha, AR foydalanuvchilari bir-birining ustiga qo'yilgan yoki aralashtirilgan raqamli narsalar orqali ma'lumot va haqiqiy muhitni kuzatish imkoniyatiga ega bo'ladilar.

Shaxslarni bog'laydigan va tegishli masalalarni tushunishni yaxshilaydigan foydali funkstiyalarga boy va jonli o'qish kursini taklif qilish orqali AR an'anaviy maktabda yuz beradigan muammolarni yengillashtirishi mumkin. U kontekstga sezgir trening, maxsus tayyorlangan material va darhol javoblarni taklif qilishi mumkin. Bu barcha talabalarga unda ishtirok etish imkoniyatini beradigan o'rganish va jalb qilishni oshiradi. Bundan tashqari, AR bolalarga hamkorlik, qaror qabul qilish va yechim topish kabi turli qobiliyatlarni egallashda yordam berishi mumkin. Texnologiya, shuningdek, o'qituvchilarga o'qitish usullarini individual talabalarning ehtiyojlarini qondirish uchun moslashtirish va ta'limni yanada individuallashtirish imkoniyatini beradi.

Nogiron yoki maxsus ta'lim ehtiyojlari bo'lgan shaxslarxam AR - dan foyda olishlari mumkin, masalan, ko'rish qobiliyati cheklangan yoki Real vaqtda subtitrlarga ega bo'lganlarga eshitish qobiliyati pasaygan talabalarga yordam berish uchun vizual yordam berishi mumkin. Shuningdek, u ADHD(Diqqat yetishmasligi sindromi / giperaktivlik ) yoki boshqa to'siqlarga chalingan bolalar uchun o'rganishni yanada dinamik va qiziqarli qilishi, ularning o'quv muhitida ishtiroki va samaradorligini oshirishi mumkin

## II. AR TARIXI

Oldingi yigirma yil yoki undan ko'proq vaqt ichida AR bilan bog'liq texnologiyalar (dasturiy ta'minotni ishlab chiqish to'plamlari) rivojlanishda davom etdi va 1999 yildan beri AR asboblari to'plami chiqarilgandan beri kengroq jamoatchilikka taqdim etildi[10]. Boshqa narsalar qatorida, texnologiya sohasidagi ikkita eng yirik o'yinchilar-Google va Apple mos ravishda AR Core va AR Kit kabi AR asboblari to'plamlarini chiqardilar va o'z qurilmalarida ko'plab AR dasturlarini taklif qilmoqdalar.

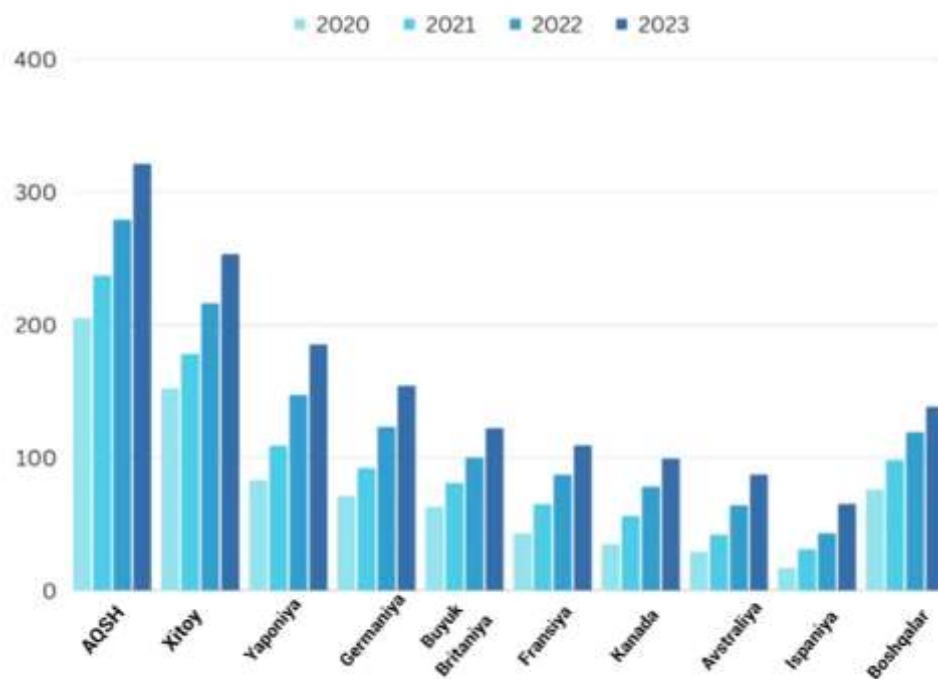
Dunyo nuqtai nazaridan, texnologiya sohasida AR dunyodagi eng qiziqarli texnologiyalardan biri sifatida qaralishi mumkin. U har qanday tarixiy joyning o'tmish va hozirgi ko'rinishini aks ettirish uchun haqiqiy va virtual olamlarni birlashtirishi mumkin[11]. Kengaytirilgan haqiqat sayyohlar yoki tashrif buyuruvchilarga statik tasvirlar, filmlar, qum jadvallari va boshqalar kabi oddiy protseduralarga qaraganda ko'proq vizual va intuitiv tajribani taqdim etishi mumkin, bu esa tarixiy joylashuvning virtual tasvirini yaratadi.

**Vassilios Vlahakis** Parfenon AR degan arxaik yunon navigatsiya tizimini namoyish etdi bu navigatsiya Evropa Ittifoqi ko‘magida boshga o‘rnatilgan displeyli (HMD) portativ monitorda ishlaydi. Shuningdek Pompeii AR navigatsiya tizimi foydalanuvchilarga virtual binolarni ko‘rib chiqish orqali haqiqiy dunyo bo‘ylab harakatlanish imkonini beradi[11]. AR muzey qo‘llanmasi tizimini jamiyat foydalanishi uchun smartfonga o‘xshash qurilmalarda namoyish etdi[12].

Odamlar AR ni birinchi marta ishlatganda, ular vaziyatni deyarli nazorat qila olmaydilar. Odamlar kengaytirilgan reallik garniturasini kiyib, haqiqiy narsalardan foydalanmoqchi bo‘lganlarida, ular tegmoqchi bo‘lgan haqiqiy ob‘yektning, masalan, stol, shisha va hokazolarning aniq o‘rnini hisoblay olmaydilar. Shuningdek, ular xamma narsani masofadan turib ko‘rish sababini ko‘rsatadilar, bu masofaviy hamkorlikda ishlash tezligini va sifatini oshiradi, lekin ishni bajarish tezligi va aniqligini oshirmaydi. Ular atrofdagi narsalarni muzlash xususiyati haqida gapirishdi va ular haqiqiy ob‘yektlarni aniq boshqarish muammosini hal qilish uchun sheriklarining bezovta qilmagan xolatda haqiqiy ob‘yektlarni osongina boshqarishlari mumkin[13].

Atrofingizdagi narsalarning kengaytirilgan yoki virtual nuqtai nazarini ta‘minlash uchun fotosuratlar, videolar va 3D modellardan iborat raqamli materiallar qatlamlaridan tashkil topgan olamga olib kiradi. Informatika bo‘yicha mutaxassis bo‘lgan Sutherland 1960-yillarda AR g‘oyasi birinchi marta paydo bo‘lganida, asosiy simli ramka tasvirlarini ko‘rsatishga qodir bo‘lgan birinchi ko‘chma displey qurilmasini ishlab chiqdi. Ammo kengaytirilgan haqiqat gadjetlar va hisoblash uchun sensorli ekranlar paydo bo‘lishidan oldin mashhurlikka erisha olmadi va yanada kengroq taqdim etila boshladi.

AR kameralar va sensorlar yordamida foydalanuvchining harakatlari va joylashuvini kuzatish, so‘ngra raqamli materialni jismoniy muhitda ko‘rsatish orqali ishlaydi. Foydalanuvchi joylashuvini aniqlash va tegishli ma‘lumotlarni ko‘rsatish uchun sun‘iy yo‘ldosh navigatsiyasi va boshqa vositalardan foydalanadigan joylashuvga asoslangan kengaytirilgan haqiqat, shuningdek, markerlar, joylashuvga asoslangan kengaytirilgan haqiqat va tuhmat tili (bir vaqtning o‘zida mahalliyashtirish va xaritalash) va bu 3D yer rejasini yaratish uchun chuqur o‘rganishdan foydalanadi, so‘ngra ba‘zi ma‘lumotlarni ushbu maqsadga erishish uchun ishlatilishi mumkin bo‘lgan usullardan.



Rasm 1. 2020-2023 yillarda butun dunyo bo‘ylab AR foydalanish ko‘rsatkichi [14]

Ko‘plab korxonalar, ayniqsa o‘yinlar, sevimli mashg‘ulotlar, maktab ta’limi va marketing sohaslarida kengaytirilgan haqiqatdan foydalanadilar. O‘yinlarda kengaytirilgan haqiqatdan foydalanish real va qiziqarli uchrashuvlarga olib kelishi mumkin, virtual ekskursiyalar va interaktiv darsliklar - bu kengaytirilgan haqiqat ta’limda taqdim etishi mumkin bo‘lgan qiziqarli va dinamik o‘rganish imkoniyatlarining bir nechtasi. Kengaytirilgan reallik marketingda odamlarga mahsulotlarni yangi ko‘rinishda ko‘rish imkonini beruvchi interaktiv mahsulot taqdimotlari va reklama roliklarini ishlab chiqish uchun ishlatilishi mumkin. AR texnologiyasini ishlab chiquvchi sifatida u atrof-muhit bilan o‘zaro munosabatimizni va uni idrok etishimizni tubdan o‘zgartirish, shuningdek, zavqlanish, ta’lim va biznes uchun yangi imkoniyatlarni ochish qobiliyatiga ega.

So‘nggi to‘rt yil ichida 1 - rasmda ko‘rsatilgandek, qaysi yirik mamlakatlar ARni qancha ishlatilayotganligini aniqlangan, bu erda  $X$  o‘qi mamlakatlar,  $Y$  o‘qi esa ming kishiga to‘g‘ri keladi[14].

### III. TA’LIM SOHASIDA AR DASTURINI KO‘RIB CHIQISH

Kompyuter ma’lumotlarini foydalanuvchining jismoniy tanasi bilan birlashtirish bu AR degan ma’noni anglatadi. O‘quv jarayonini yaxshilash uchun raqamli ma’lumotlar, shu jumladan matn, fotosuratlar va videolar ta’lim sharoitida haqiqiy dunyoga mos keladi. Ta’lim sohasida turli xil kengaytirilgan haqiqat dasturlari qo‘llaniladi. Darsliklar kengaytirilgan haqiqatdan eng ko‘p foydalanadigan sohalardan

biridir. Nashriyotchilar mobil qurilmalar uchun mavjud bo'lgan AR darsliklarini ishlab chiqmoqdalar. Talabalar smartfon kamerasi yordamida qo'llanmaning ma'lum sahifalarini ko'rib chiqish orqali mavzuni tushunishni yaxshilaydigan Real 3D modellar, videokliplar va filmlarni o'rganishlari mumkin [15]. Masalan, inson anatomiyasi talabasi yurakning 3D tasviriga murojaat qilishi va uning qanday ishlashini tushunishi mumkin.

Kasb-hunar ta'limi va o'qitish istiqbollari bizga ta'limga muhtoj talabalar, ayniqsa motivatsiya va ko'nikmalarga ega bo'lmaganlar uchun "Paint-car" deb nomlangan dasturni taqdim etadi. Ushbu ilova sizga bo'yamoqchi bo'lgan mashinani qayta bo'yash imkonini beradi. Siz faqat transport vositasini suratga olishingiz kerak. Bu bolalarga motivatsiyani oshirishga yordam beradi[16].

Tanqidiy fikrlash ko'nikmalarini rivojlantirishga yordam beradigan o'yinni ishlab chiqdilar, bu o'yin "mening oynamda momaqaldir" deb nomlangan bo'lib, uni turli xil ta'lim materiallariga muhtoj bolalar shaxsan baholaydilar. Diqqat yetishmasligi giperaktivligi buzilishi, autizm, Daun sindromi va boshqalar[17].

Virtual dunyoning jozibali vizual effektlarini yaratish uchun aniq joylashishni aniqlash va identifikatsiyalash muhimligi tasvirlangan. Harakatlanuvchi foydalanuvchi uchun kompyuter tomonidan yaratilgan element sobit ko'rinishini ta'minlash uchun tizim uning atrof-muhitdagi o'rnini doimiy ravishda aniqlab turishi kerak. "*Outside-in*" va "*upside-down*" ni kuzatish ikki xil yondashuv bo'lib, ikkalasi ham kamchiliklarga ega. "*Inside-out*" harakatlanuvchi narsalarda joylashgan sensorlardan foydalanadi, *outside-in* esa atrof-muhit sensorlaridan foydalanadi[18]. Biroq, ikkalasining ham kamchiliklari bor, masalan, ambitsiyalarga asoslangan kuzatuv yorug'likka bog'liq va ichidagi sun'iy yo'ldosh unchalik aniq emas. Sensorli ekran innovatsiyasi va bir vaqtning o'zida renderlash - bu yaqinlashib kelayotgan AR davrida ta'kidlangan ikkita asosiy to'siq. Ko'rish maydoni, yechimlari, kattaligi va vazni displey qurilmalariga qo'yilgan ba'zi cheklovlar, ammo Real vaqtda ko'rsatish grafik komponentlarni atrof - muhit bilan birlashtirish uchun juda muhimdir. Mualliflarning ta'kidlashicha, ularning umumiy maqsadi avtomatlashtirilgan elementlarni shu qadar mukammal birlashtirishki, odamlar haqiqiyini soxta narsadan ajrata olmasligi uchun [19]. Har qanday muhitga donolikning aniq darajasini qo'shib, mobil kengaytirilgan haqiqat odamlarga ma'lumot yetkazish usulini butunlay o'zgartirishi mumkin. Foydalanuvchilar jismoniy muhitda raqamli tarkib bilan o'zaro aloqada bo'lishlari, tegishli ma'lumotlarni namoyish qilishlari, savollar berishlari va ularga javob berishlari va birgalikda ishlashlari mumkin. Haqiqiy harakatchanlik ushbu texnologiya tufayli tartibga solinadigan tadqiqot kontekstlaridan tashqarida amalga oshiriladi. Bu zamonaviy kompyuterlar, simsiz aloqa, global xaritalash texnikasi va

geografik joylashuvni o'z ichiga olgan bir qator gadjetlarni birlashtirishni talab qiladi. hisob-kitoblar va xizmatlar. Umuman olganda, mobil kengaytirilgan haqiqat atrof-muhitga foydalanuvchi aloqasi sifatida harakat qilish imkonini beradi.

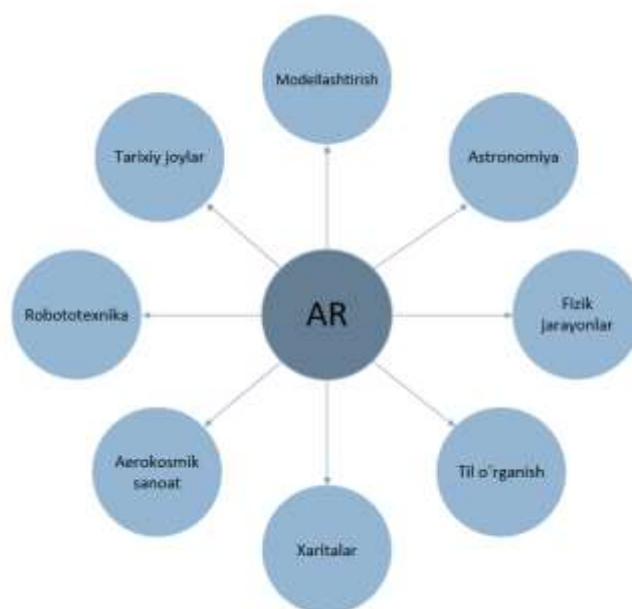
Sinfda ARdan foydalanganda o'quvchilarning ishtiyoqi, ishtiroki va o'quvchilar erishgan kognitiv yutuqlari yaxshilanishini isbotlangan. Tadqiqotlar shuni ko'rsatdiki, grafik, ko'p qirrali va faol ishtirok etishni rag'batlantiradigan ma'lumotlarni taklif qilish orqali AR ilovalari o'quvchilarning tasavvurini rag'batlantirishi mumkin. Immersiv texnologiyalardan foydalanish talabalarning kursga bo'lgan qiziqishini oshirishi ham ma'lum, chunki ular o'quvchilarni tezda jalb qiladi va o'quv jarayonini yanada faol qiladi. Talabalar o'quv faoliyatida o'zlarini yanada ishonchli his qilganlarida, mashg'ulotlarda to'liq ishtirok etish ehtimoli ko'proq. Bundan tashqari, talabalar qo'shimcha ko'rsatmalarga muhtoj bo'lgan AR ilovalaridan foydalanishlari mumkinligi aniqlandi[20].

Korxonalar ARni maktabda o'qitilishi uchun saxiylik bilan moliyalashtirdilar [10]. Masalan, bir necha yil oldin, 2017 yilda dunyodagi eng yirik Google kompaniyasi 100 dan ortiq turli xil o'quv materiallari bilan arzon narxlardagi AR sinf tajribasini taklif qildi. Talabalarga faqat AR Kit va AR Core-ni qo'llab-quvvatlaydigan smartfon, shuningdek, o'z qurilmalariga allaqachon yuklab olingan ilova kerak bo'ladi va agar ular ushbu ilovalardan foydalanishni xohlamasalar, ular o'z qurilmalaridagi veb-brauzeri orqali ham foydalanishlari mumkin, smartfon, planshet yoki Web AR texnologiyasiga ega kompyuter. Eng yaxshi kengaytirilgan haqiqat platformasi endi mavjud va asboblarning mavjudligi, eskirishi va raqamli qurilmalardan keng foydalanishga asoslangan.

2015 yilda Google virtual haqiqat bosh kiyimlari bilan tajriba o'tkazishni boshladi, AQShning oltita turli Shtatlarida (Nyu-York, Nyu-Jersi, Kaliforniya, Texas, Illinoys va Konnektikut) ular *Expeditions* dasturini, so'ngra Braziliya, yangi Zelandiya, Avstraliya va Buyuk Britaniya kabi turli mamlakatlarda o'z dasturlarini ishga tushirdilar. Expedition Trailblazer Tomonidan. Hisob-kitoblarga ko'ra, ular taxminan 2 yil ichida 2 milliondan ortiq talabalarni qamrab oladi [10]. Shunga qaramay, 2016 yilda Samsung USA tomonidan o'tkazilgan so'rovnoma shuni ko'rsatdiki, 1000 o'qituvchilarining atigi 2 foizi o'z darslarida virtual haqiqatdan foydalanadilar. 2018 yilda 115 o'qituvchi o'rtasida o'tkazilgan tadqiqotga ko'ra, kengaytirilgan va virtual haqiqat texnologiyalaridan foydalanish zarur dasturiy ta'minot va qo'shimcha qurilmalarni sotib olish uchun mablag' yetishmasligi, shuningdek AR-VR minigarnituralaridan qanday foydalanish bo'yicha bilimlarning yetishmasligi (kengaytirilgan haqiqat - virtual haqiqat). Agar ular o'quvchilarga

resurslarni o'zlari taqdim qilsalar yoki o'z resurslaridan foydalanishlari mumkin bo'lsa, ta'lim tizimi ARga to'liq kirib borishi mumkin edi [10].

Har bir o'quvchining talablari va afzalliklarini hisobga olgan holda individual va moslashuvchan ta'lim imkoniyatlarini ta'minlash uchun AR o'rganish uchun tobora ko'proq foydalanilmoqda. U ko'plab sohalarda, shu jumladan tillarni o'rganish, o'rta asrlarni qayta qurish, hisoblash, robototexnika, astronomiya, aerokosmik, fizik modellashtirish va geografik sohalarda o'qitish uchun ishlatilishi mumkin (Rasm 2). AR sinovlari, o'yinlar va o'zgartirilgan kartalar yordamida zerikishni kamaytirish va motivatsiyani oshirish mumkin. Biroq, kengaytirilgan haqiqat elementlaridan foydalanishda texnik muammolar paydo bo'lishi mumkin va bu barcha talabalar yoki kurslarga mos kelmasligi yoki barcha ta'lim talablariga javob berishi mumkin.



Rasm 2. AR ning qo'llanilishi mumkin bo'lgan sohalar

## IV. TAHLIL

### A. ARning afzalliklari

1) *Talabalarni boshqarish va motivatsiyasini yaxshilash*: AR o'quvchilarning motivatsiyasi va o'rganish istagini oshirishi mumkin bo'lgan interaktiv va qiziqarli o'rganish tajribasini taqdim etadi. Kengaytirilgan haqiqat, o'rganishni yanada qiziqarli va immersiv qiladi, bu esa o'quvchilarning mavzuga bo'lgan qiziqishini ortiradi. Talabalar o'quv jarayonida faol ishtirok etganda ma'lumotni eslab qolish ehtimoli ko'proq va bu maqsadga erishishning o'ziga xos usulini ta'minlaydi.



2) *Talabalar o'rtasida guruh bilan kelishib ishlashlik ruhini paydo qilish*: AR talabalar o'rtasida hamkorlik va jamoaviy ishlashga hissa qo'shishi mumkin, bu ularga muammolarni hal qilish va topshiriqlarni bajarish uchun birgalikda ishlashga imkon beradi. Kengaytirilgan haqiqat, shuningdek, umumiy o'rganish tajribasini taqdim etishi mumkin, o'quvchilarga bir vaqtning o'zida bir xil virtual ob'yektlar va ma'lumotlar bilan o'zaro aloqada bo'lish imkonini beradi. Bu barcha talabalar ishtirok etish va hissa qo'shish imkoniyatiga ega bo'lgan yanada inklyuziv o'quv muhitini yaratishga hissa qo'shishi mumkin.

3) *Kognitiv ko'nikmalarni rivojlantirishga yordam beradi*: AR o'quvchilarga tanqidiy fikrlash, muammolarni hal qilish va fazoviy fikrlashni o'z ichiga olgan bir qator kognitiv ko'nikmalarni rivojlantirishga yordam beradi. Kengaytirilgan haqiqat talabalarga murakkab tushunchalarni tasavvur qilish, virtual ob'yektlarni boshqarish va Real dunyo stsenariylarini modellashtirish imkoniyatlarini taqdim etishi mumkin. Bu o'quvchilarga mavzuni chuqurroq tushunishga yordam beradi va bu bilimlarni yangi vaziyatlarda qo'llash qobiliyatini yaxshilaydi.

4) *Individual va interaktiv o'rganish tajribasini taqdim etadi*: AR har bir o'quvchining shaxsiy ehtiyojlari va afzalliklariga mos keladigan shaxsiylashtirilgan o'rganish tajribasini taqdim etishi mumkin. AR, Real vaqt rejimida fikr-mulohazalarni taqdim etishi mumkin, bu esa o'quvchilarga o'z taraqqiyotini kuzatish va o'rganish strategiyalarini mos ravishda sozlash imkonini beradi. Kengaytirilgan haqiqat, shuningdek, talabalarga o'z bilimlarini amaliy va qiziqarli tarzda qo'llash imkonini beruvchi interaktiv simulyatorlar va stsenariylarni taqdim etishi mumkin.

5) *Jarayonga ishtirok etish va motivatsiyani oshirish*: kengaytirilgan haqiqat talabalar uchun qo'shimcha qiziqarli, dinamik ta'lim muhiti sifatida o'rganishni yanada qiziqarli qilishi mumkin. Talabalar mavhum tushunchalarni tasavvur qilishlari va ularning haqiqiy hayot stsenariylari bilan qanday bog'liqligini ko'rishlari mumkin. Bu ularning mavzuga bo'lgan qiziqishi va faolligini oshirishi mumkin.

6) *Xotirani yaxshilash*: AR o'quvchilarning ma'lumotni eslab qolishlarini yaxshilashi mumkin, chunki u vizual va eshitish signallarini birlashtirib, ko'p sensorli tajribani ta'minlaydi, AR o'quvchilarga o'rganayotgan narsalarini yaxshiroq eslab qolishga yordam beradi [21].

7) *Individual ta'lim*: kengaytirilgan haqiqat individual ta'lim tajribasini ta'minlash uchun o'quvchilarning individual talablari va moslashish uslublariga moslasha oladi. Shuningdek, u talabalarga yaxshilanishi kerak bo'lgan sohalarni aniqlashga imkon beradigan tezkor fikr-mulohazalarni taqdim etadi [19].

8) *Samaradorlik*: kengaytirilgan haqiqat an'anaviy o'qitish usullariga qaraganda arzonroq variant bo'lishi mumkin, chunki u jismoniy o'quv qo'llanmalariga bo'lgan ehtiyojni yo'q qiladi va jismoniy resurslarga bo'lgan ehtiyojni kamaytiradi.

9) *Haqiqiy dunyo konteksti*: AR o'quvchilarga 3D formatida ob'yektlar, joylar va tushunchalarning virtual modellarini o'rganishga imkon berish orqali ularni o'rganish uchun haqiqiy dunyo kontekstini taqdim etishi mumkin. Bu o'rganishni yanada tushunarli va mazmunli qilishi mumkin.

10) *Mavjud ta'lim tizimi*: kengaytirilgan reallik texnologiyasi o'quvchilarga joylashuvi yoki jismoniy imkoniyatlaridan qat'iy nazar, ta'lim mazmuniga kirish imkonini beradi, bu esa ta'limni yanada qulayroq va inklyuziv qiladi.

#### *B. Hozirgi vaqtda mavjud bo'lgan ta'lim muammolari*

1) *Qimmat narx* - asboblarning bir nechta haddan tashqari xarajatlari buni oliy ta'limda kengaytirilgan haqiqatdan foydalanishning asosiy muammolaridan biriga aylantiradi. Ko'pgina maktablar, cheklangan resurslar bilan ishlaydiganlar, AR gadjetlari, dasturlari va takomillashtirishlari uchun xarajatlarni juda katta deb hisoblashlari mumkin. Bundan tashqari, ba'zi maktablar uskunalarni ta'mirlash va takomillashtirish xarajatlari yuqori bo'lganligi sababli kengaytirilgan haqiqatni qabul qilishdan bosh tortishi mumkin.

O'qituvchilar ushbu muammoni hal qilish uchun mobil telefonlar va planshetlardan foydalanadigan arzon AR echimlaridan foydalanishni xohlashlari mumkin. Bu qimmatbaho apparat yoki dasturiy ta'minotdan voz kechmasdan, AR ta'lim muhitiga integratsiyalashning arzon usulini taklif qilishi mumkin.

2) *Ma'lumot yetishmasligi* - ommaviy materiallarning kamligi o'rganishda kengaytirilgan haqiqat bilan bog'liq yana bir muammodir. AR vositalari va dasturlarining ko'pligi mavjud bo'lsa-da, ko'rib chiqilayotgan material ko'pincha faqat ma'lum mavzular yoki sohalarni qamrab oladi. Shu sababli, o'qituvchilar uchun AR o'quv dasturlariga kiritish va AR-dan ko'proq tematik sohalarda foydalanish qiyinroq bo'lishi mumkin.

O'qituvchilar ushbu muammoni hal qilish uchun kengroq fanlar va mavzular uchun kengaytirilgan haqiqatni yaratishga hissa qo'shishlari mumkin. Shuningdek, ular o'z farzandlarining demografik xususiyatlari va kurs ishlariga moslashtirilgan noyob materiallarni yaratish uchun AR yaratuvchilari bilan hamkorlik qilishlari mumkin.

3) *Texnologik muammolar* - texnologik tajriba bilan tanish bo'lmagan o'qituvchilarga kelsak, kengaytirilgan reallik texnologiyasidan foydalanish murakkab va qiyin bo'lishi mumkin. Kengaytirilgan voqelikning ta'lim muhitidagi foydaliligiga texnik muammolar, jumladan, ulanishdagi qiyinchiliklar, koddagi nosozliklar va

qurilmalardagi nosozliklar ham ta'sir qilishi mumkin. O'qituvchilar ushbu muammoni hal qilish uchun virtual haqiqatdan foydalanish va uni ta'lim muassasalarida qo'llash bo'yicha treningdan o'tishlari mumkin. Shuningdek, ular kompyuter uskunalarini to'g'ri sozlash va u bilan bog'liq har qanday muammolarni darhol hal qilishni ta'minlash uchun it mutaxassislari bilan hamkorlik qilishlari mumkin.

4) *Uslubiy to'siqlar* - AR ko'plab afzalliklarga ega bo'lsa-da, u qo'shimcha ravishda ma'lum ta'lim qiyinchiliklarini keltirib chiqarishi mumkin. Masalan, professor-o'qituvchilar uchun AR hozirgi o'qitish strategiyalariga kiritish yoki ARning o'quv sharoitlariga ta'sirini baholash qiyin bo'lishi mumkin. Ushbu qiyinchilikni bartaraf etish uchun o'qituvchilar hozirgi o'quv dasturlarini to'ldiradigan kengaytirilgan haqiqatga asoslangan o'qitish metodologiyalari va baholash vositalarini yaratishga harakat qilishlari mumkin. Shuningdek, ular boshqa fanlarning o'qituvchilari bilan birgalikda AR o'qitishga muvaffaqiyatli kiritish bo'yicha ilg'or tajribalar va amaliyotlarni baham ko'rishlari mumkin.

5) *Axloq bilan bog'liq savollar* - qo'shimcha haqiqatdan foydalanish ta'lim dunyosi hal qilishi kerak bo'lgan axloqiy savollarni tug'diradi. Masalan, ma'lumotlarning anonimligi bilan bog'liq muammolar bo'lishi mumkin, ayniqsa ma'lumotlarni yig'ishda. ARning o'quvchilar salomatligiga bo'lgan ta'siri haqida ham xavotirlar bo'lishi mumkin, ayniqsa asbob uzoq vaqt davomida qo'llanilganda. O'qituvchilar ushbu muammolarni it mutaxassislari va boshqa manfaatdor tomonlar bilan hamkorlikda axborot maxfiyligi va talabalar xavfsizligini kafolatlaydigan qoidalar va jarayonlarni yaratish orqali hal qilishlari mumkin.

6) *Texnik muammolar* - AR ba'zi maktablar uchun amalga oshirish qiyin bo'lishi mumkin bo'lgan texnik uskunalar va dasturiy ta'minotni talab qiladi. Umumiy o'quv jarayoniga ta'sir qiluvchi tarmoq ulanishi, dasturiy ta'minotdagi xatolar va qurilmalarning mosligi kabi texnik muammolar ham paydo bo'lishi mumkin.

7) *Xavfsizlik muammosi* - kengaytirilgan haqiqat ba'zi o'quvchilarni chalkashtirib yuborishi, ko'ngil aynishi yoki boshqa kasaliklarini qo'zg'ashi mumkin. Talabalar, texnologiya bilan chalg'ib va o'quv maqsadlariga bo'lgan e'tiborini yo'qotishi mumkin.

8) *Cheklangan imkoniyatlar* - AR texnologiyasi barcha talabalar uchun mavjud bo'lmasligi mumkin bo'lgan apparat va dasturiy ta'minotni talab qiladi. Muayyan rivojlanish nuqsonlari yoki ko'rish yoki eshitish buzilishi kabi maxsus ta'lim ehtiyojlari bo'lgan talabalar. Bu ta'lim uchun to'siqlarni keltirib chiqarishi va ta'limda kengaytirilgan haqiqat texnologiyalarining inklyuzivligini cheklashi mumkin. Kerakli qurilmalarga yoki Internetga ulanishga ega bo'lmagan talabalar kengaytirilgan reallik darslaridan chetlashtirilishi mumkin.

9) *Texnologiyaga bo'lgan qaramlik*-kengaytirilgan reallik texnologiyasi muammosiz emas va u ishlay qolganda, o'rganish tajribasi yomonlashishi mumkin. Haqiqatan ham AR texnologiyasiga suyanib qolgan talabalar ularsiz o'rganishi qiyin bo'lishi mumkin.

## V.XULOSA

Xulosa qilib aytganda virtual haqiqat yoki AR ta'lim berish usulini tubdan o'zgartirish uchun kuchli vosita ekanligini isbotladi. Yuqorida keltirganimizdek ARni amalga oshirish ba'zi muammolar va cheklovlarga duch keladi, lekin bu muammolar tez orada o'zining optimal yechimini topadi. Kengaytirilgan haqiqatni an'anaviy o'qitish usullarini almashtirish sifatida emas, balki hozirgi o'quv tajribasini yaxshilaydigan qo'shimcha yordamchi vosita sifatida ko'rish kerak. Kengaytirilgan reallik yordamida talabalar haqiqiy vaziyatlarni yanada qiziqarli va tezlik bilan o'rganishlari, virtual ob'yektlar bilan o'zaro aloqada bo'lishlari va 3D formatida murakkab mavzularni tasavvur qilishlari mumkin. Bundan tashqari, AR har xil o'quv uslublariga moslashish va har bir talaba uchun o'quv jarayonini sozlash uchun ishlatilishi mumkin bu esa o'quvchilarni darsga qatnashish ishtiyoqini oshiradi. Biroq, ARni amalga oshirish ehtiyotkorlik bilan rejalashtirishni va uning cheklovlari va qiyinchiliklarini hisobga olishni talab qiladi. Ushbu qiyinchiliklarga qaramay, ta'limda kengaytirilgan voqelikning rivojlanishi tez sur'atlar bilan o'sib bormoqda, biz kengaytirilgan haqiqatni ta'lim tizimiga integratsiyalashning yanada innovatsion va samarali usullarini kutishimiz mumkin.

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## MAQOLLAR VA MATALLAR XALQ OG‘ZAKI IJODI JANRI SIFATIDA

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***Annotatsiya:** Ushbu maqolada xalq donishmandligining nodir namunalari sifatida og‘zaki badiiy ijodning keng tarqalgan mustaqil janrlaridan biri hisoblangan maqollar xususida fikrlar va muallifning mazkur mulohazalarga nisbatan munosabati keltirilgan.*

***Kalit so‘zlar:** maqol, matal, xalq og‘zaki ijodi.*

Millatning o‘zligini ko‘rsatuvchi milliy qadriyatlarini, xalqning madaniyatini ifodalovchi omillardan biri bu xalq og‘zaki ijodidir. Maqollar xalq donishmandligining nodir namunalari sifatida og‘zaki badiiy ijodning keng tarqalgan mustaqil janridir. Shu asnoda ularni „Xalqona axloq-odob qoidalari“ deb atash mumkin. Zero, maqollar xalqning asrlar davomida hayotiy tajribalarida sinalgan, ijtimoiy-siyosiy, ma‘naviy-madaniy, axloqiy-falsafiy qarashlarining g‘oyat ixcham, lo‘nda tarzda ifoda etiluvchi ko‘rinishidir. Maqollar maxsus ijod qilinmaydi, balki ma‘lum bir sharoit taqozosi tufayli sinalgan hayotiy tajribadan tug‘iladigan xulosaning axloqiy bahosi sifatidagi hukm bo‘lib yuzaga keladi. Ular insonlarning turli sohalardagi faoliyatlari jarayonida uzoq muddatli sinovlardan o‘tgan turmush tajribalarining hosilasi, barqaror va o‘zgarmas, to‘g‘ri va haqqoniy xulosasi tarzida yuzaga kelganligini ko‘rsatadi.

Folklorda maqol janri hikmatga yo‘g‘rilganligi, g‘oyat ixcham, lo‘nda va obrazli ifodalanishi bilan xalq paremik ijodining bir qismini tashkil etadi. Biroq maqol janri bugungi kungacha alohida adabiy tur sifatida e‘tirof etilmay, goh xalq nasri, goh xalq poeziyasi tarkibida mavhum holda kichik tur tarzida ko‘rib kelinmoqda.

Xalq og‘zaki ijodining asrlar osha, avloddan-avlodga, tillardan tillarga o‘tib, kamol topib kelayotgan o‘ziga xos janrlaridan biri bu – xalq maqollaridir. Ular ko‘p asrlar davomida xalqning ijtimoiy-iqtisodiy, siyosiy va madaniy tajribalari, hayotiy kuzatishlari asosida yuzaga keladi. Har bir xalqning o‘zligini ko‘rsatib turuvchi

alohida belgilari, xusiyatlari mavjud. Ushbu xususiyatlar ularning an'analari, madaniyati, hayot tarsi, adabiyoti, xalq og'zaki ijodiga ham ta'sir etmay qolmaydi. Xususan, o'tmishdan ota-bobolarning hayot tajribalarini aks ettirib sado berib turuvchi maqollarda ham o'z aksini topadi. Xalq og'zaki ijodidagi har bir janr xalqning intellektual salohiyatini, o'zligini, o'ziga xosligini ko'rsatuvchi vositadir.

O'zbek folklorshunoslari, jumladan, Sobirjon Sodiqov maqollarning paydo bo'lish jarayonini: Ko'pni ko'rgan, zukko va gapga chechan bir odam uni bir necha so'z vositasida yuzaga chiqaradi. Shu tariqa maqol paydo bo'ladi - deb izohlaydi. <sup>1</sup>Haqiqatdan ham, aslida avval og'zaki nutqda paydo bo'luvchi maqollar og'zaki nutqimizda keng qo'llaniladi. Ular nutqimizni ixcham va ravon, teran va mazmunli bayon qilishga yordam beradi. Zero, "So'z ko'rki – maqol" degan gap ham bejiz emas.

"Maqollar xalq aforistik tafakkurining kaliti bo'lib, hajman sinqiq, mazmunan purhikmat, ommaviy va keng tarqalgan janridir. Ularda insonlarning tabiat va jamiyatga munosabatining hamma qirralari axloqiy - falsafiy hukm tarzida baholangan. Maqollar ota-bobolarning asrlar davomida to'plangan hayotiy tajribalarini zamonlar osha yetkazishda ma'naviy ko'prik bo'lib, avlodlarning bir-birlariga bog'lanishlarida beminnat xizmat qilib kelmoqda", - deydi atoqli folklorshunos olim O.Safarov. Darhaqiqat, maqollar o'zlarining ijtimoiy -g'oyaviy vazifalariga ko'ra, asosan keng xalq ommasining, ayrim hollarda esa ba'zi ijtimoiy tabaqa yoki guruhlarning dunyoqarashini ifodalaydi. Shu bois maqollarning mavzu ko'lami juda ham keng bo'lib, bu ko'lam chegara bilmaydi. Zero, ijtimoiy borliqning hech bir sohasi yo'qki, u maqollarda aks etmagan bo'lsa. Maqollar ko'p asrlik hayotiy tajribalar asosida yuzaga kelganligi sababli o'ziga xos tarbiyaviy ahamiyat kasb etadi. Chunki har bir maqol kishilarning uzoq yillar mobaynidagi hayotiy tajribalari hamda turmush sharoitlarida necha martadan sinovlardan o'tadi.

Maqollar xalq ijodiyotining bebaho namunasi bo'lib, o'sha xalqning milliy – madaniy xususiyatlarini, dunyoqarashi va millatning ruhiyatini ifodalaydi. Mashhur tilshunos Dal aytganidek, "Maqollar to'plami – bu xalq tilidan, tajribadan olingan hikmatlar majmuasi, sog'lom aql sarasi, xalqning hayotda orttirgan haqiqati"<sup>2</sup>

Xulosa qilib aytganda, maqol va matallar xalq og'zaki ijodining keng tarqalgan janri hisoblanib, ularning paydo bo'lish vaqti noma'lum, ammo bir narsa shubhasiz: maqol ham, matal ham uzoq antik davrda paydo bo'lgan, shundan beri ular butun tarix davomida xalqqa hamroh bo'lib kelgan.

<sup>1</sup> Samadov Q. Maqollarimiz mohiyatiga doir. T.: O'zbekiston Madaniyati. –1965.

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## THE USE OF PROJECT-BASED LEARNING IN THE CLASSROOM

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### ANNOTATION

*The following article highlights of using project-based learning in the classroom. Author made a imperic research on this issue. The application of the project method in English lessons is being considered language in elementary school. There is one types of projects. It is educational. It is proved that the project method is a method that allows organizing the educational activities of younger schoolchildren, forming universal educational activities, developing the personality of each participant of the project. Special attention is paid to the peculiarities of organizing joint educational activities of students in the project in particular, the organization of group interaction.*

**KEYWORDS:** *educational activity, joint activity, educational project, self-activity, innovative methods.*

### INTRODUCTION

A modern elementary school operates according to the Ministry of Preschool and School Education in Uzbekistan, which is based on a system-activity approach [1]. The teacher is faced with the task of organizing educational activities that it would contribute to the development of universal learning activities, the personality of the student. educational activity is primarily a joint activity, as a result of which the maximum activation of students' communicative activity occurs. One of the most effective forms of joint activity is working in groups. According to the new Educational Standard, it is group work that is most effective for achieving educational results, in particular for the formation of communicative universal educational actions. To organize educational activities in English lessons help with temporary educational technologies. In a modern primary school, various teaching technologies are being implemented aimed at the formation of universal educational activities. One of these technologies is the project method. This method originated in the second half of the XIX century in agricultural schools in the USA, then it was transferred to a general educational school. John Dewey, the founder of the method, set out to make the life of the child meaningful, saturated with creative work and significant achievements, suggesting for this purpose "to build learning through its expedient activity, focusing

onhis personal interest and the practical necessity of the acquired knowledge in later life" [2]. A follower of J. Dewey was William Hurd Kilpatrick, who believed that a project is any activity performed "from the bottom of my heart", with a high degree of self-activity by a group of children united at the moment by a common interest. In Uzbekistan the project method has been known since 1990. Then a group of Uzbek teachers under the leadership of S. T. Shatsky introduced it into educational practice. Development of this the method in Russian schools is also associated with the name of such teachers as V.N. Shulgin, M. V. Krupenina, B. V. Ignatiev, etc. In the system of domestic school education, it was revived in the early 1990s, which was associated with the introduction of educational technologies in the learning process.

### **METHODS**

By the project we mean the joint educational activity of a teacher and students aimed at solving a specific practical problem and obtaining a product. Projects carried out by younger school children can be divided into two groups: educational and educational [3]. The educational project is aimed at solving subject problems and eliminating educational difficulties. One example of an educational project is the project "I play games, I know English better". While studying the topic "Apartment", fourth graders could not memorize the vocabulary on this topic. They asked the teacher to teach them to memorize English words. We discussed this problem together in the lesson and came to the conclusion that it is easier to remember words in a game situation. It was decided to come up with and independently produce lexical games that would help to memorize words faster and easier. Then the decision was made about working on the project. At the first stage of work on the project, students jointly discussed the topic and the idea of the project. An interesting fact is that all the children took part in the discussion, no one stood aside, the name of the project appeared immediately and did not change during the entire work on it. Also at this stage, the goal was set and the tasks of our work were defined. At the second stage, the planning of joint work took place. It was decided to search for information about what kind of games there are, to get acquainted with the games of the United Kingdom- tania and Russia, come up with games for faster memorization of vocabulary on the topic of "Quart shooting". To do this, the students were divided into groups of 4 people. The division into groups was initiated by the children: the students themselves decided who would work with whom and in which group. Tasks were distributed in groups; for example, one person was looking for information about popular games in the UK, another was getting acquainted with games for children in Uzbekistan, two people were looking for information about what games there are on the Internet, and also talked to adults (parents, teachers) and found out what games they play played in children. The

younger students actively worked and presented all the information they collected. After systematization and analysis of the information, the students decided to make board games that would be in the office in a certain place, and they could be played during recess. The following forms of games were defined: "Domino", "Lotto", "Memory" and "Bingo" games.

At the third stage, the students started making board games. The guys were divided into 4 groups again, each group chose a game and worked on it, projects the students discussed the games together, all groups took part in the discussion of each game. At this stage, the time for this work has been determined. It should be noted that the students independently attracted not only teachers of technology and fine arts to the activity (with them they solved issues on the design of the game, the production of chips and cards), but also their parents, who assisted in the design of materials. Thus, joint activities were organized not only by students with each other, but also by students and teachers, parents. When the games were ready, the groups presented them in class: they told about the game, about how the work went, and also gave the opportunity to play games to students of other groups. At the fourth stage, the presentation of the results of joint activities, we decided on the form of the presentation and decided that it would be a master class. secondly, we discussed the time of the event, prepared a presentation, which we organized as part of the foreign language week for students of grades 3-4. Thus, the peculiarity of the organization of educational activities in projects is that it is a joint activity.

## RESULTS

As a result of this activity, subject tasks are solved and educational difficulties are eliminated. There is an opportunity for the realization and development of each student, regardless of his language training and abilities. The main form of organization of such activities is working in groups, which allows you to form a language competence. The division into groups occurs according to the initiative of students, which affects the development of motivation to study the subject. Not only students and teachers can be involved in joint activities, but also parents, teachers of different subject areas. The main task of a teacher in organizing educational activities in a project is to be an assistant, partner and participant in this activity [4]. When working on an educational project, the educational initiative goes beyond the lesson and the program and is embodied in a creative joint product. Let 's give an example of the educational project "Who lives in the tower?". At one of the lessons, after the students told in English about different animals, the teacher formulated a problematic question: "Can different animals live together in one house?". After the discussion, the children came to the conclusion that wild and domestic animals will not be able to live together, predators

with herbivores, too. The students offered many ideas on how to make friends with different animals. After discussing all the ideas, the guys decided to put a spec about the friendly life of various animals in one house. The work on the project lasted one month and passed in several stages. At the first stage, the students jointly discussed the topic and the idea of the project, determined the tasks of working on the project. At the second stage - the stage of planning work on the project - it was decided which animals would live in the same house. To do this, we worked in groups of 4 people. The groups were divided in such a way that each group had students with different language training. Working in a group, students chose animals (3 different animals each), made up stories about them in English, drew and pre they put their own animals. Then they wrote the script of the performance in groups that were formed by the students themselves at their request. Each group came up with its own scenario. After discussion, we chose the most successful one. They showed the script to the head of the school's teaching staff. There was no competition between the groups, as everyone was working on one common project. From the very beginning of the work, the students were focused on the fact that the final assessment would depend on everyone's efforts. In subsequent lessons, the formation of certain speech skills (speaking, listening, reading, writing) is connected moose with a project. While working on the project, the guys used various information from the course of the surrounding world. They exchanged interesting facts that they learned about animals with each other. Moreover, the students themselves selected poems and songs in English for their heroes.

At the third stage, we worked on the production of decorations, masks, and selected the interior. Rehearsals of the play took place after lessons. There were 14 animals living in our miracle house (according to the number of students in the group, everyone got a role). At the fourth stage - the presentation of the project - it was decided to show our performance first-graders of the school. The parents of the "artists" were also invited to the performances. So, the main form of organizing educational activities when working on an educational project is also working in groups. At the same time , groups can for to be trained both on the initiative of younger schoolchildren and from students with different language training. As a result of such activities, students not only receive pre met knowledge, they have personal development, universal educational actions are formed. When using the project method, the role of the teacher also changes. The teacher assumes the role of an organizer of joint activities, a consultant and a colleague in solving the task, obtaining the necessary knowledge and information from various sources, as well as an expert who gives a clear analysis of the results of the completed project.

## DISCUSSION

Working on projects in English lessons is offered by all English language teachers starting from the second grade (from the first year of English language training). Here is an example of a number of topics (tasks) of projects. UMK "English with pleasure" by the authors M. Z. Biboletova, O. A. Denisenko, N. N. Trubaneva offers the following topics for projects: a birthday party, a trip to the miracle forest, my family - my wealth. UMK "Forward" (authors - MV Verbitskaya, B. Ebbs, E. Worell, E. Ward) offer the following topics for projects: acquaintance with Australia, a project about dinosaurs, unusual- new animals, we open the world. In the UMK "Milli" by authors S. I. Azarova, E. N. Druzhinina and others, younger schoolchildren are invited to come up with unusual inhabitants of an unusual planet and tell about them, invent and make a musical instrument for the orchestra, make their own translation of the poem "Humpty Dumpty". To see how effectively this method works, for two years in the 3rd grades of the MBOU "Zonalnenskaya SOSH" of the Tomsk region, monitoring was carried out on the following indicators: experience in processing results and presenting their results- tov, the area of preferences in project and research activities, the degree of usefulness of acquired skills, motivation for project and research activities. Monitoring was carried out according to the methodology developed by the Regional Center for the Development of Education (RCRO), "Questionnaire for determining the level of culture of design and research activities. Results of monitoring "Questionnaire for determining the level of culture- design and research activity" in the project. The monitoring results show that the number of students with a high and medium level of culture of design and research activities has increased in all classes. According to the observations of teachers, younger schoolchildren are waiting with great interest for the end of the topic (according to the English Language Curriculum, projects are supposed to be completed at the end of the topic) in order to start working on the project. By the end of the third grade, students. they try to speak as much as possible in the language being studied while working on the project.

## CONCLUSION

Summing up all of the above, we can conclude that the project method allows you to organize educational activities both in the classroom and in extracurricular H. N. Plotnikova. The method of projects in teaching English in primary school... activities. Within the framework of this method, students work together with each other, with teachers and parents. All work is initiated by the students themselves, the teacher organizer, consultant and participant of joint activities. The results of the activity in the framework of this method are not only subject knowledge and skills, but also personal achievements: the development of independence, skills of cooperation with adults and

peers, the development of the ability not to create conflicts and find ways out of controversial situations. This method also works for metasubject results: willingness to listen to the interlocutor and conduct a dialogue, development of the ability to express one's opinion and argue one's point of view, active use of speech tools to solve communicative tasks [5].

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## RELATIONSHIP OF EDUCATION AND HEALTH

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### **ABSTRACT**

*The relationship between education and health is complex and multifaceted. Higher levels of education are consistently associated with better health outcomes, including lower rates of chronic diseases, longer life expectancy, and overall improved well-being. This relationship can be attributed to the knowledge and skills acquired through education, which enable individuals to make informed decisions about their health and access healthcare services. Additionally, higher education is often linked to higher income levels, which in turn can lead to better access to healthcare and healthier lifestyle choices. However, it is important to acknowledge the bidirectional nature of this relationship, as poor health can also impact educational attainment. Policymakers and educators must recognize and address the interconnectedness of education and health in order to promote overall well-being and improve the lives of individuals and communities.*

**Key words:** Education, health, well-being, chronic diseases, life expectancy, healthcare services, income levels, lifestyle choices, policymakers, interconnectedness, communities.

### **Introduction**

Education and health are closely interconnected, with numerous studies demonstrating the significant impact of education on overall well-being and health outcomes. Research has shown that individuals with higher levels of education tend to have better health, lower rates of chronic diseases, and longer life expectancy. This relationship can be attributed to a variety of factors, including access to healthcare services, income levels, lifestyle choices, and the influence of policymakers on public health initiatives. In this article, we will explore the complex relationship between education and health, and how these two factors are interconnected within



communities. We will also discuss the implications for policymakers and the importance of addressing education as a key determinant of health.

Education and health are two fundamental aspects of human well-being, and their close interconnection has been widely recognized in research and public health initiatives. The impact of education on health outcomes is multifaceted, encompassing various social, economic, and behavioral factors that influence individuals' overall well-being. As such, understanding the complex relationship between education and health is crucial for policymakers and communities seeking to improve public health and reduce health disparities<sup>1</sup>.

In this article, we will delve into the ways in which education influences health outcomes, including access to healthcare, income levels, lifestyle choices, and the broader social and environmental determinants of health. We will also explore the implications of this relationship for public health policies and interventions, as well as the importance of addressing education as a key determinant of health.

By examining the interconnected nature of education and health, we can gain a deeper understanding of the factors that contribute to health disparities and identify opportunities for promoting health equity through targeted education and public health initiatives. Ultimately, recognizing the critical role of education in shaping health outcomes is essential for fostering healthier communities and improving overall population health.

### **Conclusion**

In conclusion, the relationship between education and health is complex and multifaceted, with education serving as a key determinant of health outcomes. By understanding and addressing the various social, economic, and behavioral factors influenced by education, we can work towards reducing health disparities and promoting health equity. It is crucial for policymakers and communities to recognize the importance of education in shaping overall well-being and to prioritize efforts to improve access to quality education as a means of improving public health. By doing so, we can foster healthier communities and ultimately improve population health for all.

I would also like to emphasize that education plays a critical role in shaping health outcomes, with higher levels of education often associated with better health. A number of factors influence these relationships, including socioeconomic status, access to health care, and health behaviors. By removing barriers to education and promoting educational opportunities for all, we can improve health care and reduce health

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1. <sup>1</sup> Marmot, M. (2002). The influence of income on health

disparities. It is imperative that policymakers and communities prioritize education as a key driver of health and invest in improving access to quality education for all. Ultimately, by recognizing the importance of education in building shared well-being, we can create healthier communities and improve public health for everyone.

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## THE USE OF INNOVATIVE METHODS IN LITERATURE CLASSES, SELF-EDUCATION IS THE BASIS OF STUDENTS' COGNITIVE ACTIVITY

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**Abstract:** *This article examines the use of innovative methods in literature lessons with a focus on self-education as the foundation of students' educational activity. By incorporating digital storytelling, literature-based projects, community engagement, and cross-curricular integration, educators can create dynamic and engaging learning experiences that promote deeper understanding and appreciation of literature. The article highlights the benefits of these innovative methods, such as enhanced student engagement, motivation, critical thinking skills, and the development of lifelong learning habits. It also emphasizes the importance of providing teachers with necessary training, resources, and support to successfully implement these methods. Ultimately, the integration of innovative methods in literature lessons fosters self-directed learning and prepares students for the complexities of the 21st century.*

**Keywords:** *innovative methods, literature lessons, self-education, digital storytelling, literature-based projects, community engagement, cross-curricular integration, student engagement, motivation, critical thinking, lifelong learning.*

**Аннотация:** *В данной статье рассматривается использование инновационных методов на уроках литературы с акцентом на самообразование как основу учебной деятельности учащихся. Объединяя цифровое повествование, проекты на основе литературы, участие сообщества и междисциплинарную интеграцию, преподаватели могут создавать динамичный и увлекательный учебный опыт, который способствует более глубокому пониманию и оценке литературы. В статье подчеркиваются преимущества этих инновационных методов, такие как повышение вовлеченности студентов, мотивации, навыков критического мышления и развитие привычек обучения на протяжении всей жизни. В нем также подчеркивается важность предоставления учителям необходимой подготовки, ресурсов и поддержки для успешного внедрения этих методов. В конечном счете, интеграция инновационных методов на уроках литературы способствует самостоятельному обучению и готовит учащихся к сложностям 21 века.*

**Ключевые слова:** *инновационные методы, уроки литературы, самообразование, цифровое повествование, проекты на основе литературы,*

вовлечение сообщества, межпредметная интеграция, вовлечение студентов, мотивация, критическое мышление, обучение на протяжении всей жизни.

**Annotatsiya:** Ushbu maqolada o'quvchilarning o'quv faoliyatining asosi sifatida o'z-o'zini tarbiyalashga e'tibor qaratgan holda adabiyot darslarida innovatsion usullardan foydalanish ko'rib chiqiladi. Raqamli hikoyalar, adabiyotga asoslangan loyihalar, jamoatchilik ishtiroki va kurslararo integratsiyani o'z ichiga olgan holda, o'qituvchilar adabiyotni chuqurroq tushunish va qadrlashga yordam beradigan dinamik va qiziqarli o'rganish tajribalarini yaratishi mumkin. Maqolada talabalar faolligini oshirish, motivatsiya, tanqidiy fikrlash qobiliyatlari va umrbod ta'lim odatlarini rivojlantirish kabi bu innovatsion usullarning afzalliklari ta'kidlangan. Shuningdek, ushbu usullarni muvaffaqiyatli amalga oshirish uchun o'qituvchilarni zarur tayyorgarlik, resurslar va qo'llab-quvvatlash bilan ta'minlash muhimligini ta'kidlaydi. Oxir oqibat, adabiyot darslarida innovatsion usullarning integratsiyalashuvi o'z-o'zini o'rganishni rivojlantiradi va o'quvchilarni 21-asrning murakkabliklariga tayyorlaydi.

**Kalit so'zlar:** innovatsion usullar, adabiyot darslari, o'z-o'zini tarbiyalash, raqamli hikoyalar, adabiyotga asoslangan loyihalar, jamoatchilik ishtiroki, kurslararo integratsiya, talabalarning faolligi, motivatsiya, tanqidiy fikrlash, umrbod ta'lim.

### Introduction:

Literature classes play a vital role in shaping students' understanding of the world, fostering critical thinking, and nurturing a love for reading and storytelling. As education evolves in response to the demands of the digital age and the ever-changing landscape of knowledge and skills, innovative methods are emerging as powerful tools to enhance the effectiveness and relevance of literature education. This article explores the use of innovative methods in literature classes, with a particular focus on how self-education can serve as the foundation of students' educational activity.

Innovative methods in literature classes encompass a wide range of approaches that go beyond traditional lecture-based instruction and rote memorization. They involve active and participatory learning experiences that engage students in meaningful ways, fostering their creativity, critical thinking, collaboration, and digital literacy skills. By placing self-education at the core of students' educational activities, innovative methods empower learners to take ownership of their learning journey, develop a deeper understanding of literary texts, and make connections between literature and their own lives.

The integration of innovative methods in literature classes opens up new avenues for exploration and engagement. Collaborative learning, for example, encourages

students to work together, exchange ideas, and develop a collective understanding of literary concepts. Through authentic connections, students can explore the relevance of literature in real-world contexts, fostering a deeper appreciation for the power of storytelling to reflect human experiences. Innovative methods also cultivate empathy and emotional intelligence by immersing students in the perspectives and experiences of literary characters.

Moreover, innovative methods in literature classes embrace the integration of multicultural and diverse literature, providing students with exposure to a wide range of voices and perspectives. By utilizing technology, educators can adapt to changing trends and leverage digital tools to create interactive and immersive literary experiences. The incorporation of contemporary literature, gamification, and transdisciplinary connections further enriches students' learning experiences, making literature more accessible and relatable.

Throughout this article, we will examine various aspects of using innovative methods in literature classes and the central role of self-education in students' educational activity. From digital storytelling and literature-based projects to community engagement and cross-curricular integration, these methods empower students to become active participants in their literary exploration, fostering a lifelong love for literature and a deeper understanding of its significance.

In the following sections, we will delve into the benefits and practical implications of these innovative methods, highlighting their impact on students' academic growth, personal development, and cultural awareness. By embracing innovative approaches in literature education, educators can create dynamic and transformative learning experiences that prepare students for the challenges and opportunities of the 21st century.

### **Literature Analysis and Methods:**

Prior research has explored various innovative instructional methods to engage students in literature classes, including multimedia, online learning, student-led discussions, and creative projects (Smagorinsky, 2001; Larson, 2009). Scholars have examined how such active learning techniques promote self-education in literature analysis and interpretation (Witte, 2007; Kooy, 2006). However, limited synthesis exists on the comprehensive range of innovative methods that can foster self-directed learning in literature coursework. This review aims to consolidate findings in this domain. In recent years, there has been a growing body of research and literature highlighting the benefits of using innovative methods in literature classes. These methods not only enhance students' engagement and motivation but also promote their cognitive and socio-emotional development. By integrating self-education as the basis

of students' educational activity, these methods empower learners to take an active role in their literary exploration and foster a deeper understanding of the texts they encounter.

One prominent approach in using innovative methods is digital storytelling. Digital storytelling allows students to create multimedia narratives that incorporate various media elements, such as images, videos, and sound effects, to enhance their storytelling. This method encourages students to think critically about the themes, characters, and settings of literary works and express their interpretations in creative and visually appealing ways. Research has shown that digital storytelling not only enhances students' understanding and retention of literary concepts but also improves their digital literacy skills and ability to communicate effectively in a multimedia-rich world.

Literature-based projects are another effective method in literature classes. These projects provide students with opportunities to delve deeper into literary works by conducting research, exploring historical contexts, and engaging in creative activities. Students can choose to create artistic representations, develop interactive websites, or propose their own research topics related to the literature they are studying. Literature-based projects promote critical thinking, problem-solving, and presentation skills while fostering a sense of ownership and personal connection to the texts. Research has demonstrated that such projects increase students' motivation, deepen their understanding of literary themes, and improve their ability to analyze and interpret texts.

Innovative methods also emphasize community engagement as a means to enhance students' literary experiences. Collaborative projects with local libraries, community organizations, or virtual literary communities allow students to connect with a wider audience and engage in meaningful discussions about literature. Book clubs, author visits, and literary events organized in collaboration with the community provide students with authentic contexts to share their literary insights and develop a sense of belonging within the literary world. Community engagement not only enhances students' appreciation for literature but also cultivates their social and communication skills.

Cross-curricular integration is another effective strategy in literature classes. By integrating literature with other subject areas, such as science, history, or art, students can make interdisciplinary connections and gain a deeper understanding of the societal, cultural, and scientific contexts in which literary works are created. For example, exploring the ethical implications of scientific advancements in science fiction

literature or examining the historical background of a literary piece enhances students' critical thinking skills and broadens their perspectives.

To implement these innovative methods effectively, educators need to create a supportive and inclusive learning environment. This includes providing students with choices in their reading selections, allowing for autonomy and self-direction in their learning, and encouraging reflection and metacognition. By fostering an atmosphere of creativity, collaboration, and exploration, educators can empower students to take ownership of their literary education and develop a lifelong love for literature.

In conclusion, integrating innovative methods in literature classes with a focus on self-education as the basis of students' educational activity offers numerous benefits. Through digital storytelling, literature-based projects, community engagement, and cross-curricular integration, educators can create engaging and meaningful learning experiences that foster students' cognitive, socio-emotional, and digital literacy skills. By emphasizing self-education, educators empower students to become active participants in their literary exploration, encouraging a deeper understanding and appreciation of literature and its relevance in their lives.

### **Discussion:**

The use of innovative methods in literature classes, with an emphasis on self-education as the basis of students' educational activity, opens up new possibilities for transforming traditional approaches to teaching and learning. By incorporating digital storytelling, literature-based projects, community engagement, cross-curricular integration, and other innovative strategies, educators can create dynamic and engaging learning experiences that foster a deeper understanding and appreciation of literature.

One of the key advantages of incorporating innovative methods is the enhancement of student engagement and motivation. By leveraging digital tools, multimedia elements, and interactive platforms, educators can create immersive literary experiences that captivate students' interest and imagination. This active engagement promotes a sense of ownership and personal connection to the texts, leading to greater intrinsic motivation and a desire to explore literature further.

Innovative methods also offer opportunities for students to develop a wide range of skills beyond traditional literary analysis. Through digital storytelling, students not only improve their understanding of literary concepts but also enhance their digital literacy skills, creativity, and communication abilities. Literature-based projects foster critical thinking, problem-solving, and presentation skills, preparing students for real-world challenges. Community engagement enables students to develop social and interpersonal skills while gaining a broader perspective on literature through interactions with diverse audiences.

Furthermore, the integration of literature with other subject areas through cross-curricular connections enhances students' understanding of the multidimensional nature of knowledge. By exploring the intersections between literature and science, history, art, or other disciplines, students develop a holistic understanding of the texts and their broader contexts. This interdisciplinary approach promotes critical thinking, fosters connections between different domains of knowledge, and encourages students to view literature as an integral part of a larger intellectual landscape.

An important aspect of using innovative methods in literature classes is the promotion of self-education. By placing students at the center of their learning journey, educators empower them to take responsibility for their own education. This self-directed approach encourages students to actively seek knowledge, ask questions, and explore their own interests and passions within the realm of literature. Self-education cultivates lifelong learning skills, independence, and a love for reading that extends beyond the confines of the classroom.

It is crucial to note that implementing innovative methods requires careful planning, resources, and ongoing support from educators and educational institutions. Adequate training for teachers, access to digital tools and resources, and a supportive learning environment are essential for successful implementation. Additionally, educators need to continuously assess and adapt their teaching practices to meet the evolving needs of students and leverage emerging technologies and pedagogical approaches.

In conclusion, the use of innovative methods in literature classes, with self-education as the foundation of students' educational activity, offers significant benefits for students' intellectual, emotional, and social growth. By incorporating digital storytelling, literature-based projects, community engagement, cross-curricular integration, and fostering self-directed learning, educators can create transformative learning experiences that go beyond traditional approaches. These methods promote engagement, critical thinking, creativity, and digital literacy skills while fostering a lifelong love for literature. Through innovative methods, literature education becomes a dynamic and meaningful journey that prepares students for the complexities of the 21st century.

### **Conclusion:**

The integration of innovative methods in literature classes, with self-education as the foundation of students' educational activity, holds tremendous potential for transforming traditional approaches to teaching and learning. Through the incorporation of digital storytelling, literature-based projects, community engagement, cross-curricular integration, and other innovative strategies, educators can create



dynamic and engaging learning experiences that foster a deeper understanding and appreciation of literature.

By embracing innovative methods, educators can enhance student engagement, motivation, and critical thinking skills. Digital storytelling allows students to creatively express their interpretations of literary works while improving their digital literacy skills. Literature-based projects provide opportunities for students to delve deeper into texts, conduct research, and develop a sense of ownership and connection. Community engagement enables students to interact with diverse audiences, fostering social skills, and broadening their perspectives. Cross-curricular integration promotes interdisciplinary connections, enabling students to see the multidimensional nature of knowledge and its applications in real-world contexts.

Additionally, the emphasis on self-education empowers students to take an active role in their own learning journey. By encouraging autonomy, curiosity, and self-directed exploration, educators cultivate lifelong learners who are motivated to seek knowledge and make meaningful connections within the realm of literature. This self-education approach not only enhances students' academic growth but also nurtures a love for reading and a sense of personal fulfillment.

While the implementation of innovative methods requires careful planning, resources, and ongoing support, the benefits far outweigh the challenges. By providing educators with the necessary training, access to digital tools, and a supportive learning environment, educational institutions can facilitate the successful integration of innovative methods in literature classes. Moreover, continuous assessment and adaptation of teaching practices ensure that these methods remain relevant and effective in meeting the evolving needs of students.

In conclusion, the use of innovative methods in literature classes, with self-education as the basis of students' educational activity, has the potential to revolutionize literature education. By fostering engagement, critical thinking, creativity, and digital literacy skills, these methods prepare students for the demands of the 21st century. Through their active participation and exploration, students develop a deeper understanding and appreciation of literature, making connections between texts and their own lives. Ultimately, innovative methods empower students to become lifelong learners who embrace literature as a source of knowledge, inspiration, and personal growth.

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## ОРГАНИЗАЦИЯ САМОСТОЯТЕЛЬНОЙ РАБОТЫ СТУДЕНТОВ ПРИ КРЕДИТНО-МОДУЛЬНОЙ СИСТЕМЕ ОБУЧЕНИЯ

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### АННОТАЦИЯ

*В статье рассматриваются особенности организации самостоятельной работы студентов при кредитно-модульной системе обучения по специальным дисциплинам. Обзорно изучено внедрение кредитно-модульной системы по Болонской декларации в образовательный процесс Узбекистана. В заключении даются выводы, характеризующие самостоятельную работу студентов как один из факторов кредитно-модульной системы обучения. Ключевые слова: кредитно-модульная система, самостоятельная работа, рейтинговая система оценивания.*

**Ключевые слова:** кредитно-модульная систем, студент, самостоятельная работа, внедрение, система, знания.

## THE ORGANIZATION OF STUDENT'S INDEPENDENT WORKS UNDER A CREDIT-MODULE TRAINING SYSTEM

### ABSTRACT

*The article examines the features of organizing independent work of students under the credit-module system of education in special disciplines. The introduction of the credit-modular system according to the Bologna Declaration into the educational process of Uzbekistan has been reviewed. As a result, conclusions are given that characterize the independent work of students as one of the factors of the credit-module education system. Key words: credit-module system, independent work, rating assessment system.*

**Keywords:** credit-module system, student, independent work, implementation, system, knowledge.

## **ВВЕДЕНИЕ**

Современная наука создала мощный научный потенциал, который находит свое практическое применение в различных отраслях, что служит основой для укрепления национальной государственности и экономической независимости республики Узбекистан во многих сферах.

Успех деятельности каждого – начиная ученика и педагога, специалиста и предприятия, да и в целом государства, в силу ограниченности естественных, природных ресурсов, в значительной мере сегодня определяется тем, насколько широко внедряются достижения научно-технического прогресса, наукоемкие технологии, уровнем профессиональной подготовленности кадров. 2 «Опыт развитых стран показывает, что без адаптации учебных заведений к требованиям времени трудно достичь научных и технологических успехов», - отметил Президент Республики Узбекистан Шавкат Мирзиёев. [2] В Указе Президента Республики Узбекистан «Об утверждении Концепции развития системы высшего образования Республики Узбекистан на период до 2030 года» от 8 октября 2019 года № УП-5847 предусмотрен поэтапный переход к внедрению передовых стандартов высшего образования.[1]

## **АНАЛИЗ ЛИТЕРАТУРЫ И МЕТОДОЛОГИЯ**

Перед высшими образовательными учреждениями поставлена задача постепенного перехода учебного процесса на кредитно-модульную систему. В нашей стране на протяжении последних пяти лет образовательная система поэтапно переходит на кредитно-модульную систему обучения европейского типа и уже имеются положительные результаты. Кредитно-модульная система внедрена в 16% высших образовательных учреждений в 2023 году, должна быть внедрена в 57% – в 2025 году и 85 % – в 2030 году. [5] Данный опыт поэтапно внедряется в национальных вузах. Например, в соответствии с Указом Президента Республики Узбекистан № УП-5349 от 19.02.2018 г. «О мерах по дальнейшему совершенствованию сферы информационных технологий и коммуникаций» в Ташкентском университете информационных технологий имени Мухаммада ал-Хоразмий (ТУИТ) поэтапно осуществлялся переход на кредитную систему образования с 2018-2019 учебного года.

Одним из преимуществ внедрения кредитной системы образования в этих вузах является то, что она дополняет и поддерживает национальные стандарты квалификаций. Следует указать, что Европейская система взаимозачетов кредитов была введена в 1989 г. в рамках проекта «Эразмус» (Erasmus), который позднее стал частью более широкого образовательного проекта «Сократ» (Socrates programme). В 2020-2021 учебном году в не менее 35 государственных

вузах Узбекистана обучение на первом курсе организовано по кредитно-модульной системе.[3] К числу этих вузов относится и Навоийский государственный педагогический институт.

### **РЕЗУЛЬТАТЫ**

В кредитно-модульной системе используется учебный процесс, который основывается на объединении модульных технологий обучения и зачетных кредитов. Организация и совершение учебного процесса - это многогранная и сложная система действия и взаимодействия. Внимание в кредитно-модульной системе сосредоточено на двух её характеристиках:

- на самостоятельной работе студентов;
- на ведении кредитно-модульной системы организации учебного процесса и рейтинговой системы оценивания учебных достижений студентов. [3]

Современное положение развития информационного обеспечения открывает широкие возможности доступа к источникам информации и поэтому частично смешивает акценты в планировании учебного процесса в сторону самостоятельной работы.

В кредитно-модульной системе предоставляются две основные функции (по Болонской системе):

1. Содействие мобильности студентов и преподавателей и упрощения переходов из одного университета в другой.
2. Четкое определение объемов проведенной студентом работы с учетом всех видов учебной и научной деятельности.

Сумма кредитов определяет, на что способен студент, который учится по программе. [4]

Требования для получения кредитов: знание теоретического материала в объеме программы любого курса, использование полученных теоретических знаний на практике, выполнение заданий самостоятельной работы, текущего и промежуточного контролей, сдача итогового контроля в установленной форме.

### **ОБСУЖДЕНИЕ**

Рассмотрим виды самостоятельных работ, выполняемых студентами:

- подготовка к уроку – изучение текстов лекций, видеоматериалов, практических занятий и лабораторных отчетов;
- поиск информации – изучение материалов Интернета через дайджест, представленный по интересам;
- FAQ (часто задаваемые вопросы) – ответы на интересующие вопросы посредством образовательных программ;

- Форум – обмен идеями по темам науки в телеграмм-каналах или платформах дистанционного обучения;
- решение тестов – закрепление материалов, относящихся к модулю науки, путем отработки в тестовых программах учителя;
- подготовка к контрольной работе – подготовка к ожидаемым промежуточным и итоговый контроль по науке;
- решение задачи, заданной по теме практического занятия, и изложение ее в письменной форме;
- составление реферата – письменное изложение проблемы, по которой интерпретируются научные источники или аналитически описываются научные работы, книги;
- написание эссе – письменное изложение своего личного мнения по заданной теме в критическом, публицистическом и других жанрах;
- выполнение кейс-стади(case study) решения проблем в производстве по установленной форме;
- использование деловых игр – приобретение профессиональных навыков путем имитации процессов профессиональной деятельности, разыгрывания ролей;
- составление глоссариев – краткое объяснение терминов по заданной теме;
- групповой проект – 3-5 студентов выполняют проектную работу в сотрудничестве;
- расчетно-чертежные работы – графические и расчетные работы, написанные на основе установленных методических пособий, которые обычно выполняются в технических науках (инженерная графика, электротехника, информационные технологии и т. д.);
- участие в научных кружках – подготовка учащимся демонстрационных материалов: модели, макеты, слайды, образцы в научных кружках;
- участие в конкурсах – участие студентов в различных конкурсах под научным руководством преподавателя («Юный изобретатель», студент стартап-проекты и т.д.);
- участие в научных олимпиадах, проводимых между высшими учебными заведениями в области науки;
- выступление на научных республиканских и международных конференциях высших учебных заведений по теме научных исследований;
- публикация тезисов в сборниках научных конференций и статей по тематике научных исследований в научных журналах;
- участие в подготовке учебно-методических материалов - учебников, учебных пособий;

- методическое участие в подготовке пособий, методических указаний и другой учебно-методической литературы;

Виды самостоятельных работ обучающегося под руководством преподавателя в электронной форме:

- составление диаграммы – анализ таблиц, диаграмм и схем в ограниченном объеме;

- написание рецензии – написание аннотации к представленному ресурсу;

- студент выполняет SWOT-анализ концепции в ограниченном объеме;

- интервью – организация беседы по исследованию проблемы и выгрузка ее на платформу дистанционного обучения;

- Google Apps – совместное создание слайдов, таблиц и текстов на платформе Google Classroom;

- Дайджест – проведение набора интернет-ссылок по заданной теме, составление картотеки и их обобщение;

- Отчет – студенты вносят свои отчеты по лабораторным занятиям в платформу дистанционного обучения.

### **ЗАКЛЮЧЕНИЕ**

Темы самостоятельной работы распределяются на промежуточные и текущие контроли. Как видим, для студента - будущего специалиста - важно не только осмыслить и усвоить информацию, но и овладеть способами ее практического применения и принятия решений. При таких условиях расширяется применение инновационных форм работы студентов под руководством тьютора и полноценной самостоятельной работы обучающихся, что особенно важно для системы дистанционного образования. Следует указать главное, переход к кредитно-модульной системе обучения способствует максимальной мобильности и преподавателей и студентов. Исходя из того, что главная цель нашего общества – воспитание гармонично развитого человека, в формировании личности, профессиональных навыков специалиста огромное значение имеет самостоятельное обучение. И поэтому одной из главных задач современного образования являются перестройка и адаптация сознания студентов к сегодняшним решениям, привитие им навыков самообразования, творческого использования полученных знаний. Студенты, работающие самостоятельно, могут принимать конкретные решения, вносить серьёзные предложения, могут выбирать методы работы в процессе самостоятельного обучения.

История развития человеческого мышления показала, насколько велика роль самоусовершенствования в становлении личности. Самостоятельное

обучение является самым продуктивным методом самоусовершенствования, так как, испокон веков люди умственного труда предпочитают совместить все виды образования, в том числе и самостоятельное. Самостоятельная работа студента – индивидуально организованная работа, включающая в свою структуру такие компоненты как - уяснение цели и поставленной учебной задачи;

- чёткое и системное планирование самостоятельной работы;
- поиск необходимой учебной и научной информации;
- освоение собственной информации и её логическая переработка;
- использование методов научно-исследовательской работы для анализа художественного произведения;
- выработка собственных взглядов, личную позицию при составлении характеров;
- умение презентовать полученные знания по литературоведческим дисциплинам;
- установление самоанализа и самоконтроля;
- учебно-познавательная деятельность;
- саморегуляция, самоуправление, мотивация к самостоятельному обучению.

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## INTERACTIVE ACTIVITIES AND EFFECTIVE METHODS OF DISTANCE LEARNING IN LANGUAGE TEACHING

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**Abstract.** *This article is dedicated to develop effective distance learning methods for teaching English classes through a comprehensive approach that takes into consideration the unique learning needs of students and evolving nature of teaching practices. There are some effective ways to develop a successful distance learning program for English language classes.*

**Key words:** *Distance, learning, technology, requirements, technical, specialist, space, resources, effective, approach, language, foreign.*

The modern world has entered a period of global changes and intercultural communications in various spheres of human activity and needs highly qualified specialists with deep knowledge of foreign languages.

Distance education is becoming a new standard for higher education in Uzbekistan.

Distance education, especially for specialists, already who own one profession and want to improve their skills in the field of English as a language of international communication for the purpose of exercising their professional activities at a higher quality level and for the purpose of professional communication with foreign partners. They manifest the desire to learn foreign languages remotely, with good quality and get a second diploma, because in teaching a foreign language they see an opportunity to advance their careers.

Distance learning of foreign languages is advancing in the world, universities offer programs and courses for learning foreign languages online. British, Canadian, American universities offer many distance learning programs in foreign languages: The University of Dundee, The Open University (GB) and so on.

Over the past two or three years, the faculty of continuous higher education in the Jizzakh State Pedagogical University and world languages them. Uzbekistan World language University, The National University, along with the traditional academic program, also implement a distance learning program in foreign languages for students from different regions of Uzbekistan who wish to receive second higher education in translation case.

With traditional and mixed forms of education, students have sufficient opportunities for active learning of a foreign language, to optimize their speech (written and oral) skills and competencies in the presence of training partners in the group, a teacher in the classroom. Unlike traditional learning, the distance form does not imply direct contact with teachers and speech participants in the dialogue, polylogue. She aims at independent activity of the student in an individual mode. There is a problem in active language acquisition. This problem can remove if you build the educational process on an electronic platform, setting the content of e-learning, pedagogically aimed at activation of individual activity with using active learning methods. Lack of real learning conditions for direct communication in a foreign language, pair or group work, direct collaboration with teacher is a problem of distance education, especially foreign language, which naturally implies the communication of a student-partner, the distance of the student from teacher and from their communicative group partners. Educational work of students should not be carried out in passive learning. There is a need to find ways activation of the educational communicative activity of the student in the conditions of individualized, remote learning in the mode of distance learning technologies (DET).

The main research method was determined by the qualitative (descriptive) and quantitative approach, observation and interpretation.

Qualitative research made it possible to analyze and interpret active techniques, set out in the development of the lessons. The technology platform is distance learning system Moodle with USWLU as the main means of delivery and organization of educational activities of student comrades. The Moodle online system was used to individual training, and Skype video for contact consultations of the teacher with students.

All students completed their studies within academic year and positively passed intermediate exams at the end of semesters in a foreign language, performing language and speech tests in the FCE/CAE format. The results were recorded in writing tests and in oral form according to the specified parameters and criteria. The process of learning activity of an individual student in remote mode was captured in videos. Distance education (DL) as an element of open education is learning on distance. DL is used by students who, for various reasons, cannot attend contact lessons. They work from home or from the office and study the e-course on their own, complete tasks and interact with each other and with the teacher through Internet. In other words, they take on responsibility for their autonomous learning. N. Sampson (Sampson 2003: 104) defines distance learning as independent distance learning with the help of texts for self-study and remote communication. As Holmberg (1989: 24) points out, people prefer distance

learning convenience, flexibility and adaptability of this mode education to meet the individual needs of students. Most Accurate definition of distance education we we find in M. Simonson: “Distance education is now often defined as: institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors.” Pedagogical aspects of distance learning of foreign languages are gradually analyzed and studied in the literature. Teaching foreign languages through remote technologies is reflected in a number of publications. So, in a monograph O. Tarnopolsky, an innovative constructivist approach is analyzed with a mixed teaching English for special goals and professional communication on university level. Here are described issues of active language learning both in the classroom and outside the classroom independent work, including

Internet - active methods (role-playing game, simulation of professional activity, project work, case studies, discussions, etc.<sup>1</sup> The author uses the term experiential learning for experiential learning that forms the conditions for active learning. Involving students in the acquisition process knowledge and skills development. An analysis of the literature shows that distance education in universities, its principles and organization, technical equipment are widely represented in the literature, considering the theoretical foundations distance learning and foreign and domestic experience. The rapid spread of remote education in the world not only opens up students and teachers great opportunities, but also creates a lot of problems. Students work autonomously, which raises many questions, such as: Does this lead to enough quality education? Are materials developed by specialist educators as effective and active for a distance student, as well as for a traditional students. The active participation of each student is a necessary aspect in learning. Students perform learning activities and at the same time reflect on the work to be done and its purpose, while improving their thinking abilities. All active learning methods are designed to solve the main problem - to develop critical thinking based on the analysis of professionally oriented situations, independent search for information, building a logical chain and making an informed decision. In teaching foreign languages, the principle activity acquires an important role, since mastering the target language is possible in that if each student is an active participant in the process, if he is involved in speech activity.

Active teaching methods are such teaching methods in which the student’s activity is productive, creative, search character. Active learning methods include didactic games, analysis of specific situations, problem solving, training in algorithm, brainstorming, out-of-context operations with concepts, etc.

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<sup>1</sup> Tarnopolsky 2012: 20-71).

On active learning in general, there is an extensive scientific and pedagogical literature that is in demand in our time. The literature distinguishes between the concepts of active and interactive when learning foreign languages. Active learning versus passive learning different from interactive. Interactive training involves the presence of partners and the implementation of multi-vector contacts between all participants in the educational process (teachers, students, groups). Interactive methods can be seen as the most modern form of active methods.

Kolb's learning cycle. One of the most effective adult learning methods is

Kolb cycle. Psychologists David Kolb and Roger Fryem developed the model, teaching adults. Kolb Model – Theory adult education, aimed at the gradual formation of mental actions. She is widely used in various variations during interactive lessons<sup>1</sup>. This model is suitable for anyone person, because the student already has: life experience that will help in learning, willingness to learn in order to achieve the desired goal, conscious learning. The Kolb method has been used in distance learning. So, the student who received this task, immediately chose the role of a thinker and discussed problematic issues. The student's response can be recorded in Audacity and sent for verification or it is produced with a Skype consultation. Professional opinion. Other new and specific way of active participation distance students in the discussion of issues in a foreign language is the reception "The opinion of a professional on the topic studied /problem." This didactic technique is suitable for adult students who already have a first (basic) specialty and professional experience as a lawyer, doctor, economist, architect and other students speak professionally on a single problem and give their solution based on the vision of their specialty. Yes, lawyer solves the problem from a legal point of view, an economist - from an economic point of view, a doctor - from a medical point of view, a translator - from a translation point of view. The answers are complete, balanced, reasoned, peculiar and unique. Answers are also recorded by students in Audacity or sent in writing.

Case study. A specific method of active teaching of foreign languages is case technology. The case study highlights four content components: problem, solution, situation and context<sup>2</sup>. Case studies are valid method of activating the speech-cognitive activity of a distance student, since they imply the definition of a problem in a given situation and search for its solution. At such activities include mental operations of analysis, synthesis and evaluation. I know of a professional foreign language, case situations are systematically presented for independent analytical and educational-speech students' activities.

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<sup>1</sup>(Kolb 2011; McLeod 2013).

<sup>2</sup>Plotnikov 2014: 4

Example of case situations:

Case study. Choosing an educational trip in Uzbekistan.

Situation. You are a guide interpreter. You accompany a group of foreign visitors through the sights in Uzbekistan. While leading the tour, explain your tourists the main features and importance of the sights. Stress the role of Uzbekistan in contributing to the world heritage. State the problem and give a possible solution.

Student responses can be written, executed in different elements of the platform Moodle, or oral as an audio recording of foreign speech.

Reception of reflection. The technology of active learning also includes the technique of reflection. Reflective activity of remote student is a prerequisite teaching discipline in a foreign language.

The current reflection affects the student's reflections on the ongoing subject activity. at the final stage of the lesson, a situational task is offered for the student's reflection on the possibility of his future professional work as a translator in the field under study economics: Granty our time for reflection upon the role of

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## OLIV TA'LIMNING TALABALAR HAYOTIGA TA'SIRI VA PSIXOLOGIK XUSUSIYATLARI

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***Annotatsiya.** Ushbu maqolada Oliy ta'lim talabalar hayotiga ta'sirlari, talabalik hissi va talaba ro'liga kirgan yoshlarning psixologik xususiyatlari shuningdek, talabalarda o'z-o'zini tarbiyalash, boshqarish mexanizmlari, talaba shaxsini shakllantirishda, o'z-o'zini takomillashtirishning ahamiyati xususida so'z yuritildi.*

***Kalit so'zlar:** Oliy ta'lim, nazariya, rivojlanish, psixologiya, tarbiya, inson, talaba, shaxs, ideal, Men o'brazi.*

## ВЛИЯНИЕ И ПСИХОЛОГИЧЕСКИЕ ОСОБЕННОСТИ ВЫСШЕГО ОБРАЗОВАНИЯ НА ЖИЗНЬ СТУДЕНТОВ

***Абстрактный.** В данной статье рассматривается влияние высшего образования на жизнь студентов, ощущение студенчества и психологические особенности молодых людей, вступивших в роль студента, а также значение механизмов самообразования и управления в студентах, а также значение самосовершенствования в формировании личности студента.*

***Ключевые слова:** Высшее образование, теория, развитие, психология, образование, человек, студент, личность, идеал, самооценка.*

## IMPACT AND PSYCHOLOGICAL CHARACTERISTICS OF HIGHER EDUCATION ON THE LIFE OF STUDENTS

***Abstract.** In this article, the effects of higher education on the life of students, the feeling of being a student and the psychological characteristics of young people who have entered the role of a student, as well as the importance of self-education and management mechanisms in students, and the importance of self-improvement in the formation of a student's personality. was discussed.*

***Key word:** Higher education, theory, development, psychology, education, person, student, personality, ideal, self-image.*

O‘zbekiston Respublikasida barkamol, har tomonlama yetuk insonni tarbiyalashda oliy o‘quv muassasalarining ro‘li katta. Shuning uchun barcha ta‘lim muassasalarining moddiy - texnik bazasini, professor - o‘qituvchilar tarkibini, mutaxassislar tayyorlash sturturasini va o‘quv - metodik adabiyotlarni yangilashga qaratilgan islohatlar olib borilmoqda.

Respublikamizda oliy ta‘lim tizimini rivojlantirishda jahon mamlakatlarning ilg‘or g‘oyalari, tarbiyaviy, ta‘limiy nazariyalari, mutaxassislar tayyorlashning boy amaliyoti, hozirgi zamon texnikasi va texnologiyasidan foydalanish hamda milliy, hududiy xususiyatlarini hisobga olib, ularni mahalliy sharoitlarga moslashtirish, shu asosida yangisini ishlab chiqish, ularni keng ko‘lamda qo‘llash bosh omil sanaladi. Oliy o‘quv yurtlarimiz zamonaviy texnika va sharqona tarbiya bilan boshqa mamlakatlardan ajralib turishi lozim. Ularda milliy ruh hukmronlik qilishi kerak. Demak, bugungi yoshlar har tomonlama rivojlangan o‘ziga, boshqa insonlarga, jamiyatga, tabiatga va mehnatga o‘z to‘g‘ri munosabatini bildira oladigan, ijodkor va tadbirkor bo‘lmog‘i lozim.

Talabalik yillarida yoshlarning hayoti va faoliyatida o‘zini o‘zi kamolotga yetkazish jarayoni muhim ro‘l o‘ynaydi, lekin o‘zini boshqarishning tarkibiy qismlari (o‘zini o‘zi tahlil qilish, nazorat etish, bohola, tekshirish va boshqalar) ham alohida ahamiyat kasb etadi. Ideal (yuksak, barqaror, barkamol) “Men”ni real (aniq voqea) “Men” bilan taqqoslash orqali o‘zini o‘zi boshqarishning tarkibiy qismlari amaliy ifodaga ega bo‘ladi. Talabani nuqtai nazaricha, ideal “Men” ham muayyan mezon asosida yetarli darajada tekshirib ko‘rilmagan, shuning uchun ular goho tasodifiy, g‘ayritabiiy his etishi muqarar, binobarin, real “Men” ham shaxsining takamillashuvida bunday obyektiv qarama-qarshiliklar o‘z shaxsiyatiga nisbatan ichki ishonchsizlikni, o‘qishga nisbatan salbiy munosabatni vujudga keltiradi. Jumladan, o‘quv yili boshida talabada ko‘tarinki kayfiyat, oliy o‘quv yurtiga kirganidan zavq-shavq to‘yg‘usi kuzatilsa, ta‘limning shart - sharoiti, mazmuni, mohiyati, kun tartibi, muayyan qonun va qoidalar bilan yaqindan tanishish natijasida uning ruhiyatida keskin tushkunlik ro‘y beradi. Yuqorida aytilgan ichki va tashki vositalar, omillar ta‘sirida uning ruhiy dunyosida umudsizlik, ruhiy parokandalik kayfiyati, ya‘ni istiqbolga ishonchsizlik, ikkinchisi hadiksirash kabi salbiy his tuyg‘ular namoyon bo‘ladi. Oliy ta‘limda tarbiya ishlarini rejalashtirishda, ta‘lim jarayonida talabaga o‘ziga xos munosabatda bo‘lish mazkur davrning muhim sharoitlaridan biridir. Yuqorida aytilganlardan qat‘iy nazar, yigit va qizlar oliy o‘quv yurtiga qabul qilish ularda o‘z kuchlari, qobiliyatlari, aql zakovatlari, ichki imkoniyatlari va irodalariga qat‘iy ishonch bildiradi. Ana shu ishonch o‘z navbatida to‘laqonli hayot va faoliyatni uyushtirishga umid his-tuyg‘usini vujudga keltiradi.

Yosh davri taraqqiyotida talabalik davri o'zining universalligi bilan ajralib turadi. Talabalik davri o'tish bosqichi ya'ni bolalikdan mustaqil yetuklik hayotiga o'tish davri hisoblanadi. Biroq talabalik mutlaqo mustaqil hayot bosqichi bo'lib shaxs qadriyatlari tizimiga egadir. Talabalik davrining yuqori chegarasi esa tarixiy va ijtimoiy jihatdan shartlashgan bo'lib, individual o'zgaruvchidir. Yosh davri chegaralarini aniqlash nima uchun murakkab. "Ulg'ayish" tushunchasining o'zi serqirradir. Biologik ulg'ayish jinsiy yetuklik, nasl qoldirish qobiliyati bilan belgilanadi; Ijtimoiy ulg'ayish esa iqtisodiy mustaqillik, katta odam ro'lini qabul qilinishi, psixologik ulg'ayish yetuk shaxs identifikatsiyasidir. Insoniyat jamiyatda ulg'ayish madaniyati bilimlar tizimi, qadriyatlar, me'yorlar, ijtimoiy an'analar, mehnatga tayyorgarlik mezonlar bilan belgilanadi.

Talabalik ontogenetik taraqqiyotning muhim davri hisoblanib, u turli yo'nalish mualliflari tomonidan turlicha talqin qilinadi. Xususan:

Biogenetik nazariyada asosiy e'tibor biologik taraqqiyotga qaratilgan bo'lib, talabalik davri eng avvalo organizmning jismonan o'sishi bilan belgilanadi.

Psixoanalitik nazariyada (Z.Freyd, A.Freyd) esa talabalik davrida psixoseksual taraqqiyot muayyan bosqichga yetib libidoning instinktiv energiyasi "Men"ning himoya mexanizmlari bilan kompensatsiyalashadi deb hisoblanadi. "U" va "Men" orasidagi qarama-qarshi kurash ulg'ayish va nizoli vaziyatlarning ortishida kuzatiladi, natijada "U" va "Men" orasida yangicha uyg'unlik namoyon bo'ladi. Psixoanalizga qarshi E.Shpranger talabalik davrida individning madaniy o'sishi kuzatiladi, deb hisoblagan. E.Eriksonning psixosotsial nazariyasida esa ilk o'spirinlik va talabalik davrida asosiy e'tibor identifikatsiyaga erishishga, ko'pgina tanlovlar orasidan o'zi uchun yangi o'braz yarata olishiga qaratilishi darkor deb hisoblaydi. [Goziev E. Umumiy psixologiya kursining «Shaxs» bo'limi. (ma'ruzalar matni). T.1999 y. 28-37 b.]

Ijtimoiy nazariyaga ko'ra, talabalik davri ijtimoiylashuvning muhim bosqichi hisoblanib, jamiyat tomonidan ma'qullangan me'yorlarni o'zlashtirilishi tushuniladi.

Psixologik nazariyada esa o'sayotgan individning ichki olami va o'zini o'zi anglashi bilan tavsiflanuvchi sub'ektiv tomoniga va uning ulg'ayishidagi shaxslararo munosabatlarining o'rniga asosiy e'tibor beriladi. Ulg'ayishga individual yondashuv turli tartibda taraqqiyot vazifalarini keltirib chiqaradi. Eng avvalo bu talabalik davri bilan bog'liq. O'tkazilgan tadqiqotlarning ko'rsatishicha, talabalik davrida guruhdagi o'zaro munosabatlar bilan shaxs xususiyatlari o'rtasida ko'p qirrali aloqalar mavjud bo'ladi. Jamoada tarkib topgan o'zaro munosabatlar jamoa a'zolarining qadriyatlari, ahloq no'rmalari va manfaatlari bilan belgilanadigan alohida emotsional psixologik ko'rinishga ega bo'ladi. Jamoaning shaxsga ta'siri singari har bir shaxs faolligi



darajasi, shaxs ushbu jamoada hissiy zo'riqishni qanchalik boshdan kechirishi bilan belgilanadi. Demak, har bir shaxs kamolotining va butun jamoaning yuksak ishchanlik qobiliyatini rag'batlantiruvchi psixologik muhitni tashkil etishni guruh a'zolari o'rtasidagi o'zaro munosabatlarni va unda hukmron bo'lgan qadriyatlarni tartibga solishdan boshlash kerak. Shaxslararo munosabatlar jamoa har bir a'zosiga ijobiy ta'sir ko'rsatib qolmay, shu bilan birga faoliyat unumdorligini oshirishning muhim omili hamdir. Lekin shu bilan bir qatorda jamoa a'zolari o'rtasidagi shaxslararo munosabatlarda nizoli vaziyatlar ham yuzaga kelishi mumkin. Qarama-qarshiliklar, konfliktlar, inqirozlar inson tomonidan boshdan kechirilgan ekan, shaxs rivojlanishi manbai bo'lib hisoblanadi hamda uning konstruktiv yoki destruktiv hayotiy ssenariysini belgilaydi.

Demak oliy ta'limda taxsil olish, bu davrdagi shaxslararo munosabatlar yosh davrlari vazifalarini hal etish shaxs taraqqiyotidagi ko'pgina muammolarni yechimiga imkon yaratadi.

Talabalar deganda moddiy va ma'naviy ishlab chiqarishda ijtimoiy hayotda va mutaxassislikka oid ro'llarni muayyan qoida va maxsus dastur asosida bajarishga tayyorlanayotgan ijtimoiy guruh tushuniladi. Oliy o'quv yurtidagi ta'limning o'ziga xos xususiyatlari talabalarning boshqa ijtimoiy guruhlar bilan (ular xoh rasmiy, xoh norasmiy bo'lishidan qat'iy nazar) muloqotga kirishishi uchun muhim imkoniyatlar yaratadi. Talabalik davrining asosiy xususiyatlaridan biri ijtimoiy yetuklikning jadal sur'atlar bilan ro'yobga chiqishidir. Ma'lumki, ijtimoiy yetuklik (kamolot) shaxsdan zarur aqliy qobiliyatlarni hamda ijtimoiy turmushda bajariladigan turli ro'llarni egallashga (oila qurishga), farzandlarni tarbiyalashga, foydali mehnatda qatnashishga (ma'sul vazifada ishlashga) tayyorlanishni talab qiladi. Mazkur jarayonning bosh mezonlari va ko'rsatgichlari o'rta ma'lumotlilik, jamoatchilik topshiriqlari, mehnatda faollik ko'rsatish, qonunlar oldida javobgarlik, mutaxassis bo'lish imkoniyati, unga intilish tuyg'usi, irodaviy zo'r berish, yosh otalik va onalik burchi, jamoat arbobi vazifasini o'tash, ijtimoiy guruhga rahbarlik qilish, sport bilan shug'ullanish va hokozolardan iborat.

Talaba oliy o'quv yurtida turli fanlarni o'rganish natijasida unda kasbiy yo'nalganlik shakllanadi, ya'ni o'z bilim, tajriba va qobiliyatini tanlagan kasbiy sohasida qo'llash uchun shaxsiy intilish paydo bo'ladi. Shaxsning kasbiy yo'nalganligini takomillashtirish istagi, o'z kasbi sohasida mehnat qilib, moddiy va ma'naviy ehtiyojlarni qondirish istagini o'z ichiga oladi. Kasbiy yo'nalganlik - kasbiy faoliyat maqsad va vazifalarini tushunishni va qabul qilishni o'z ichiga oladi. Kasbiy yo'nalganlik mazmunidagi ijobiy o'zgarishlar bo'lg'usi kasb bilan bog'liq bo'lib, motivlar mustahkamlanishida ko'rinadi: ish bo'yicha o'z majburiyatlarini yaxshi

bajarishga intilish, bilimdon mutaxassis sifatida o'zini ko'rsatish, murakkab o'quv vazifalarini muvaffaqiyatli bajarishga intilish kuchayadi, ishda muvaffaqiyatga erishish istagi kuchayadi.

Psixologlardan B.G.Ananyev, N.V. kuzmina, N.F.Talizina, V.Y.Lyaudis, I.S.Kon, V.T.Lisovskiy, A.A.Badalev, A.A.Petrovskiy, Z.F.Yesareva, M.G.Davletshin, I.I.Ilyasov, A.V.Diitriyeva, A.A.Verblskiy, V.A.Tokyareva va boshqalarning tadqiqotlariga ko'ra, oliy o'quv yurtlarida ta'lim olish talabalar uchun juda og'ir kechadi, chunki, bu davrda shaxsning murakkab fazilatlari, xislatlari, sifatleri takomillashish bosqichida bo'ladi. Mazkur yosh davridagi ijtimoiy psixologik o'sishning xususiyatlaridan biri o'qish faoliyatining ongli motivlari kuchayishidir. Talabalarda axloqiy jarayonlarning o'sishi sust amalga oshsa – da, lekin xulqining eng muhim sifatleri – mustaqillik, tashabbuskorlik, topqirlik, farosatlilik va hakovolar takomillashib boradi. [ Goziev E. Oliy maktab psixologiyasi. T.1997.] Shuningdek, ularda ijtimoiy holatlarga, voqelikka, axloqiy qoidalarga qiziqish, ularni amalga oshirishga intilish toboro kuchayadi. Psixologlarimizning tadqiqotlari shaxs hayot tajribasini egallashda unda o'zligini anglash vujudga kelishini ko'rsatadi. Shaxsiy hayotning mazmunini anglash, aniq turmush rejalarini tuzish, kelajak hayot yo'lini belgilash shular jumlasidandir. Talaba asta – sekin mikroguruhlarining notanish sharoitlariga ko'nikib boradi, o'zining haq – huquqlari va majburiyatlarini bila boshlaydi, shaxslararo munosabatlarning yangicha ko'rinishini o'rnatadi, turmushdagi ijtimoiy ro'llarni amalda shaxsan sinab ko'rishga intiladi. Ulardagi romantik his – tuyg'ular voqelikka muayyan yondoshishga birmuncha halaqit beradi. Chunki ular turmushdagi yutuqlar va muvaffaqiyatlarning ijtimoiy-psixologik ildizlari nimadan ekanligi to'g'risida aniq tasavvurga ega bo'lmaydilar.

Yosh fizologiyasi va psixologiyasi fanlarida to'plangan materiallar taxlilidan ko'rinadiki, talaba 17-19 yoshda ham o'z xulqi va bilim qobiliyatini ongli boshqarish imkoniyatiga ega bo'lmaydi va shunga ko'ra xulq motivlarining asoslanmagani, uzoqni ko'ra olmaslik, ehtiyotsizlik kabi hollar ro'y beradi.

V.T.Lisovskiyning fikricha 19-20 yoshlarda ayrim salbiy hatti - harakatlar ko'zga tashlanadi. Mazkur yoshda xohish va intilishning rivojlanishi iroda va xarakterdan ancha ilgarilab ketadi. Bunda odamning hayotiy tajribasi alohida ro'l o'ynaydi, chunki talaba shu tajriba yetishmasligi natijasida nazariya bilan amaliyotni, fantaziya bilan reallikni, romantika bilan ekzotikani, haqiqat bilan illyuziyani, orzu bilan xohishni, optimizm bilan qat'iylikni aralashtirib yuboradi.

[ Davletshin M.G, Do'smuhamedova Sh. va boshq, Yosh davrlari va pedagogik psixologiya,. —Toshkent, 2007]

Odatda talabalar II va III kurslarda oliy o'quv yurti va mutaxassislikni nima uchun tanlagani haqida yana jiddiy o'ylaydilar. Mazkur yosh davrida o'zini boshqarishning tarkibiy qismlari, ijodiy tafakkur, muayyan hayotiy tajribada o'zlashtirilgan bilimlarni tartibga solish asosida his tuyg'ular, qarashlar, axloqiy qadriyatlar, o'zligini anglash va barqaror e'tiqod shakllanadi. Talaba xukm va xulosa chiqarar. O'z hatti – harakatida qat'iy turib, ularni himoya qiladi, hayotning turli sohalari bo'yicha har xil darajadagi ko'nikma va malakalarga nazariy bilimlar ijtimoiy – psixologik tushunchalarni amaliy faoliyatga tadbiiq etish imkoniyatiga ega bo'ladi.

Xulosa qilib aytganda, Oliy ta'lim yoshlar hayotida tubdan o'zgarishlar paydo qiladigan maskandir. Talabalar o'z mutaxassisligi va hayotiy bilimlarga ega bo'lgan holda tajribali shaxs bo'lib kamol topadi. Shuningdek, talabalar ilmiy va hayotiy dunyoqarashli, pedagogik va psixologik bilimlarga ega kadr holida tayyorlanadi. Talabalarda tafakkurning rivojlanishida, ilmiy dunyoqarashning shakllanishida umumta'lim va ijtimoiy fanlar, jumladan tarix, falsafa, mantiq, iqtisodiy nazariya asoslari, madaniyatshunoslik, adabiyot, etika, estetika, pedagogik, psixologiya kabi o'quv predmetlari muhim ro'l o'ynaydi.

Mamlakatimiz oliy ta'lim yurtlarida ta'lim sohasini yangi bosqichiga ko'tarish, talaba yoshlarning qalbi va ongiga Vatanga muhabbat, milliy va umuminsoniy qadriyatlarga hurmat tuyg'usini singdirish, ularni bizga begona bo'lgan ta'siridan himoyalash, shu ruhda tarbiyalashga katta e'tibor berilmoqda. Yangicha dunyoqarashga ega, mustaqil fikrlaydigan, Vatanimizning yanada ravnaq topishi uchun munosib hissa qo'shishga intiladigan, yetuk minglab yangi avlod mutaxassislari tayyorlanmoqda.

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## TALABALARDIN' JEKE OQIW REJESIN SHO'LKEMLESTIRIWDIN' ILIMIY HA'M NA'ZERIY TIYKARLARI

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***Annotaciya:** Maqalada Ózbekstan Respublikasında oqıwshılardıń individual tálim iskerligin shólkemlestiriw, tálimdi rawajlandırıw ushın qolay shárt-shárayatlar jaratıw, sapalı hám individual kadrlar tayarlawdı támiyinlew, sonıń menen birge, jámiyet hám jámiyettiń zamanagóy talapları hám mútajliklerine tayarlaw tiykarları kórip shıǵıladı.*

***Tayanış sózler:** Kredit-modul sisteması, oqıw procesin shólkemlestiriw, reyting bahalaw sisteması, informaciya blogı, nátiyjeli oqıtıw texnologiyası.*

Ózbekstannıń sociallıq-ekonomikalıq rawajlanıwı joqarı tálim sistemasın túpten jetilistiriwdi belgilep beredi. Kadrlar tayarlawdıń áhmiyeti artıp, joqarı maǵlıwmatlı qánigelardi xalıq aralıq úlgiler dárejesinde qayta tayarlaw ushın shárayat jaratılıp atır. Sociallıq ómir hám ekonomikanıń tábiyiy mútajliklerinen kelip shıǵıp, xalıqaralıq tájiriybeni úyreniw tiykarında tálimge zamanagóy forma hám texnologiyalardı engiziw joqarı tálim sistemasın modernizaciyalawdıń tiykarǵı wazıypalarınan biri esaplanadı. Ózbekstan Respublikasında joqarı tálim sistemasın sistemalı reformalawdıń ústin turatuǵın baǵdarların belgilew, ǵárezsiz pikir júritetuǵın, zamanagóy bilim hám joqarı ruwxıy -etikalıq pazıyletlerge iye bolǵan joqarı maman kadrlar tayarlaw procesin jańa basqıshqa kóteriwdi, joqarı tálimdi modernizaciyalaw, social tarawdı rawajlandırıw hám aldınǵı tálim texnologiyalarına tiykarlanǵan ekonomika tarmaqları tuwrısında Prezident Sh. Mirziyoyevtıń sheshimi qabıllandı.

Mirziyoyevning 2019 -jıl 8-oktyabrdegi “Joqarı tálim sistemasın rawajlandırıw konsepsiyasını tastıyıqlaw tuwrısında”ǵı PD-5847-san. Dáslep, Joqarı tálimdi rawajlandırıw konsepsiyasına kóre, 2023-jılda joqarı tálim mekemeleriniń 16 procentinde, 2025-jılda 57 procentinde hám 2030 -jılda 85 procentinde kredit-modul sisteması engiziliwi kerek. Kredit-modul sistemasınıń maqsetleri joqarı tálim alıw múmkinshiliklerin keńeytiw, studentler hám professor -oqıtıwshılardıń jıldamlıǵın asırıw, sonıń menen birge, oqıw jobaları hám programmaların miynet bazarında talap etiletuǵın ilmiy tájiriybelardi alıwǵa jóneltiriw bolıp tabıladı. Bul sistema ózine tán áhmiyetke iye, sebebi ol túrli universitetlerdegi tálim programmaların salıstırılawdı támiyinleydi hám tálim sistemasın Evropa mámleketleri menen uyqaslastırıwǵa úles

qosadi. Kredit-modul sisteması studentler hám oqıtıwshılardıń jıldamlıgın támiyinleydi hám bir universitetten basqasına ótiwdi ápiwayılastıradı, pútkil oqıw boyınsha orınlańan jumıs kólemin belgileydi. Ózbekstanda keyingi jıllarda tálim sisteması kredit-modullı tálim sistemasına basqıshpa-basqısh ótpekte hám házirde-aq unamalı nátiyjeler bar. Bugán mámleketimizdegi shet el joqarı tálim mekemeleriniń filialları hám xalıqaralıq standartlardı ámelde orınlańan halda oqıw procesin ámelge asırıwshı jergilikli joqarı oqıw orınları mısıl bola aladı. Bul tájiriye birqansha milliy joqarı tálim mekemelerinde basqıshpa-basqısh engizilip atır. Mısalı, Ózbekstan Respublikası Prezidentiniń 19.02.2018-jıldıǵı “Informaciya texnologiyaları hám kommunikaciya salasıń jáne de jetilistiriw ilajları tuwrısında”ǵı PD-5349 -san sheshimine muwapıq Muhammad al- Xorazmiy (TATU). 2018-2019-oqıw jılınan baslap kredit sistemasına ótiw basqıshpa-basqısh ámelge asırılıp atır. Joqarıda tilge alıńan universitetten tısqarı, Milliy universitet, Yuridikalıq universitet, Shıǵıstanıw universiteti, Tashkent medicina universiteti, Tashkent medicina akademiyası, Fergana politexnika institutı hám basqa joqarı oqıw orınları kredit-modullı tálim sistemasında isley basladı. Bul universitetlerde kredit tiykarında tálim sistemasın engiziwdiń abzallıqlarınan biri sonnda, ol milliy ilmiy tájiriye standartların tolıqtıradı hám qollap - quwatlaydı.

Tálim procesiniń kredit-modul sisteması modullı tálim texnologiyaları hám kreditleri yamasa oqıtıw kreditleri kombinaciyasına tiykarlańan oqıw procesin shólkemlestiriw modeli bolıp tabıladı. Oqıw procesin shólkemlestiriw hám ámelge asırıw kóp qırlı hám quramalı háreketler hám óz-ara tásirler sisteması bolıp tabıladı. Kredit-modul sistemasında itibar onıń eki ózgesheligine qaratıladı:

- studentlerdiń ózbetinshe jumısı haqqında;
- oqıw procesin shólkemlestiriwdiń kredit-modul sistemasın hám studentlerdiń oqıw jetiskenliklerin bahalawdıń reyting sistemasın engiziw tuwrısında.

Modullı oqıtıw - tálim informaciya modullarǵa (tolıq hám gárezsiz birlikler, informaciya bólimleri) bólingen tálim procesin shólkemlestiriw. Modul - bul oqıw materialınıń logikalıq tolıqtırılǵan birligin, maqsetli ilajlar programmasın hám maqsetlerge erisiwdi támiyinlew boyınsha kórsetpelerdi óz ishine alǵan maǵlıwmatlar blogı bolıp, olardıń mazmunı hám kólemi didaktik wazıypalarǵa, oqıwshılardıń profili hám dárejesine qaray parıq qılıwı múmkin hám studentlerdiń tálim mekemelerin tańlaw boyınsha tilekleri. Modul kontsepciyası hárqanday anıq jumıstı orınlaw ushın málim teoriyalıq hám ámeliy kónlikpelerdi dáslepki iyelewdi támiyinleytuǵın oqıw materialınıń kólemin óz ishine aladı.

Modullı oqıtıw - maman qánigelardi tayarlaw sapasın kepilliye tuǵın eń uyqas, túsinikli hám nátiyjeli oqıtıw texnologiyası. Modullı texnologiyadan paydalanǵan

halda jaratilgan programmalar boyinsha oqitilgan qanigelar tek gana bilimge, balki ta'lagan kasisibi ham qanigeligi boyinsha konlikpelerga iye: qararlar qabillaw, xizmetler ham islep shigariw jumslarin orinlaw. Modullardin kombinaciyasi studentlardin malim bir qatlamın oqitaw (ham garezsiz uyreniw) ham arawlı didaktik ham kasiplik maqsetlerdi amelge asiraw ushin zarur bolgan aniq oqiw materialın ta'law ham sazlawda zarur maslasıwshaalıq ham erkinlik darejesin tamiyinlewi kerek. Kopsilik Ozbekstanda talim sisteması informaciya ta'nisıqlıgı ham informaciyadan paydalanıw mumkinshiligi sheklengen sharayatta qaliplesken dep esaplaydı. Sol sebepli joqarı oqiw orınlarında oqıtıwshınıń iskerligi, birinshi nawbette, informaciya funkciyalarına qisqartırıldı. Oqıtıwshı eń zarurli maqlıwmat deregi rolin oynadı. Student oqıw procesiniń obyektı ham usı waqıtta maqlıwmattı qabıl etiw ham ozlestiriw obyektı bolganlıgı sebepli, talim procesin joybarlaw sonday amelge asırıldı, jumıstıń tiykarğı bólegi klasta oqıtıwga tuwrı keldi. Informaciya iskerligin rawajlandırıwdıń házirgi jaгдаyı informaciya dereklerinен paydalanıw ushin keń mumkinshiliklerdi ashıp beredi ham sol sebepli oqıw procesin joybarlawdağı itibardı ozbetinshe islewge otkeredi. Kredit-modul sisteması Boloniya deklaraciyasınıń ajıralmaytuğın atributı retinde eki tiykarğı funkciyanı atqaradı:

1. Studentler ham professor oqıtıwshılardıń jıldamlıgın tamiyinlew ham bir universitetten basqasına otiwge jardelesiw. 2. Oqıw ham ilimiy jumıstıń barlıq turlerin esapqa alğan halda student tarepinen atqarılatuğın jumıs kólemin aniq belgilew. Kreditler sanı malim bir programma boyinsha studenttiń nege ılayıqlıgın belgileydi.

Kredit-modul sistemasınıń engizilgeni oqıtıwshı ham studentlardin nátiyjeli miynetin xoshametlewde zarurli faktor bolıp atır. Modullar kasiplik iskerliginiń malim bir obyektine muwapıqlıq belgisi menen birlestirilgen talim elementleri sisteması retinde qurılğan. Ekinshisi garezsiz logikalıq dúziliwge ham mazmunga iye bolgan malim muğdardağı oqıw maqlıwmatları retinde qaraladı, bul bolsa oqıtıwshınıń intellektual iskerligi procesinde bul maqlıwmatlar menen islewge mumkinshilik beredi. Oqıw pániniń mazmunın modullı shólkemlestiriw kem darejede programma bólimlerin oqıw modullarına mexanik turde otkeriw bolıp tabıladı, sebebi ol pánniń semantik mazmunı boyinsha tereń analitik ham logikalıq islerdi, balki sistema retinde qaliplestiriwdi talap etedi. Oqıw procesiniń kredit-modul sistemasında pán mazmunı mazmun modullarına (bir semestrde 2-4 modul) bólinedi, yağniy oqıw páni mazmunlı modullar sisteması retinde qaliplesedi. Pánniń mazmunın shólkemlestiriwdiń modullı principin amelge asırıwdıń ekinshi shárti - bul hár bir moduldı ashıw ham ozlestiriwge qaratılğan kasiplik iskerliginiń ulıwma kesiliken ideyaların ajratıp kórsetiw qábileti. Student - bolajaq qanige ushin tek gana maqlıwmattı túsiniw ham ozlestiriw, balki onı ameliy qollaw ham qarar qabillaw usılların da ozlestiriw zarurli bolıp tabıladı. Bunday

shárayatta tuwrıdan-tuwrı, úshinshi tárep maǵlıwmatlarınıń úlesi hám oqıtıwshı (repetitor) basshılıǵında studentler jumısınń interaktiv formaları hám usıllarınan paydalanıw hám laboratoriyalarda, oqıw zallarında hám keleshekтеgi obyektlerde tolıq ózbetinshe islense, kásiplik iskerlik azayadı, bul aralıqtan oqıtıw sisteması ushın zárúrli bolıp tabıladı.

Kredit sistemasın jaratıw ótilgen kurslardı salıstırıwdı ańsatlastırıwı hám studentlerdiń jıldamlıǵın maksimal dárejede asırıwı kerek. Kredit - bul jıynama oqıw rejesin yamasa oqıw procesinde student tárepinen atqarılatuǵın bólek pándi (kurstı) úyreniwde studenttiń oqıw júklemesin ólshewdiń shártli birligi. Kredit tuwrı hújjetlestirilgen minimal ólshem birligi bolıp, kóbinese, bir háptelik úyreniw mánisin ańlatadı (studenttiń sabaq hám ózbetinshe jumısı jıyındısı).

Kredit sisteması oqıw procesin shólkemlestiriw menen baylanıslı barlıq strukturalıq bólimlerdiń jıyındısın ańlatıwshı oqıw jumısınń miynet tıǵızlıǵı kórsetkishi retinde kredit birliginen paydalanıwǵa tiykarlangan oqıw procesiniń barlıq tiykarǵı tárepleriniń sistemalı táriypi retinde túsiniledi. Kredit kreditleri birinshi ret 18—19-ásirler bosaǵasında Qospa Shtatlardaǵı universitetlerde sol dáwirde baslangan universitet tálimin liberallastırıw sheńberinde engizilgen. Tálim mazmunı hám tálim programmaların ózlestiriw dárejesiniń muǵdarlıq ekvivalentiniń kredit birlikleriniń belgileniwı studentlerge oqıw procesin gárezsiz túrde joybarlaw, oqıw procesi sapasın baqlaw hám bahalawda túpkilikli ózgerislerdi ámelge asırıw imkaniyatın berdi, tálim texnologiyaların jetilistiriw ushın shárt-shárayatlar jarattı. Evropadaǵı bir qatar kredit sistemaları arasında eń ataqlısı ECTS (Evropa kredit ótkermeleri sisteması) - tabıslı sınaqtan ótken hám házirde pútkil Evropada qollanılatuǵın kredit sisteması. ECTS dáslep studentler bir shólkemnen basqasına ótkende kredit ótkeriw ushın mólsherlengen edi. Sistema sırt elde oqıw dáwirlerin tán alıwdı ańsatlastırdı hám usınıń menen Evropada studentler jıldamlıǵı sapası hám kólemın asırıwǵa járdem berdi. Jaqında ECTS regionlıq, milliy hám Evropa dárejesinde ámelge asırılauǵın keń qamtılgan sistemaǵa aylandı. Bul 1999-jıl iyun ayında belgilengen Boloniya deklaraciyasınıń eń zárúrli maqsetlerinen biri bolıp tabıladı [3]. Boloniya deklaratsiyasında ECTS tek mısıl retinde belgilengen, biraq basqa heshqanday Evropa sisteması payda bolmaǵan. Kerisinshe, ECTS demde pútkil Evropaǵa tarqaldı hám kóplegen mámleketlerde joqarı hám joqarı oqıw orınlarınan keyingi tálim sistemasına kirgizildi: bakalavriat - joqarı tálim dárejesi; magistratura, doktorantura - joqarı oqıw orınlarınan keyingi tálim dárejesi [4]. Boloniya procesi parametrlerin ámelge asırıw túrli strukturalıq bólimlerdi modernizaciyalawǵa kompleks jantasıwdı óz ishine aladı, olardan tiykarǵısı tálim nátiyjelerine jóneltirilgen tálim programmaların sapalı qayta kórip shıǵıw bolıp tabıladı. Tálim programmasınıń massası oqıw procesinde jeke hám

kásiplik socializaciyani támiyinleytuđın kompetensiyaga tiykarlangan jantasıw bolıwı kerek.

Ózbekstannın jetekshi joqarı oqıw orınları tárepinen ótkerilgen pedagogikalıq eksperiment dawamında AKTS kreditleri kólemi 36 akademikalıq saat, studenttiń jıllıq oqıw kólemi bolsa 60 AKTS krediti etip belgilendi. Bul oqıw jılınıń ortasha 40 hápte dawam etiwine tiykarlanadı. Oqıw pánleri boyınsha ECTS kreditleri sanı pándi úyreniw ushın joybarlastırılğan ulıwma saatlar muđdarın kredit mánisinde bolıw jolı menen anıqlanadı (0, 5 kredit anıqlıǵına shekem pútinlenedi). Mısalı, eger pándi úyreniw ushın 108 saat ajratılğan bolsa, bul úsh kredit birligine tuwrı keledi. Bunda pán úsh moduldan qalıplestiriledi. Hár bir pánniń jámi júkleme degi úlesin auditoriya saatları sanı boyınsha anıqlaw hám semestrde alınğan 30 kreditti málim semestrde úyrenilgen pánler ortasında proporcional túrde bólistiriw eń qolaylı esaplanadı. Semestrdegi ulıwma (klass hám gárezsiz) oqıw júklemesin 36 koefficientke (ulıwma oqıw júklemesiniń 36 saati) matematikalıq tárizde bolıw arqalı oqıw kólemin kredit birliklerine qayta esaplaw usınıs etiledi. Bakalavr dárejesi oqıw dawamında keminde 180 kredit (60 -kredit standartı boyınsha úsh jıl) yamasa keminde 240 kredit (tórt jıl) bolıwı kerek; magistratura dárejesi jámi keminde 300 kreditten ibarat bolıwı kerek. Solay eken, magistratura hám bakalavr dárejesiniń dawam etiw waqtı ortasındaǵı baylanıslılıq sezilerli dárejede. Kredit-modul sistemasınıń engiziliwi oqıtıwshılar miyneti xarakterin hám oqıw procesiniń intensivligin sezilerli dárejede ózgartirip, Ózbekstan tálim sistemasın xalıqaralıq sheriklikke jáne de joo ashadı. Kreditlerge ótiw uzaq múddetli miynetti talap etedi, sebebi jıynalğan kredit sisteması oqıw jumıslarınıń barlıq túrlerin, atap aytqanda, tek gána auditoriyadaǵı oqıw procesi, bálki ámeliy shınıǵıwlardı, laboratoriya hám izertlew jumısların, túrli sertifikatlaw ilajların qamtıp alıwı kerek. Joqarıda aytilğanlardıń barlıǵın esapqa alsaq, kredit balları akademikalıq nátiyjelerdiń jeterli kórsetkishi bolıp tabıladı degen juwmaqqa keliwimiz múmkin. Tálim nátiyjeleri tek gána ilimiy dáreje sıyaqlı rásmiy-ilmiy tájriybe dárejesinde, bálki modullar yamasa kurslar dárejesinde de anlatılıwı kerek. Tálim nátiyjelerin oqıw jobası jáne onıń strukturalıq bólimlerine kirgiziw izbe-izlik hám logikalılıqqa járdem beredi. Olar student neni úyreniwı kerekligin anıq belgileydi. Anıq oqıw nátiyjeleri kreditlerdi ótkeriw hám toplawdı ańsatlastıradı hám kreditler berilgen yamasa berilgen tabıslardı anıq anıqlaw imkaniyatın beredi.

Tálim nátiyjelerin anıqlawga bunday jantasıw ishki, milliy hám xalıqaralıq bahalaw hám sapanı támiyinlew ushın tiykar bolıwı kerek bolğan universal standartlardı islep shıǵıwga múmkinshilik beredi.



### Paydalanilgan ádebiyatlar dizimi

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## LINGUISTIC ANALYSIS OF METAPHORS AND COMBINATIONS IN WILLIAM SHAKESPEARE'S ROMEO AND JULIET

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### **ABSTRACT**

*This article explores the use of metaphors and fixed conjunctions in William Shakespeare's "Romeo and Juliet" through a linguistic analysis. The author examines how Shakespeare uses metaphors to convey complex emotions and relationships between characters in the play. The article also delves into the use of fixed conjunctions, such as "but" and "yet," to highlight contrasts and tensions within the text. By applying linguistic analysis to the play, the article offers insights into the nuances of Shakespeare's language and its impact on the portrayal of characters and themes in "Romeo and Juliet."*

**Key words:** *Linguistic analysis, Metaphors, Fixed conjunctions, William Shakespeare, "Romeo and Juliet", Language complexity, Emotions, Relationships, Contrast, Tensions.*

### **Introduction**

Shakespeare's "Romeo and Juliet" is a literary masterpiece renowned for its rich language and intricate portrayals of love, conflict, and tragedy. This article explores the play from a linguistic perspective, specifically focusing on the use of metaphors and fixed conjunctions. Through an in-depth analysis of these linguistic devices, we unravel how Shakespeare's language shapes the emotions, relationships, and contrasts within the text. By delving into the intricacies of metaphorical expressions and conjunctions, we gain a deeper understanding of the profound impact of language on the portrayal of characters and themes in this iconic work.

In William Shakespeare's "Romeo and Juliet," the playwright's masterful use of language brings to life the intricate web of emotions, conflicts, and relationships that define this timeless tragedy. This article presents a linguistic analysis of the play, focusing specifically on the role of metaphors and fixed conjunctions. By examining how Shakespeare employs these linguistic devices, we delve into the nuances of expression and meaning in "Romeo and Juliet," uncovering the profound impact of

language on character dynamics and thematic developments. Through this exploration, we aim to shed light on the enduring power of Shakespeare's language and its ability to convey the depth and complexity of human experience.

In the introduction to the article, you can further expand by discussing the historical and cultural significance of "Romeo and Juliet." You could also explore the broader relevance of linguistic analysis in understanding Shakespeare's works and its enduring impact. Additionally, you might consider highlighting the specific focus or methodology of the linguistic analysis in this article, such as how it aims to unveil the complexities of Shakespeare's language and its influence on character development and thematic exploration in "Romeo and Juliet." Furthermore, you could emphasize the enduring relevance of linguistic analysis in uncovering the layers of meaning within the play, and how this contributes to a deeper appreciation of Shakespeare's literary genius.

Here are a few examples that can be included in the article on the linguistic analysis of metaphors and fixed conjunctions in William Shakespeare's «Romeo and Juliet»:

#### 1. Metaphor:

«But, soft! What light through yonder window breaks?» – This iconic line from Romeo's soliloquy in Act 2, Scene 2, employs the metaphor of light to symbolize Juliet's beauty.

#### 2. Fixed Conjunction:

«Good night, good night! Parting is such sweet sorrow, That I shall say good night till it be morrow.» – The repeated use of the fixed conjunction «good night» in Juliet's parting words to Romeo highlights the bittersweet nature of their separation.

#### 3. Metaphor:

«It seems she hangs upon the cheek of night, Like a rich jewel in an Ethiope's ear» – In Romeo's description of Juliet, the metaphor of a «rich jewel» exemplifies the intensity of his admiration and love for her.

#### 4. Fixed Conjunction:

«O heavy lightness, serious vanity, Misshapen chaos of well-seeming forms, Feather of lead, bright smoke, cold fire, sick health...» – Romeo's use of fixed conjunctions in Act 1, Scene 1 serves to convey the conflicting emotions and paradoxes he experiences.

## 5. Metaphor:

«What's in a name? That which we call a rose, by any other word would smell as sweet.» – Juliet's metaphorical contemplation on the significance of names reflects her profound understanding of love and identity.

- "But, soft! What light through yonder window breaks? It is the east, and Juliet is the sun." (Act 2, Scene 2) This metaphor compares Juliet to the sun, emphasizing her beauty and radiance in Romeo's eyes.

- "O, she doth teach the torches to burn bright!" (Act 1, Scene 5) This metaphor compares Juliet to a torch, suggesting that her beauty outshines even the brightest flames.

- "It is the east, and Juliet is the sun. Arise, fair sun, and kill the envious moon." (Act 2, Scene 2) This metaphor further emphasizes Juliet's beauty and importance in Romeo's life, as he wishes for her to outshine the moon.

- "My only love sprung from my only hate!" (Act 1, Scene 5) This fixed conjunction highlights the paradox of Romeo and Juliet's love being born from their families' hatred, setting up the central conflict of the play.

- "Good night, good night! Parting is such sweet sorrow, That I shall say good night till it be morrow." (Act 2, Scene 2) This fixed conjunction captures the bittersweet nature of Romeo and Juliet's parting, as they express their love for each other despite the pain of separation.

These examples demonstrate how Shakespeare uses metaphors and fixed conjunctions to convey complex emotions, relationships, and themes in «Romeo and Juliet,» showcasing his skillful manipulation of language to create a powerful and enduring work of literature.

And I will add that by showing the colorful and effective use of metaphors and static phrases in «Romeo and Juliet», highlighting the nuances of Shakespeare's language, its influence on the character development in the play, and the depth of the theme. Will give.

## Conclusion

In conclusion, the linguistic analysis of metaphors and fixed conjunctions in William Shakespeare's "Romeo and Juliet" has revealed the profound intricacies of the playwright's language. Through this examination, we have witnessed how Shakespeare's masterful use of metaphors and fixed conjunctions enriches the emotional depth and thematic complexity of the play. By unraveling the nuances of language in "Romeo and Juliet," we have gained a deeper understanding of the characters' internal struggles, the dynamics of their relationships, and the underlying

tensions that drive the narrative. This linguistic analysis underscores the enduring relevance and timeless resonance of Shakespeare's work, demonstrating how his artistry with language continues to captivate and compel audiences, centuries after its creation. It is a testament to the enduring power of Shakespeare's literary genius and the profound impact of his language on the portrayal of universal themes of love, conflict, and tragedy in "Romeo and Juliet."

I would also like to add that the linguistic analysis of metaphors and stanzas in William Shakespeare's *Romeo and Juliet* provided valuable information about the depth and complexity of the language of the work. Through this investigation, we have come to a deeper understanding of how Shakespeare's use of metaphors allows for the depiction of complex emotions and relationships, while his use of fixed conjunctions emphasizes conflict and tension within the text. By examining the subtleties of language, we have revealed the profound impact of Shakespeare's linguistic choices on character development and thematic explorations in *Romeo and Juliet*. This linguistic analysis not only enhances our appreciation of the work, but also underscores the enduring relevance and universal resonance of Shakespeare's literary genius. This symbolic work shows the eternal power of his language in conveying eternal themes such as love, conflict, and tragedy.

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## NATURAL CHARACTERISTICS OF EXPRESSING SIGN AFFIXES

**-cha/larcha/chasiga, -an, -ona**

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***Annotation.** The article explores invariable words with independent meanings, i.e. adverbs, specifically, their etymological structure. The morphological, semantic nature of words formed as an adverb is also highlighted. The possibilities of the affixes -cha/-ларча/часига, -ан, -она in word formation, the nature of the words associated with these affixes, the features of each affix in language and speech are thoroughly studied and classified. Subsequent research has provided detailed information on the affixes -cha/-ларча/часига, -ан, -она, word formation possibility of which today are denied, their formation of new words, some usual and occasional constructions related to these affixes are analyzed. Each theoretical view is verified by examples.*

***Key words:** invariable word, occasional use, pleonasm, adverbialization, simplification, semantic criterion, grammatical criterion, speech construction, word formation model, root and derived affix, word formation possibility.*

**Introduction.** Although the adverb is a relatively “junior” category, many ancient elements (word-forming, form-forming suffixes) have been preserved in this group. This leads to the complexity of the structure of the word group of the adverbs, resulting in conflicting interpretations. Ancient suffixes in the adverbs preserved in Turkic languages have been studied in Turkology and Uzbek linguistics. Especially, it has been studied in detail in the works of such scientists as N.A Baskakov [2], N.K Dmitriev [4], A. Gulomov [3], V. Kotvich [6]. The results of this research are summarized in the fundamental grammar of the Uzbek language by A.N Kononov [5], in the work of A.M. Shcherbak [9]

The affix -cha, which occurs in the form of the adverbs, is interpreted in most sources, especially in the "Grammar of the Uzbek language" as an active adverb-forming affix [10,529]. Indeed, in modern linguistics, the view of the suffix -cha (adverbs) as derived words has changed, the possibility of word-formation of the morpheme -cha has been rejected [7; 12]. However, despite the interpretations and classifications expressed, the acknowledgment of the affix -cha has not been

satisfactory in modern linguistics. The same can be said about the affixes -larcha, -chasiga. The semantic, grammatical criteria of these morphemes are not defined.

The suffix -cha is found in all Turkic languages with some phonetic differences. Turkologist N.K.Dmitriev writes about the etymology of the origin of the affix -cha: When the -chak element receded from its original meaning and began to be used as an auxiliary grammatical element, it also lost its stable form, and as a result of the fall of -k, the vowel sounds in its composition also changed, and the -cha /-che phonetic variant was formed instead of the -chak form.[4,47].

-cha and -chacha affixes, developed on its basis, are linguistic units that have been developing over the centuries, have the ability to combine into many words and to form a variety of meanings [1,45]. At this point, we would like to make some more comments while developing the points made.

It is observed that the basis for the formation of words with the affixes -cha, -larcha, -chasiga is the person, the various qualities of the person - nationality, kinship, age, occupation, horses, object names, adjectives. For example: *yigitcha, o'zbekcha, qilcha, tirnoqcha, ochiqcha; akalarcha, otalarcha, kattalarcha, dehqonlarcha; o'zbekchasiga, eskichasiga, yangichasiga, qassobchasiga, yaponchasiga*, etc. Words such as the ones formed with the affixes -cha, -larcha, -chasiga, which represent the sign, are dominated by the position of the -cha affix in the semantic expression. More precisely, complex forms such as -larcha, -chasiga also emerged through the affix -cha as a product of the evolution of language. Therefore, before talking about the affixes -larcha, -chasiga, it is necessary to pay attention to the affix -cha and its grammatical nature.

The polyfunctionality of adverb-forming suffix -cha, which has caused the most controversy among form-forming affixes, has led to some confusion in grammar. The polyfunctionality of the affix -cha can be an indication of its antiquity. Dictionaries contain the following words with the suffix -cha: *o'zgacha, yevropacha, farg'onacha, o'rtacha, qisqacha, tubandagicha, keragicha, odatdagicha, o'shandayligicha, butunligicha, avvalgicha, qadimgicha, yangicha, o'zicha, o'shandayicha, butunlayicha, atroflicha, tegishlicha, butunicha, to'g'rilikcha, yaxshilikcha, osonlikcha, keyincha, ko'pincha, yashirincha, o'g'rincha, aksincha, vaqtincha, tegishincha* [11,30-31].

Importantly, the affix -cha is not a word-former in a number of forms, but a form in the loading function (emphasis, reinforcement meaning). For example, *yashirincha, ochiqcha, ortiqcha, qisqacha, buguncha, hozircha, butunicha*. The fact that the suffix -cha can appear without a sign in words such as *yashirincha uchrashuv – yashirin uchrashmoq, ochiqcha gaplashmoq – ochiq gaplashmoq, buguncha sabr qilmoq –*



*bugun sabr qilmoq, etc.* also casts a shadow on the word-forming nature of this affix in similar words. The above examples are intended to indicate the action sign together with the -cha morpheme. This is the reason why these words are considered to be artificial adverbs. In the words “*hozircha, buguncha*” -cha has been used to denote the norm of time. For the same reason prof. Sh.Rahmatullaev considers this suffix as an affix (form of analogy) forming a lexical form [7,206]. The fact that words such as “*yashirincha*”, “*ochiqcha*” equate to grammatical meaning in the form of “*yashirin tarzda*”, “*ochiq holda*” also indicates that this auxiliary morpheme is not constructive in the same words.

The next case is that a series of adverbs with the -cha affix can only be historically separated into a base and a suffix. In particular, “*ancha, picha, o‘larcha, buncha, shuncha, o‘shancha, aksincha*”, cannot be divided into morphemes on the basis of modern linguistic laws. More precisely, words that have undergone such an adverbialization phenomenon cannot have a word-forming basis and a word-forming content from the point of view of synchronous linguistics. These words should be considered as a product of simplification.

In textbooks and manuals there are a number of other words related to the affix -cha (For example: *do‘stcha, dushmancha, keyincha, o‘g‘richa, erkakcha, ayyorcha*, etc., unstressed -cha), as the linguist Y.Tojiev rightly points out [8], they cannot be called artificial words at the level of literary language norms. The abnormality can be prevented only when these words in this occasional usage are used in “*do‘stlarcha, dushmanlarcha, ayyorlarcha, erkaklarcha, xotinklarcha*” way.

The question arises. Can the affix -cha form a type of construction in the pure sense? It is necessary to take into account two types of word formation (pattern). In our opinion, this is the case with word formation:

1. [object name + cha = quantitative adverbs]. This group of word-formation patterns includes *qilcha, tirnoqcha, zarracha*, as well as relatively new, spoken speech constructions such as *qishloqcha, qushcha, binocha, shaharcha, tog‘cha, vagoncha, samolyotcha*, and so on. etc. can be cited as an example.

2. [name of a particular people / nation / place + cha = status meaningful adverbs]. This template can make dozens or even hundreds of new words. In particular, *toshkentcha, buxorocho, samarqandcha, g‘ijduvoncha, andijoncha, shofirkoncha, g‘uzorcha, xitoycha, turkcha, afrikacha*, etc. This word-formation pattern is so productive that it is possible to create a new word with as many peoples, nations, peoples as there are cities (districts, neighborhoods...) in the world. This means that this pattern can produce an infinite number of speech products: *andijonchasiga raqsga tushmoq, buxorocho kurashmoq, guruzincha kuylamoq*, and so on.

Derivatives of the second word-formation pattern are synonymous (grammatical synonymy) with words formed with the affix -chasiga: *andijoncha* – *andijonchasiga*, *farg'onacha* – *farg'onachasiga*, *buxorocha* – *buxorochasiga*, *ispancha* – *ispanchasiga*. The -siga element in the second pair of this usage came to be used pleonastically to reinforce meaning.

Both mold products can be artificial words. The main evidence of their artificiality is that the meaning of the words *zarracha*, *tirnoqcha*, *vagoncha*, *buxorocha*, *toshkentcha* can be based on the meaning of the words *zarra*, *tirnoq*, *vagon*, *buxoro*, *toshkent* and the suffix -cha. Furthermore, the existence of a denotative semantic difference between word formation and derivation, which is another basic law of derivation in these words, also indicates their artificial vocabulary. From this point of view, the above mold products can be considered as objectionable artificial adverbs.

Certain words (*do'stcha*, *dushmancha*, *ayyorcha*, *mug'ambircha*, etc.) that are formed for the expression of a sign and whose use seems unnatural to the listener form a normative use type only if they are formed with the -larcha affix (*do'stlarcha*, *dushmanlarcha*, *ayyorlarcha*, *mug'ambirlarcha*). Because in the affix -larcha the meaning of the plural form -lar is felt. For example, in the phrase *yigitlarcha mehnat qilmoq* (to work like a young man), there is an expression that is “common to all young men”.

The semantic and grammatical completeness of the -larcha affix is determined by a long historical development. This affix activity continues to serve to create thousands of new speech constructions (author's neologisms). Examples are *ruslarcha*, *ispanlarcha*, *hindularcha*, *samuraylarcha*, *gruzinlarcha*, *moldovanlarcha*. We observe:

1. *U bir umr samuraylarcha yashadi, eng so'ngi damgacha.* (Z.Kholov, “Ma'rifat” newspaper)

2. *2003-yilda ushbu kenja turlar hindularcha yo'lbars deb nomlangan*, this subspecies was called the Indian tiger. (From the newspaper) According to the words with affixes in the given examples, they can be evaluated as new speech artificial words. -larcha is added to the names of different peoples (elat, millat) and deviates from the subject sign and acquires the meaning of the sign-feature.

The affix of -chasiga also forms words used for character expression. In the reverse dictionary [11], the basis of word formation in six of the eight words with this affix (*mardchasiga*, *tentakchasiga*, *komsomolchasiga*, *chalqanchasiga*, *o'g'rinchasiga*, *dehqonchasiga*, *soldatchasiga*, *ochiqchasiga*) consists of personal names. In words such as “*ochiqchasiga*”, “*chalqanchasiga*”, which is not the name of the person, the affix -chasiga came as a function of particle (strengthening the meaning).

The -chasiga affix is by nature both a -cha affix and a -larcha affix. This is the case for *andijonchasiga*, *ispanchasiga*, *buxorochasiga*, *toshkentchasiga*, *fearg'onachasiga*, *qirg'izchasiga*, *uyg'urchasiga*, *armanchasiga* and so on. It can be seen in the fact that words can be the product of a pattern [to a particular people / nation / place name + chasiga = case-meaning adverbs]. The use of examples like the above does not cause any confusion for the representatives of this language. Just as the people of our language accept the word "andijonchasiga" without objection, they also accept words such *ispanchasiga*, *buxorochasiga*, *toshkentchasiga*, and use them as needed.

Assimilation from one language to another is a characteristic not only of lexemes but also of affix morphemes. The acquisition of words and affixes is valued as a product of social necessity. In the Uzbek language, the affixes -an, -ona are also given. These affixes are interpreted as formative. But ideas about their nature have passed from one source to another almost unchanged over the years.

In the Uzbek lexical layer, such kind of words related to the affix -an were observed: *taqriban*, *tarkiban*, *qalban*... [11,119-121].

It is difficult to call these words artificial in the pure sense. Because the basis of this cannot be limited to a specific set of words of a spiritual type. In the examples given, the part before the -an affix consists of both nouns (*vijdon*, *ruh*, *fikran*, *zohir*), as well as adjectives (*takror*, *xolis*, *qat'iy*), and words that have no meaning (*ayn+an*, *taqrib+an*). Nouns are different in meaning. In addition, this mold has not (accidentally) created any new inventions in recent years. This evidence suggests that words with the -an affix should be taken as derivations in the Uzbek language. During the gradual development of the lexical layer of the Uzbek language, about 50 words containing the -an element passed directly from Arabic or through Persian-Tajik.

In words with the affix -an, the activity of both the first part of the word-formation pattern (lexical morpheme – lexeme, which is the basis of word-formation) and the second part (suffix-lexeme, which changes the meaning of the lexeme) is very limited. More precisely, in order for the affix -an to form a new speech product, a certain Arabic word must first appear, so that the pattern "comes to life" and the process of processing begins.

So, since the -an affix cannot form a specific word-formation pattern in the Uzbek language and is used in speech as ready-made lexemes, it means that all units with the -an affix should be considered as root words. Their division into bases and affixes should be based on the scientific views of the "word sharing language" (Arabic) and not in terms of the "word taker" (Uzbek).

About 80 words formed from the Persian-Tajik language with the affix -ona are used in our speech. These are: *beadabona*, *adabona*, *muhibbona*, *g'oyibona*, *g'olibona*... [11,22-24]. The use of such words varies.

The acquisition of the suffix -ona in our language dates back to later times. In contrast to the -an elemental words, the basis for the construction of -ona suffixes is characterized by the fact that they have words in a certain strict meaning group. Adjectives and nouns are the basis for making words with the affix of -ona. Therefore, the words listed above can be considered as derivatives of the pattern [adjective /noun +ona= adverbs of manner]. The products of this mold are not limited to the above words. In the speech of the Uzbek people, *sharqona*, *o'zbekona*, *turkona*, *alpona*, *qodirona*, etc. are used. words such as Linguist A.Khojiev states that such words (including *sayrona*, *shekspirona*) are occasional (speech) construction. According to the scientist, such fabrication is artificial and does not obey the normative state of fabrication. [12,44]. In our opinion, any artificial word may at first be individualized and seem unnatural to the listener. This can be explained as follows. For example, when comparing group 1 artificial words (language units) such as *ishchi*, *suvchi*, *nonchi*, *temirchi* with group 2 words (speech units) such as *ananaschi*, *bananchi*, *paynetchi*, the abnormality of group 2 speech constructions is felt. After all, over time, it is natural that such occasional constructions become long. This can be linked to the sociality of the language. It is clear that speech constructions such as *qodirona* (pathos), *qahhorona*, *shekspirona* or *yusufona* (method) seemed unnatural to the listener in the first period. However, every artificial word occurs because of the product of need.

Here are some examples: 1) *G'afur G'ulom bejizga "qahhorona qisqalik" iborasini ishlatmagan. Abdulla Qahhor bir varaqlik hikoyalariga ham butun kitoblarning zalvorli yukini jo qila olgan.* (K.Azzamov) 2) *Sharq va G'arbda yashab o'tgan ko'plab mutafakkirlar asarlarida ham "navoiyona" donishmandlikni ko'ramiz.* (R.Jabborov)

It turns out that the -ona affix can create new constructions from person names. Hence, there is reason to conclude that the [person name mother = case forms] pattern continues to function. The -ona affix, unlike the -an affix, can form words not only from its own language units (Persian-Tajik words), but also from other language lexemes. For example: *chexovona*, *shekspirona*, *gogolona*, etc. Let's look at an example: *Bularning barchasiga chexovona nozik istehzo mavjud.* (S.Saidmurodov)

**Conclusion.** Based on the above considerations, the following conclusions can be made about the affixes -cha / -larcha / -chasiga, -an, -ona:

a) -larcha, -chasiga affixes developed on the basis of the form -cha, which has a characteristic feature of the -cha affix, however, as a result of the separate development of these complex affixes have acquired a specific nature, methodological differences;

b) affixes *-cha / -larcha / -chasiga* serve to create new speech words in Uzbek language;

c) all words with the affix *-an* are considered to be original words from the point of view of the Uzbek language and do not require analysis and interpretation;

g) The Persian-Tajik affix *-ona*, in contrast to the *-an* form, participates in the formation of new artificial words in the Uzbek language. Although the *-ona* affix is not among the active word-formers, this affix can be rated as moderately productive. In this case, the names of individuals serve as a basis for making.

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## BEOWULF AS EARLY EXAMPLE OF ALLITERATION IN LINGUISTICS

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**Key words:** *Alliteration, Old English, consonant sounds, Beowulf, epic poem, repetition, +,0*

**Introduction:** Alliteration is considered to be one of the most important stylistic devices not only on English language but also in linguistics. Alliteration refers to constant repetition of similar initial consonant sounds one another not only in sentences but also in phrase. The first appearance of alliteration could be seen in Old English epic poem which is called “Beowulf”. According to the vast majority of linguistics, Beowulf is foundation of alliteration. This article investigates the epic poem “Beowulf” and highlights the key examples of alliteration in “Beowulf”.

According to the online dictionary “Oxford languages”, the word “alliteration” originally came from Latin language which can be divided into two parts “ad”, “littera” (letter of the alphabet). Alliteration is a rhetorical device that repeats the same consonant sound, not the actual letters at the start of a series of words. Cuddon (1991) stated that alliteration is a figure of speech in which consonants, especially at the beginning of words, or stressed syllables, are repeated. According to Billy Coins(2021) alliteration is one of the most consistently used poetic devices in history, with instances dating back to the birth of the English language. Historically, the birth of English language dated back to the mid fifth century when Germanic tribes which were called Anglo, Saxons and Jutes invaded British Isles. Admittedly, they brought their language culture and lifestyle, moreover the language they spoke was called Old English which it is known as English language now. Eventually, Anglo-Saxons created their own oral literature even though the written literature had not been created yet. Old English literature, often called as Anglo-Saxon literature, had the most prominent oral literature examples, including “Beowulf”. Beowulf is epic poem of Old English which consists of two parts and more than three thousand lines. Before it was recorded in writing, the poem was performed and passed on through oral tradition. Oral poetry has its own set of strange conventions and particularities, many of which are designed to help the scop

(Anglo-Saxon bard/poet) or storyteller both remember and recite the poem. Alliteration is particularly common. In addition to this, the poem *Beowulf* (and Anglo-Saxon poetry in general) makes common use of irony, in which the expectations do not match a given situation, or caesura, a poetic technique in which the speaker pauses in the middle of a line. Caesuras are commonly marked by colons, dashes, or commas in the middle of a line.

From prospective of linguistics, alliteration is one of the most important literary devices mainly used in poetry for a number of purposes<sup>1</sup>. In Old English poetry, alliteration was a continual and essential part of the metrical scheme and it was often until the late Middle Ages. However, alliterative verse becomes increasingly rare after the end of the 15th century and alliteration- like assonance, consonance, and onomatopoeia- tends more to be reserved for the achievement of the special effect (Cuddon, 1991).

Alliteration occurs in nearly every line throughout the poem. In *Beowulf*, to describe how The King Hrothgar live in castle, following lines are given;

*So Hrothgar's men lived happy in his hall  
Till the monster stirred, that demon, that fiend...*

In two lines, it can be seen that the letter “h” is repeated in the words “Hrothgar, happy, his, hall” as alliteration in the first line. Moreover, in the second line, the letter “t” is repeated in key succession in the second line. If it is paid attention thoroughly, in the first line, king’s name started with “H” and it continued with three words which are started with “h” as well.

Here are several examples of alliteration from *Beowulf*. In thirtieth line it is told when Grendel come to destroy Herot.

*Then, when darkness and dropped, Grendel  
Went up to Herot, wondering what the warriors  
Would do in that hall when their drinking was done....<sup>2</sup>*

In this example, the wide usage of alliteration can be highlighted. Not only one letter, but also two letters are repeated in a sentences. The letter “w” is used more when it is compared to the letter “d”. The succession of “went, wondering, what, warriors” especially can create poetic rhyme. Another examples can be as follows;

“to feast his fill of the flesh of men” (the alliterative use of the letter ‘f’)  
“gulped the blood and gobbled the flesh” (the alliterative use of the letter ‘g’)

<sup>1</sup>Nizomova, Z. (2021). ALLITERATION AS A SPECIAL STYLISTIC TECHNIQUE. *Mental Enlightenment Scientific-Methodological Journal*, 2021(5), 244-253.

<sup>2</sup> Bloom, H. (2007) *Bloom's Modern Critical Interpretations: Beowulf*, Updated Edition.

“for fear of a feud were forced to disown him”

“Bound to the bank then the broad-bosomed vessel”

And here are a few examples of the use of alliteration along with the caesura, or break:

“He found them sprawled in sleep (caesura) suspecting nothing” (the alliterative use of the letter ‘s’ both before the break and then repeated after)

“And the heathen’s only hope (caesura) Hell always in their hearts” (the alliterative use of the letter ‘h’ before and after the break)

After investigating several articles, it can be found that the reasons why Beowulf was passed mouth to mouth with alliteration might grab listener’s attention as far as it was told orally. The use of alliteration in Beowulf is to help to grab listener’s attention, and it holded them captive in the language. The repeating sounds resonate, and with each line they were transported into the action of the piece. The bard understood the necessity for entertaining the audience, and to make it exciting he would exaggerate and emphasize the repetitive sounds to engage and delight, to frighten and entertain. Audiences loved the tales the bard brought to them; they begged for more<sup>1</sup>. Secondly, Alliteration helped make lines in the poem sing for the listener and be more easily remembered for the bard. The rhythm helped both the teller and the listener follow the story line, and it enhanced the process of retelling the tale. These lines demonstrate how the rhyme scheme made for an exciting and entertaining retelling:

‘Cunningly creeping, a spectral stalker

Hot-hearted Beowulf was bent upon battle

He had often haunted Hrothgar’s house

How gluttoned with gore he would guzzle his fill’

In modern poetry, alliteration is used for several reasons such as grabbing attention, making easy to learn so on and so forth. The main reason to use alliteration in poetry is that it sounds pleasing. It’s a means to get the attention of readers or listeners. It’s also a clear way to signify that the alliterative words are linked together thematically, and it puts a spotlight on the subject contained therein. The second use of alliteration in poetry is to build mood. While a wide array of words could theoretically be used to describe any subject, certain letter sounds have specific connotations, and the act of repetition enhances that effect. Think of the “s” sounds in “silt,” “seas” and “silver.” It almost makes words sound whispered, and it can evoke an air of mystery, solemnness or intimacy, depending on the context. In fact, there’s a word for the repetition of this class of letter sound—it’s called sibilance, and it also applies to the consonants starting “ship,” “zip,” “chasm,” “genre” and “jealous.” The opposite can

<sup>1</sup> Cuddon, J.A, (1991) A Dictionary of Literary Terms and Literary Theory, USA: Basil Blackwell Inc.



be said of hard consonant sounds like the “ck” in “cat” or the “g” in “good” or “plosives” like “b” and “p.” They can be awakening, uplifting or violent. The third reason to use alliteration is hinted at by its alternate names—initial rhyme or head rhyme. As with perfect rhyme, alliteration lends verse some melody and rhythm and imparts a sense of how it should sound read out loud<sup>1</sup>.

In conclusion, the effect of alliteration is to add artistic style to a poem or other literary form. Old English epic poem Beowulf has a great number of examples of alliteration. The main objectives of using alliteration in Beowulf is to grab listener’s attention and make the poem easy to memorize and entertain with poetic rhyme.

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## THEORETICAL BACKGROUNDS OF TRADITIONAL AND TECHNOLOGICAL METHODS

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***Abstract:** Global expansion and qualitative change of international bilateral contacts and relations in all areas and Uzbekistan's transformation into an open society, intensive looking in learning foreign languages has argueded significantly in recent decades in the country. It becomes a crucial factor of scientific, technical, general cultural progress, especially economy in our modern society. All of which contributes to raising the foreign language status as a main skill to be developed in all spheres. Nowadays, students are experiencing new technological inventions and are applying for their own life and educational process therefore when they are having lessons with traditional methods they may be bored and no interest for the lesson. Additionally, they are having the vast majority of videos on You Tube, Facebook, Instagram and other social media; as a result they are getting disappointed by having traditional lessons with traditional methods. In Uzbekistan, many teachers are keen on using technological methods in EFL classrooms; therefore, many researches have been investigating and conducted among young learners and linguistics. The main aim of it to prove scientifically, practically, technological methods may overweigh traditional methods.*

***Key words:** technology, EFL classrooms, methods, traditional methods, technology based methods, social Media*

**Introduction.** Traditional education lasted 600 centuries, starting from the Middle Ages. By the twenty-first century, this permanent traditional method of teaching had failed. Some estimates of the effectiveness of higher education are measured based on the growth in the number of students entering universities around the world. Traditional teaching strategies are a group of strategies that were used in the past that are now considered to be largely outdated. These strategies were the primary teaching methods employed in the early days of the modern education system (circa 1800 -1930s) when teachers were not required to undertake any form of teacher training.

Technology is a powerful tool that has a positive impact on learning. By showing students how to use it effectively, teachers can eliminate several negative associations to create a safe and effective learning environment. As a result, students will be more involved and motivated to work on interesting and interactive learning tasks. They also develop the skills necessary for success in the future. Computer technology is a positive addition to bridging the gap between education and the technological world in which we live. Although effective training is possible, different technologies are combined. Computer technologies in schools offer students access to information, motivation to learn, a quick start of sales of work skills and improving the quality of work in the classroom.

### **Methodology.**

In this research, qualitative and quantitative methods were used. In order to compare to two different types of methods, comparative method was used to gather information. In order to find information, different articles and books on the Internet were analyzed and concluded.

### **Results and discussion.**

Technology seems to be gradually taking over many aspects of human society. Education has gradually evolved to incorporate technology into the dissemination of information. This progress has revolutionized the learning environment, resulting in improved grades and learning experiences. Although a small group of conservative-minded people are skeptical about using technology in the classroom, the benefits are obvious. Now the question remains, how best to use technology in the classroom and what are the potential benefits? As tablet computers and other smart devices gradually replace textbooks, we also need to study the challenges faced by the introduction of technology in education. The main argument in favor of introducing technology into the classroom is that students should easily apply classroom concepts in everyday life. Understanding the role of technology in classrooms and the workplace, among other things, is crucial. Before focusing on the pros and cons of technology based classrooms, the types of technologies should be introduced. The following types of technologies have already played an important role in technology based classrooms.

1. Using computers in the classroom: - computers have evolved and changed their appearance and way of working. Now desktop computers and laptop computers, also often known as laptops or notebooks. New technologies have also emerged, and some new computers, such as the iPod or galaxy Tablet, have a skilful birth. These computers can be used by teachers to assign work to students and study groups in the classroom. Teachers can also use computers to illustrate visual themes that help students learn

more easily. Modern computers come with built-in applications that help students learn better.

2. Creating websites and blogs in the classroom: - Creating a website or blog using Word Click or other content management software is very simple. Teachers can create cool blogs if they post assignments. If the school does not have a website switch to host these cool blogs, the teacher can use free website hosting services such as Word click. through these platforms, the teacher creates a blog under the subdomain of this host. Students will find all their study assignments in this blog.

3. Using mobile devices:-teachers and students can use smartphones in the classroom for academic purposes. Mobile learning is becoming very popular. This is similar to e-learning or distance learning. Although it is based on mobile phones. It's good from the spot because M-Learning is convenient. Mobile phones are very light, but they can have the same software as on a regular computer, a student can receive academic information, such as assignments, through an educational mobile application.

4.Using intelligent interactive whiteboards: - Modern intelligent whiteboards have a touch screen function, so the teacher can depict dots using a projector, teachers can display visual effects on these whiteboards, which improves the learning process. Students learn more easily through visual effects. Students can also use the whiteboard to draw, write, or manipulate images. Smart boards come in different sizes, wider ones are better because they can display a larger image and can be used by two students at the same time.

5. Using digital microphones in the classroom: - large classrooms are characterized by unlimited noise levels, so teachers can use these wireless digital microphones. The microphone transmits the sound to the speakers, and each student clearly hears his teacher. This helps the teacher not to strain his voice trying to explain thoughts to his students. These digital microphones are not very expensive, so even a school with a small income can afford to buy a wireless microphone for each class.

6.Using Online Media: - Teachers and students can use online streaming tools to teach in the classroom. Using a projector, a computer, the internet and a blackboard, the teacher shows an example in real time using the following sites: youtube.com.there are videos on this website that can be used for academic information. As far as technology has very important role in teaching, there are lots of advantages of technology in the classrooms.

1. Technology gives opportunity for students to be aware of the most current information available. Electronic textbooks or web based content can be updated in real-time all around world. Classrooms can connect with other classrooms without any problems around the world to broaden their learning and to expand their outlook and

mindset. This benefit of technology can cause the wide opportunity door to connect with the world and share their knowledge.

2. Students are able to practice collaboration skills by working in teams on projects utilizing shared documents or conferencing technologies. This allows collaboration to occur outside of the classroom or among classrooms in different locations. This means that they can connect with different people in any time and any place that they want.

It is true that the collaboration with people costs money, time, energy without technology, because they need to spend their time and money to get one destination. Therefore, the technology can help students and teachers to collaborate in an easy way.

3. It is without question that students will need to know how to use technology to communicate and collaborate in their future careers. If students want to get well-paid job in their future career, they have to know how to use technology. When technology is used in the classroom, they have to use it.

4. Effective teaching methods - to enrich the education system, it is very important to ensure effective implementation of teaching methods for teachers and professors. When it is looked specifically at teachers' perceptions, the vast majority of empirical findings indicate that EFL teachers have positive perceptions of technology use in the classroom (Aydin 2013; Canals and Al-Rawashdeh 2019; Huang et al. 2019; Morgana and Shrestha 2018; O'Bryan and Hegelehimer 2007; Thang et al. 2014) Because these contribute greatly to the improvement of students' knowledge (Isisag (2012)). Before the advent of technology, teachers primarily used textbooks and explained concepts on the board. But with the advent of technology, they are gaining in-depth knowledge and ensuring understanding of concepts among students. Apart from explaining the concepts to the students, they can also show them pictures and images so that they can have a better understanding (Ding et al. 2019). The use of technology allows teachers to adequately implement teaching methods. Whereas students are able to implement effective methods of understanding and learning.

5. Improving Independent Work - Despite the use of technology, improvements are being made in students' independent work competencies. Students, especially those who are slow to grasp concepts or have learning disabilities, tend to depend on others. When teachers teach and depend on classmates, friends, or family members, they are unable to grasp concepts effectively. Thus, when they learn to use information technology, they can expand their understanding in terms of concepts. With a proper understanding of the topics and concepts, they are able to overcome various obstacles and difficulties associated with the implementation of tasks. Therefore, when they need

to work on a project or assignment, they are able to work independently with minimal or no help from others.

6. Activation of the educational system - the use of information technologies makes a great contribution to the activation of the educational system. There are many aspects that are affected by the use of information technology in the educational system (Siefert et al. 2019),. These include teaching methods, teaching strategies, interactive learning, individualized and differentiated approach to teaching, cognitive activity and self-control among students through the use of video and audio information. includes testing and control through a system of equations. In some cases, sufficient understanding of the concepts is provided by videos when teachers are teaching lesson plans or when students are presenting their research projects in higher education institutions. One of the most important aspects is that students can make improvements in knowledge and information acquisition. As a result, they could improve their academic performance and achieve their academic goals.

7. Taking Online Courses - Individuals are pursuing bachelor's, master's, or doctoral programs at institutions of higher education. They even have to take online courses while doing these programs. Online classes are more common in other countries like the United States of America than in Uzbekistan. One of the main limitations of online classes is that people do not have the opportunity to listen to class lectures or to establish appropriate conditions and relationships with other individuals. To pursue online courses, they must first access the internet. If people are located far away, in other regions or countries, they use the internet to do online courses. Moreover, the websites such as Coursera or British council website announce free courses every year.

8. Online Education - Online education provides opportunities to use multimedia tools in the learning process. This includes the use of color, animation, sound and video. School teachers and professors of colleges and universities have the opportunity to use in terms of visibility of the materials used to improve teaching methods, teaching strategies and improve the overall system of education. By providing online education, individuals who cannot attend classroom lectures or live far away can continue their courses and programs(Korkut, 2012).

#### Disadvantages of technology in the classroom

As far as the coin has two sides, the technology based classroom has drawbacks too. It is proved that the technology in the classroom can give tons of opportunities for not only teachers but also students and pupils when they are used in effective way. Otherwise, they will be dangerous and distracting. Therefore, there are several disadvantages of technology as follows:

1. As far as the lesson is conducted by the help of the different gadgets, students are constantly in front of a device — cell phones, tablets, computers, and gaming devices which are prevalent in their lives. Lucy Kidwell (25, 2022) says that “ A Healthy Minds Network 2020 survey divulged that two-thirds of college students struggled with loneliness, with a whopping 83 percent indicating that poor mental health detracted from their academic performance. This is notable, as these higher instances of depression and anxiety—as well as tense relationships, eye strain, poor sleep, and physical health complications—are directly tied to excessive screen time.” Adding technology to the classroom increases the overall amount of exposure to electronic devices and screen time, as a result, students may forget spend outdoors. On the top of that there are concerns that too much screen time can easily damage eyesight. When they spend their time working with devices they may get depressed and feel alone. As a result, they feel lonely and this may lead some physiological disorders. This influence can be minimized if parents and teachers can control the number of hours students spend in front of screens.

2. Technology not only help to teach but also it can help to distract students attention as far as technology can be a minefield of distractions. Ads, pop-ups, games, news, interesting websites, social media, instant text messages, and so on and so forth are constantly competing for our attention. Moreover, students use their smartphones and tablets, naturally there may be social media and they may get distracted by instant messages. This means teachers have tendency to face the challenge of keeping students concentrated on their task. It is stated in a study published in the Journal of Educational Psychology that 118 upper-level college students were interviewed, it is proven that the students with laptops, tablets and smart phones open for non-classroom purposes scored half a letter grade lower on exams. In order to solve this problem, teachers can assist encourage students to focus on their work by setting clear expectations and consequences. Additionally, teachers at classrooms and parents at home can also set up internet blocks on Google, Facebook and other social medias to help keep students from visiting other sites when they are supposed to be working.

Learning styles have evolved significantly over the years. While the traditional method of teaching is carried out with the help of reading and memorization techniques, the modern style of work includes interactive methods.

The traditional teaching method, also known as traditional teaching, is still widely used in schools. The old style of teaching was associated with reading, for example, the students sat in silence, and one by one the students took turns reading the lesson until each of them was called. The teacher listened to each student’s reading, and they

had to learn and memorize the assignments. At the end of the module, a written test or an oral exam is conducted; this process consists of studying a task called a reading test.

The method of teaching traditional methods ensured that students would be rewarded for their efforts, use lesson cycles effectively, and use clear rules to manage student behavior. They were based on established traditions that have been successfully used in schools for many years. Teachers passed on knowledge and standards of behavior. There are lots of advantages and disadvantages of traditional teaching in classroom. The advantages of traditional teaching are as follows:

#### Less Distraction

Technology-based methods are designed to be fast, easy and convenient, but are they applicable in practice? For many employees, e-learning is something that fits into their working day, but what happens when training is interrupted by a call or a small talk with a colleague? People are easily distracted by e-learning. According to a study published in the journal of the Educational Technology Association (Alt), a number of students they interviewed reported that the unexplored applications of the technologies they used distracted them from learning. Traditional classroom activities are designed to allow students to participate in the curriculum with minimal distractions. This type of teaching forces students to focus on their focus and focus on the subject on the side without distracting them from email and colleagues.

#### Human Elements

The human factor also plays a role in the assimilation of educational material. "In addition, the role of emotions in adult education is very important because they are closely related to meaning and cognitive construction" (Dirkx, 2001; Shuck et al., 2007). Understanding that adult learners use their senses to gain and retain information and knowledge is important for the learning experience.

If a student goes through technology-based learning, they may have some shortcomings in human behavior that are related to learning emotions. For example, on a standard online video course, there may be no sound tone produced and, of course, transmitted by the message of the material. When taking classes in the classroom, the student has instructions from the coach that he can use to try to remember the information later.

As it is said that the coin has two sides, traditional teaching has disadvantages as follows:

#### Lacks Student Focused Learning

The disadvantage of traditional education is that it attaches the greatest importance to standards, curricula and passing tests, as opposed to student-centered learning. Student-centered learning attaches importance to the student and structures



the curriculum around questions that young people must answer in order to understand the material. Constructivist education is based on the knowledge that students already have, which allows them to create clear associations with new information, which improves memorization. Traditional education is based on repetition and memorization of facts that care less about students and maintain low grades after the test.

#### Lacks Emphasis on Critical Thinking

Traditional classroom activities do not encourage critical thinking skills, the ability to actively apply information obtained as a result of experiments and reasoning. Instead, traditional classes emphasize the role of teachers as distributors of knowledge and students as repositories. This learning style does not provide students with a deeper understanding of the complex concepts and knowledge needed for lifelong learning. Students who have completed traditional training must take a test with an emphasis, for test materials or not. Thus, the learning process is devalued, and students are not encouraged to understand the methods, techniques and skills needed to find answers. Constructivist education makes the process as important as the results, because it encourages skills and abilities are important long after school.

#### Neglect of larger concepts or structures

Instead of focusing on larger concepts and treating the context of learners in learning as constructivist learning, traditional learning focuses on key skills and gradually builds into a cohesive whole. While this simplifies learning, it provides a little context that can alienate students.

#### Lacks Interactivity

Traditional classes focus on individual work and projects of students and are poorly prepared for the future work of students, which includes teamwork and collaboration with colleagues. According to this learning model, students have few opportunities to participate in group dynamics and teamwork.

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## THE IMPACT OF CHATGPT-BASED ASSISTANCES ON COMPUTER SCIENCE STUDENTS' LEARNING

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### **Abstract:**

*This article explores the impact of ChatGPT-based virtual assistants on computer science students' learning experiences. By enabling interactive conversations and providing instant explanations, these AI-powered assistants enhance understanding, promote problem-solving skills, and offer support in coding challenges. The article discusses both the positive and negative impacts of integrating ChatGPT-based assistants into computer science education.*

**Keywords:** ChatGPT, virtual assistants, computer science, learning, problem-solving, coding challenges.

### **Introduction**

The field of computer science is rapidly evolving, and students face the challenge of mastering complex concepts and practical problem-solving skills. In recent years, the integration of ChatGPT-based virtual assistants has emerged as a promising approach to support computer science students in their learning journey. These virtual assistants leverage natural language processing capabilities to engage in interactive conversations with students, providing instant explanations and guidance. This article aims to explore the impact of ChatGPT-based assistants on computer science students' learning, considering both the positive and negative aspects of their integration.

### **The Way of Asking ChatGPT to Solve Coding Problems**

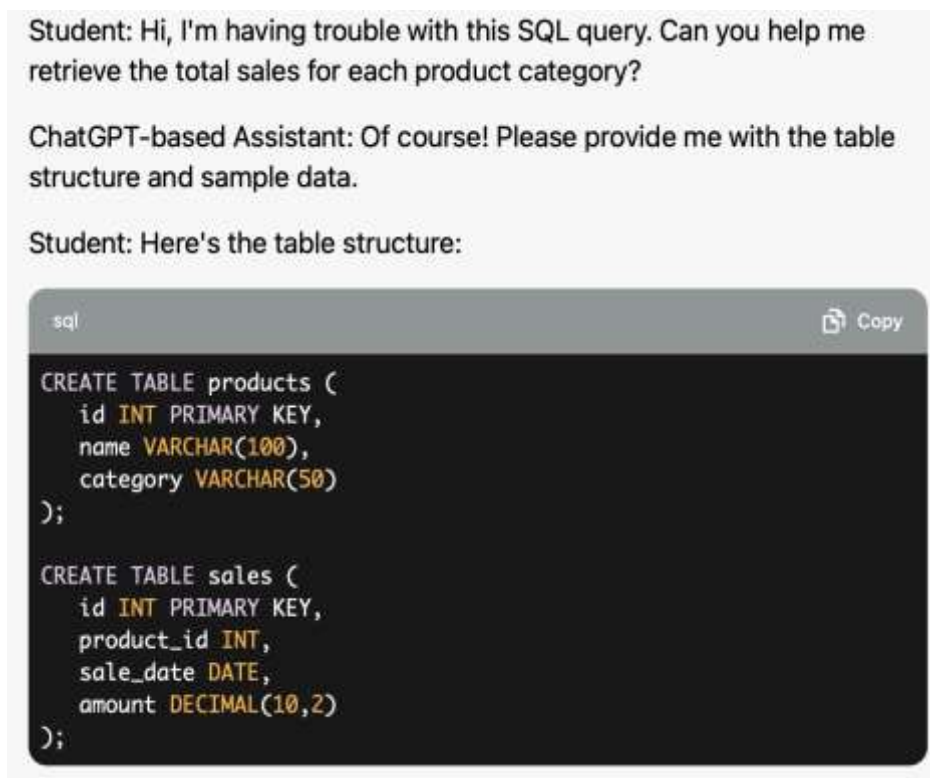
One significant aspect of ChatGPT-based assistants is their ability to assist students in solving coding problems. Students can ask questions, seek guidance, and even request solutions to coding challenges. By providing step-by-step explanations and alternative approaches, these virtual assistants help students understand the

underlying principles and strategies involved in coding. This interactive learning environment not only enhances students' coding skills but also cultivates critical thinking and problem-solving abilities.

### Negative Impacts

While ChatGPT-based assistants offer valuable support, there are potential negative impacts to consider. One concern is the over reliance on virtual assistants, which may hinder students' independent thinking and problem-solving skills. Relying too heavily on these assistants could result in a lack of initiative and creativity in finding solutions. Another challenge is the potential for incorrect or misleading information provided by the virtual assistants. As AI models, ChatGPT-based assistants are not infallible and may occasionally provide inaccurate or incomplete responses, leading students astray.

Let's consider a case where a student asks a SQL-based question and the assistant



tries to solve the problem.

And here's some sample data:

```
sql Copy
INSERT INTO products (id, name, category)
VALUES (1, 'Product A', 'Electronics'),
       (2, 'Product B', 'Clothing'),
       (3, 'Product C', 'Electronics'),
       (4, 'Product D', 'Clothing'),
       (5, 'Product E', 'Accessories');

INSERT INTO sales (id, product_id, sale_date, amount)
VALUES (1, 1, '2022-01-01', 100.00),
       (2, 2, '2022-01-01', 50.00),
       (3, 3, '2022-01-01', 200.00),
       (4, 4, '2022-01-01', 75.00),
       (5, 5, '2022-01-01', 30.00);
```

Assistant: Thank you for providing the information. Here's the query to retrieve the total sales for each product category:

```
sql Copy
SELECT category, SUM(amount) AS total_sales
FROM products
JOIN sales ON products.id = sales.product_id
GROUP BY category;
```

In this particular case, the student approached the ChatGPT-based virtual assistant seeking help with an SQL query to retrieve the total sales for each product category. However, the initial response from the assistant provided an incorrect answer that included an additional category not present in the "products" table. This discrepancy arose due to the possibility of sales being made for a product category that was not defined in the "products" table. It is important for students to exercise caution and critical thinking when relying solely on virtual assistants, as discrepancies in the provided results can occur.

To rectify the situation, the correct answer was provided, which involved joining the "products" and "sales" tables based on the product ID and calculating the total sales for each product category. It is crucial for students to validate the table structures, data integrity, and query logic to ensure accurate results when working with SQL queries. By verifying the relationships between tables and double-checking the data consistency, students can confidently utilize the assistance of virtual mentors while also practicing independent thinking and problem-solving to ensure accurate and reliable outcomes. Positive Impacts

Despite the potential drawbacks, ChatGPT-based assistants bring several positive impacts to computer science education. These assistants create an interactive and engaging learning environment, where students can ask questions freely without fear of judgment. This encourages active participation and fosters a supportive learning community. Moreover, the instant feedback and explanations provided by the assistants enable students to make immediate progress in their understanding and problem-solving skills. This real-time support contributes to a more efficient learning process.

### **Improved Accessibility and Flexibility**

One notable advantage of ChatGPT-based assistants is their ability to enhance accessibility and flexibility in computer science education. These virtual assistants can be accessed anytime and anywhere, providing students with round-the-clock support. This accessibility eliminates the constraints of time and physical location, enabling students to seek assistance and engage in interactive learning at their own convenience. This flexibility empowers students to take ownership of their learning, accommodating diverse learning styles and preferences.

### **Enhanced Confidence and Empowerment**

By utilizing ChatGPT-based assistants, computer science students can develop a sense of confidence and empowerment in their abilities. The instant feedback and guidance provided by the virtual assistants instill a sense of reassurance, allowing students to navigate complex concepts and coding challenges more effectively. As students witness their progress and growth through the assistance of these virtual mentors, they become more confident in their abilities to tackle future challenges independently. This self-assurance not only enhances their academic performance but also prepares them for professional endeavors in the field of computer science.

### **Ethical Considerations and Responsible Use**

As technology continues to advance, it is crucial to address the ethical considerations and responsible use of ChatGPT-based assistants in computer science education. Educators and institutions should emphasize the importance of using these assistants as learning tools rather than complete solutions. Encouraging students to engage in critical thinking, problem-solving, and independent exploration alongside the assistance of virtual mentors ensures a balanced approach to learning. Additionally, ongoing monitoring and evaluation of the virtual assistants' responses and performance are necessary to maintain the accuracy and reliability of the information provided.

## Conclusion

The integration of ChatGPT-based virtual assistants in computer science education has a profound impact on students' learning experiences. From improved accessibility and flexibility to enhanced confidence and empowerment, these virtual assistants offer valuable support in understanding complex concepts and solving coding challenges. However, responsible use and ethical considerations should be at the forefront of their implementation. By striking a balance between utilizing the benefits of ChatGPT-based assistants and promoting independent thinking, computer science education can harness the full potential of AI technology to empower and equip students for success in the ever-evolving world of technology.

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## LEXICAL ISSUES IN TRANSLATION THEORY AND COMMON WAYS OF OVERCOMING THEM

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***Abstract:** This article will discuss common lexical problems which give a rise during translation study. As the translation field incorporated into the curriculum of students, its difficulties cannot be avoided and thus should be suppressed with several lexical transformations, which will be described in the article as well*

***Keywords:** lexical issues, lexical substitution, inexpressibility of words, realias.*

Each language is a deeply original, specific phenomenon. The meaning is conveyed using translation correspondences, which have a different linguistic expression, a different set of semes, which requires different translation transformations. Translation from Russian into English is fraught with many difficulties. One of them is a different vision of the world and the associated linguistic selectivity. The Russian language is characterized by a large number of long polysyllabic words, while in English, on the contrary, short monosyllabic words predominate. In English, verb forms are more often used, while in Russian, nominal forms are used. The Russian language is more emotional, while English is more pragmatic.

Let's look at some of the most common difficulties that arise when translating vocabulary from Russian into English.

1. Many terms accepted for use in the political Russian language are distinguished by their emotionality, stylistic overtones and may turn out to be "false friends of the translator", for example: revolution – revolution differ not only in the fact that in English the turnover has a meaning, but also in the assessment. In Russian, the word revolution takes on a radical character and always denotes progress in change, while in English the word has both progressive and regressive connotations.

2. Often Russian military terms require descriptive translation into English. Military metaphors and terms are familiar to Russian people, but among foreigners



they evoke a feeling of Russian aggressiveness. Over the course of Soviet rule, their number decreased, but they still remain, which is why it is recommended to replace them with neutral words. In addition, in political Russian texts a large number of terms that are not in English require descriptive translation: sequester – budget cuts

3. When translating into English, it is necessary to pay special attention to the translation of abbreviations; you also need to be well aware of the established names of international organizations and positions and not translate them literally. For example: UN Secretary General. Moreover, it is necessary to know the abbreviations and not translate them back, as this can lead to fundamental distortion of information, for example: OSCE – OSCE (Organization on Security and Cooperation in Europe).

4. In political vocabulary there is a large number of clichés that you just need to know to translate. However, it should be remembered that the same term can take on different meanings depending on the context. For example: hotbed of tension, task – goal, task, aim, purpose, objection.

5. Great difficulties are caused by the translation of realities – these are concepts related to life, everyday life and are absent in the language systems of other people, for example: region – область. Realities are often conveyed through transcription, transliteration and tracing, or through description, for example: дача- summer house. Realities serve to convey expression, and since explanations lengthen the text, they sometimes resort to generalization, specification, or semantic development.

6. During the period of Soviet power, many so-called Sovietisms appeared, they also require description and explanation when translated, for example: machine operator – machine operator. When compounding words during translation, they are expanded into a phrase, for example: scientific and pedagogical personnel – teaching and scientific staff.

7. A special place in translation is given to verbal nouns, which abound in Russian-language texts; such words require significant transformation during translation. They can be translated by nouns, infinitives, a combination of a preposition with a gerund, a gerund, and sometimes, if they are insignificant, they can be omitted during translation. The Russian language is characterized by substantivization of actions and processes; verbal nouns are used in the position of subject, object, circumstance, and when translated into English a number of transformations are required. It is recommended to replace an abstract noun with a concrete one

8. Translation of phraseological units also requires a special approach. In Russian, phraseological units are more emotional than in English. They are often weakened when translated into English. The same concept can be presented with varying degrees of colloquialism and evaluation. In the Russian language, peripheral

vocabulary is widely used, outdated, which is practically absent in English, for example: not so hot – not all that well. In English, as mentioned earlier, they are extremely rare, for example: willy–nilly- волей-неволей.

English phraseology is often associated with the Bible and sports, so to translate it you need to be familiar with the topic. To translate phraseological units, substitutions, tracings, analogues, equivalents or descriptive translation are used. If Russian phraseology is full of archaic expressions, then English phraseology is full of slang. Among phraseological units you can also find “false friends of the translator” – they coincide in the composition of the components, but differ in meaning, for example: to lead by the nose (to deceive) – to lead by the nose (to completely subjugate). Thus, to translate a phraseological unit, it is necessary to select the components of the semantic structure of the original and select the closest equivalent, using, if possible, the same techniques.

In addition to the above, it is necessary not to forget that verbs borrowed from Latin or Greek are often used in the Russian language. They are present in English, but there they create the effect of text heaviness and formality. When translating into Russian, it is better to use short phrases with postpositions, for example: compensate – make up for somebody

There are principal types of lexical correspondences between 2 languages: 1) complete, 2) partial, 3) an absence of correspondence

Complete correspondence can not be found always, due to its complexity and it only make translation with the terms related to geographical names, science and technology, the months and days of the week, numerals.

Partial correspondences are usually in use, in this way of rendering, translator look at the words, which have identical meaning in the TL as well as recognise and pick up the mostly suitable one

Following ways of rendering:

### 1. Substitution

Concrete definition – replacing a word with a broad sense by one of a narrower, she is in the kitchen – она ГОТОВИТ

Generalization- replacing a word’s narrow meaning by one with a broad sense: A Oolong tea – китайский чай;

An integral transformation: How is it going – Как дела?

Antonymous transformation is a lexical substitution of any word with negative meaning or vice versa

2. **Supplementation** – addition of extra elements to the words, which are inexpressible: Pay claim – требование о выплате

3. **Omitting** – words with surplus meaning are usually removed, to pull one's nose – дурачить

Absence of correspondences usually appears, when it is impossible to find analogs or equivalents for the words, which interferred in the SL, for instance, it is always the case with realia

Realias – are the linguistic units related to objects, phenomenon and reflect a national life, culture and identity of a particular country

### Conclusion

Thus, all of the above suggests that the translator must strive to preserve the original. At the same time, we should not forget that some expressions are familiar in one language and completely unusual in another. The main thing to strive for is to convey the image and intention of the original.

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**ЎҚУВЧИ ЁШЛАРНИНГ ИЖТИМОЙЛАШУВИДА БЎЛАЖАК  
ФУҚАРОЛАРНИ ВАТАНПАРВАРЛИК РУҲИДА ТАРБИЯЛАШДА  
МИЛЛИЙ-МАЪНАВИЙ ҚАДРИЯТЛАР ВА ТАРИХИЙ МЕРОСДАН  
ФЙДАЛАНИШНИНГ ДАВЛАТ СИЁСАТИДАГИ ЎРНИ ВА ЎЗИГА  
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*Сайёрамизнинг эртанги кун, фаровонлиги фарзандларимиз қандай инсон бўлиб камолга етиши билан боғлиқ. Бизнинг асосий вазифамиз – ёшларнинг ўз салоҳиятини намоён қилиши учун зарур шароитлар яратишдан иборат.*

*Ўзбекистон Республикаси Президенти*

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*72-сессиясида сўзлаган нутқидан*

**Аннотация:** Ушбу мақоланинг мазмунида мамлакатимиз таълим-тарбия тизимида илм-фаннинг ривожланиши асосида ўқувчи ёшларни ватанпарварлик руҳида тарбиялашда миллий-маънавий қадриятлар ва тарихий меросдан фойдаланишнинг давлат сиёсатидаги ўрни ва ўзига хос хусусиятлари баён этилади.

**Калит сўзлар:** Таълим-тарбия, илм-фан, ўқувчи ёшлар, бўлажак фуқаролар, ватан, ватанпарвар, ватанпарварлик, қадрият, миллий қадрият, маънавий қадрият, миллий мерос, тарихий мерос.

## РОЛЬ И ОСОБЕННОСТИ ГОСУДАРСТВЕННОЙ ПОЛИТИКИ ИСПОЛЬЗОВАНИЯ НАЦИОНАЛЬНЫХ ДУХОВНЫХ ЦЕННОСТЕЙ И ИСТОРИЧЕСКОГО НАСЛЕДИЯ В ПАТРИОТИЧЕСКОМ ВОСПИТАНИИ БУДУЩИХ ГРАЖДАН, В СОЦИАЛИЗАЦИИ СТУДЕНЧЕСКОЙ МОЛОДЕЖИ

*Аннотация:* В содержании данной статьи рассмотрены роль национально-духовных ценностей и использования исторического наследия в государственной политике и особенности воспитания студенческой молодежи в духе патриотизма на основе развития науки в образовательной системе описана наша страна.

*Ключевые слова:* Образование, наука, студенческая молодежь, будущие граждане, Родина, патриотизм, патриотизм, ценность, национальная ценность, духовная ценность, национальное достояние, историческое наследие.

## ROLE AND FEATURES OF STATE POLICY OF USE OF NATIONAL SPIRITUAL VALUES AND HISTORICAL HERITAGE IN THE PATRIOTIC EDUCATION OF FUTURE CITIZENS, IN THE SOCIALIZATION OF STUDENT YOUTH

*Annotation:* The content of this article examines the role of national-spiritual values and the use of historical heritage in public policy and the features of educating students in the spirit of patriotism based on the development of science in the educational system and describes our country.

*Key words:* Education, science, students, future citizens, homeland, patriot, patriotism, value, national value, spiritual value, national heritage, historical heritage.

**Тадқиқот ишининг долзарблиги:** Маълумки, ёш авлод тарбияси барча замонларда ҳам долзарб вазифалардан бири бўлиб, муҳим аҳамият касб этиб келган. Кишилик жамияти ХХI асрга қадам қўйганидан кейин бу масала янада долзарб, янада муҳим, ҳаёт-мамот масалаларидан бирига айланиб қолди. Ўз даврида Мустақил Ўзбекистоннинг биринчи Президенти Ислон Абдуғаниевич Каримов -шундай деб ёзган эди, - Мен, - Абдулла Авлонийнинг “Тарбия биз учун ё ҳаёт – ё мамот, ё нажот – ё ҳалокат, ё саодат – ё фалокат масаласидир” деган фикрини кўп мушоҳада қиламан. Буюк маърифатпарварнинг бу сўзлари асримиз бошида миллатимиз учун қанчалар муҳим ва долзарб бўлган бўлса, бугунги янгиланаётган Ўзбекистон жамиятимиз учун ҳам шунчалик, балки

ундан ҳам муҳим ва долзарбдир” [1]Тарбия қанча мукамал бўлса, халқ шунча бахтли яшайди дейди донишмандлар.Тарбия мукамал бўлиши учун эса бу масалада бўшлиқ (маънавий бўшлиқ) пайдо бўлишига мутлақо йўл қўйиб бўлмайди. Инсоният XXI асрга қадам қўйганидан кейин, бугунги глобаллашган замонда дунё миқёсида бешафқат рақобат, қарама – қаршилиқлар ва зиддиятлар кескин тус олмоқда. Диний экстремизм, терроризм, гиёҳвандлик, одам савдоси, фоҳишабозлик, ноқонуний миграция, маданий миграция, “оммавий маданият” ва бошқа шу каби хавф – хатарлар тобора кучайиб, инсоният асрлар давомида амал қилиб келган миллий, диний ва оилавий қадриятлар, эътиқодларга путур етмоқда. Мана шундай кўплаб таҳдидлар инсоният ҳаётида, айниқса ёшлар, жумладан ўқувчи ёшлар тарбиясида жиддий муаммоларни келтириб чиқараётгани – аччиқ бўлса ҳам айни ҳақиқат ва буни ҳеч ким инкор эта олмайди. Бугунги кунда ўқувчи ёшларимиз тарбияси – бу бир одамнинг ёки бир инсоннинг, бир оила ёки бир ота-онанинг, бир маҳалла ёки бир мактабнинг иши эмас. Бу барчаннинг иши. Агар бизлар, яъни оилада ота-оналар, боғчада тарбиячилар, мактаб ва олий таълим муассасаларида ўқитувчилар, маҳалла ва кенг жамоатчилик биргалашиб, бир ёқадан бош чиқариб ҳаракат қилсак, фарзандларимиз, ўқувчи ёшларимиз Ватан ва эл – юрт қорига ярайдиган инсонлар бўлиб улғаядилар. Яхши тарбия инсонга маънавий каби она сути, ота намунаси ва аждодлар ўғити билан бирга сингади. “Ўз халқига, унинг анъаналарига, тили ва маданиятига муҳаббат ва ҳурматни тарбияламасдан туриб, ўз халқини миллатларнинг бутун жаҳон ҳамжамиятида тенглар ичида тенглардандан бири сифатида идрок қилувчи ҳақиқий инсонни, ўз Ватанининг ҳақиқий жонкуярини тарбиялаш мумкин эмас”.[2] Мустақил Ўзбекистон Республикасимизнинг биринчи Президенти Ислон Абдуғаниевич Каримовнинг ўз даврида айтилган ушбу сўзлари, тарбия бобида ҳар бир ота – она, ҳар бир фуқарога дастурил амал бўлмоғи лозим. Шу ўринда Ўзбекистон Республикасининг Президенти Шавкат Миромонович Мирзиёевнинг қуйидаги сўзлари ҳам юқоридаги фикрларни батамом ва тўла-тўқис тасдиқлашини кўришимиз мумкин “Биз ўз олдимизга мамлакатимизда Учунчи Ренессанс пойдеворини барпо этишдек улуғ мақсадни қўйган эканмиз, бунинг учун янги Хоразмийлар, Берунийлар, Ибн Синолар, Мирзо Улуғбеклар, Навоий ва Бобурларни тарбиялаб берадиган муҳит ва шароитларни яратишимиз керак. Бунда, аввало таълим ва тарбияни ривожлантириш, соғлом турмуш тарзини қарор топтириш, илм-фан ва инновацияларни тараққий эттириш миллий ғоямизнинг асосий устунлари бўлиб, хизмат қилиши лозим”. [3] Ушбу мақсад йўлида ёшларимиз ўз олдиларига катта мақсад ва марраларни қўйиб, уларга

эришишлари учун кенг имкониятлар яратиш ва ҳар томонлама кўмак бериш – барчамиз учун энг устувор вазифа бўлиши зарур. Шундагина фарзандларимиз халқимизнинг асрий орзу-умидларини рўёбга чиқарадиган буюк ва қудратли кучга айланади. Шу мақсадда, “Янги Ўзбекистон – мактаб остонасидан, таълим-тарбия тизимидан бошланади” деган ғоя асосида кенг кўламли ислохотларни амалга оширамиз”. [4] Демак, фарзандларимизнинг ким бўлиб вояга етиши, энг аввало, ўзимизга боғлиқ экан. Бу ҳақиқатни асло инкор этиб бўлмайди. Аммо, ўз – ўзидан шундай савол туғилади. Ҳақиқатдан ҳам бугунги глобаллашган мураккаб замонда, интернет тизими орқали, алдов ва қизиқтириш йўллари билан ёшларимиз, айниқса ўқувчи ёшларимиз онги ва қалбини, тафаккурини эгаллашга уринишлар бўлиб турган бир пайтда, юртимиздаги барча ота – оналар ҳам юқорида айтиб ўтилган вазифаларни виждонан ва сидқидилдан уддалай олаётдиларми? Фарзанди тарбиясини мактаб, маҳалла, ёки жамият зиммасига ташлаб қўйганлар йўқми орамизда? Ўғли ёки қизи тақдири билан қизиқмайдиган, нима бўлса пешонасида борини кўради, деб ҳаётдан нолиб юрадиганлар ҳам оз бўлсада орамизда топилади.

Ўзбек миллий давлатчилик тарихимизга бир назар ташлайдиган бўлсак, қадим замонлардан бошлаб зардуштийликнинг муқаддас китоби - “Авесто”да ҳамда ислом динининг муқаддас китоби “Қуръони каримда”, улуғ аждодларимиз - Абу Наср Форобий, Абу Райҳон Беруний, Абу Али Ибн Сино, Алишер Навоий асарларида ҳам инсонда юксак ахлоқий фазилатларни камол топтиришда оила ва миллий кадриятлар масаласи асосий ўринни эгаллаган. Маълумки, ўзбек оиласи ўзида миллатимизга хос кўп асрлик маънавий кадрият ва анъаналаримизни, удум ва расм-русумларимизни, маънавий-маърифий, маданий меросимизни сақлаб келади. Оилада шаклланган ўзбек миллатига хос бўлган муомила маданияти, меҳр-оқибат, мурувват, андиша, ибодат ва ор-номус каби одоб-ахлоққа оид ҳис-туйғулар нафакат тарбия вазифасини ўтайди, балки инсоний кадриятлар ва фазилатларнинг намоён бўлишида, комил инсонни шакллантиришда муҳим роль ўйнайди. Шарқда миллий кадриятларни фарзандлар онги ва қалбига сингдириш оиладан бошланади. Жумладан, ёшлар катталардан: сувга туфлама, сувга ахлат ташлама, нон устига нарса қўйма, ноннинг увоғи ҳам нон, ёши улуғларнинг йўлини кесиб ўтма, ота-онангнинг гапини иккита қилма, устозингни ҳурмат қил, атрофинга бефарқ бўлма каби насиҳатларни эшитиб, турли ривоят, мақол, ҳикматларни тинглаб, хотираларида сақлаб вояга етадилар. Ёшлар бизнинг келажагимиз, улар аждодларимиз ва ота-боболаримиз, шунингдек ота-оналаримизнинг ишининг давомчилари ҳисобланади. Шундай экан биз танлаган “Ўқувчи ёшларнинг ижтимоийлашувида бўлажак фуқароларни ватанпарварлик



руҳида тарбиялашда миллий-маънавий кадриятлар ва тарихий меросдан фойдаланишнинг давлат сиёсатидаги ўрни ва ўзига хос хусусиятлари” мавзуси бугунги куннинг энг долзарб мавзуларидан бири саналади.

**Таклиф ва тавсиялар:** Бизнинг асосий мақсадимиз - миллий ва маънавий кадриятлар асосида комил ва ватанпарвар инсонларни тарбиялашдир. Комил инсон деганда, энг аввало, дунёқараши кенг, ватанпарвар, мустақил фикрлай оладиган, хулқ-атвори билан ўзгаларга ибрат бўладиган, масъулиятли ва соғлом кишиларни тушунамиз. Инсон фақат тарбия ва тарбияланиш орқалигина комилликка эришади. Унинг маънавий даражаси қанча юқори бўлса атрофида юз бераётган ижтимоий-сиёсий воқеа-ҳодисалар ва жараёнларни тез англай олиши қабул қилиши ва мустақил фикрлай олиши шунча юқори бўлади. Шундай экан, оилада, маҳаллада, мактабда, олий таълим тизимида ва жамиятимизда ўқувчи ёшларимизнинг маънавий дунёқарашини мустаҳкамлашда миллий урф-одат ва кадриятларимизга оид бой маънавий меросимиздан фойдаланиш мақсадга мувофиқдир. Жумладан, “Авесто” [5] даги “Эзгу фикр - эзгу сўз ва эзгу амал” ғояси бўйича фикр юритиш; Қуръони карим, ҳадису шариф каби муқаддас манбаларимизда келтирилган маънавий-маърифий ўғитлар орқали ўқувчи ёшларимиз онгида руҳий покдомонлик, иймон-эътиқод, ор-номус, ибодат, ҳаё, камтаринлик, меҳр-оқибатлилиқ, самимийлик ва бошқа бир қатор инсоний фазилатлар тушунчаларини шакллантиришга хизмат қилади. Инсоният тарихи шундан далолат берадики ҳар бир миллатнинг ва халқнинг миллий кадриятларини унинг миллий давлатчилиқ тарихини, маданиятини, маънавиятини, ўзига хос миллий урф-одатлари ва анъаналарисиз тасаввур қилиш кийин. Инсоният пайдо бўлиши билан унинг тили, урф-одатлари, анъаналари, дини, маданияти, эзгуликни ифодаловчи ахлоқий фазилатлари вужудга кела бошлаган. Уларнинг мазмунида халқнинг ҳаёт тарзи, руҳияти, маънавияти, маданияти, турмуш тарзи, орзу-истаклари ва ўй-хаёллари акс этган. Миллий кадрият - миллатнинг тарихи, яшаш тарзи, маънавияти ҳамда маданияти билан узвий боғлиқ ҳолда намоён бўлади. Шу ўринда кадрият тушунчасига ҳам изоҳ бериб кетишни лозим топдик. Кадрият атамаси арабча “кадр” сўзидан олинган бўлиб, қимматли, фойдали деган маънони англатади. Бизнинг менталитетимизга хос бўлган миллий кадриятлардан андиша, сабр-тоқат, вазминлик, мулозамат, сертакаллуфлик, кексаларга ҳурмат-эҳтиром, ижтимоий ҳаётда босиқлик қон-қонимизга сингиб кетган. Биз юқорида таъкидлаганимиздек, ўзбек халқи **миллий маънавий кадриятлар** ва одоб ахлоқга бағишланган махсус теран таълимотларнинг меросхўридир. Жумладан, Юсуф Хос Ҳожибнинг “Қутадғу билиг”, Аҳмад Югнакийнинг “Ҳиббат ул-

хақойиқ”, Кайковуснинг “Қобуснома”, Бурҳониддин Марғинонийнинг етти китобдан иборат “Ҳидоя”, [6] Ҳусайн Воиз Кошифийнинг “Ахлоқи Муқсиний”, [7] имом ал-Бухорийнинг “Ал-адаб ал-муфрад”, “Ал Жомеъ ас Саҳиҳ”, имом ат-Термизийнинг “Шамоиلى-Муҳаммадия” номли одоб-ахлоқ меъёрларини батафсил ёритиб берувчи асарлари бугунги кунда ҳам ўз аҳамиятини, долзарблигини йўқотмаган.

Қадрият - бу табиий ва ижтимоий ҳаётда намоён бўладиган шахсий ва ижтимоий эҳтиёжни қондиришга хизмат қиладиган моддий-маданий, маънавий омиллар йиғиндиси. “Қадрият инсон ва инсоният учун аҳамиятли бўлган миллат, элат ва ижтимоий гуруҳларнинг манфаатлари ва мақсадларига хизмат қиладиган ва улар томонидан баҳолашиб, қадрланадиган табиат ва жамият неъматлари, ҳодисалари мажмуини тушунмоғимиз лозим”. [8] “қадриятлар - жамиятда кишилар ўртасида обрўга, эътиборга, ҳурматга, нуфузга эга кишилар, муносабатлар, ҳолатлар, моддий нарсалар ва маънавий бойликлар мажмуаси”, “Қадрият инсон ва жамият маънавиятининг таркибий қисми, оламдаги воқеалар, ҳодисалар, жараёнлар, ҳолатлар, сифатлар, талаб ва тартибларнинг қадрини ифодалаш учун ишлатиладиган тушунча”.,[9] “Қадрият- воқелиқдаги муайян ҳодисаларнинг умуминсоний, ижтимоий-ахлоқий, маданий-маънавий аҳамиятини кўрсатиш учун қўлланадиган тушунча” деган таърифлар берилган. Бу эса ўз навбатида, қадриятларнинг аҳамиятини кўрсатмоқда.

Миллий қадриятлар - миллат учун аҳамиятга эга бўлган этник жиҳат ва хусусиятлар билан боғлиқ хослик шаклидир. Дунёда ўзига хос қадриятлари бўлмаган миллат йўқ. Миллий қадриятлар миллатнинг тарихи, яшаш тарзи, маънавияти, маданияти билан узвий боғлиқ ҳолда намоён бўлади. Мустақиллик йилларида Ўзбекистонда миллий қадриятларга эътибор кучайди. Бу она юртимизга эҳтиром, авлод-аждодларимиз хотирасига садоқат, катталарга ҳурмат, кичикларга иззат, ҳаё, андиша каби инсоний фазилатларнинг устуворлиги билан тавсифланади. Қадриятларни фақат моддий ва маънавий бойликлар сифатида тушуниш, изоҳлаш илмий жиҳатдан тўғри эмас. Маълумки, қадриятлар ўз моҳиятига кўра хилма-хилдир. Улар орасида табиий, моддий, маънавий, ижтимоий-сиёсий, ахлоқий қадриятлар алоҳида ажралиб туради. Шундай бўлсада, қадриятларнинг энг олийси инсоннинг ўзи, ҳаёти, ҳуқуқи ва эрки, соғлом ва фаровон турмуши ҳисобланади. “Инсон кадр-қимматини, шарафини улуғлаш жамиятимиз покланиши ва равнақининг муҳим омилдир”. [10]

Ғуломхон Ғофуров миллий анъаналарга бағишланган мақолаларидан бирида **миллий қадриятларнинг** қуйидаги кўринишларини тилга олган: 1) табиий

қадриятлар; 2) иқтисодий қадриятлар; 3) ижтимоий-сиёсий қадриятлар; 4) маънавий қадриятлар; 5) ахлоқий қадриятлар. Жумладан, “Ота-боболаримиз илм ўргатиш билан бирга фарзандларимизга авлоддан-авлодга ўтиб келаётган **миллий-маънавий, ахлоқий қадриятларни** сингдирганлар”[11] “Ўзбекларнинг аксарияти... яқин одамларнинг, қўшнилари омон-эсонлиги тўғрисида ғамхўрлик қилишни биринчи ўринга қўяди. Бу эса энг олий даражадаги **маънавий қадрият**, инсон қалбининг гавҳаридир”[12] “Иқтисодий қадрият - иқтисодий муносабатлар жараёнида шахслар ўртасидаги ўзаро манфаатларни ҳисобга олиш, ҳалоллик, поклик, бағрикенглик, ишончлилик каби фазилатларнинг амал қилинишини англатадиган тушунча”[13] Шу ўринда қўни-қўшничилик қадриятини мисол қилиб келтирсак, унда қўшнилари ўртасида ўзаро ишонч, хабар олиш ва моддий ёрдам бериш миллий қадрият сифатида биринчи ўринга қўйилган. Маънавий мерос, маданий бойликлар, кўхна тарихий ёдгорликлар ҳаётини қадриятларнинг энг муҳим омиллари сифатида келтирилган. Мустақиллигимиз шарофати билан юртимизда амалга оширилаётган кенг қамровли ислохотлар натижасида кейинги вақтларда тарбия масаласида қўлга киритилган ютуқларимиз қаторида оилада, мактаб, маҳалла ва жамоат ташкилотларида миллий, умуминсоний қадриятларнинг, анъаналарнинг устуворлигига эришилди. Ўзбекистон Республикасининг Президенти Шавкат Миромонович Мирзиёевнинг “Ёшларимизнинг мустақил фикрлайдиган, юксак интеллектуал ва маънавий салоҳиятга эга бўлиб, дунё миқёсида ўз тенгдошларига ҳеч қайси ғояда бўш келмайдиган инсонлар бўлиб камол топиши, бахтли бўлиши учун давлатимиз ва жамиятимизнинг бор куч ва имкониятларини сафарбар этамиз”, - деган фикрлари ёш авлодни миллий қадриятлар асосида етук, баркамол этиб тарбиялашда барчамизга куч-ғайрат бағишламоқда. [14] Сафо Очил ўзининг “Мустақиллик ва тарбия масалалари” номли рисоласида миллий қадриятларимиз ҳақида жумладан шундай дейди. “Миллий қадриятлар ота-боболардан бизгача етиб келган удумлар: Рамазон ҳайити, Қурбон ҳайити, Наврўз, уруғ-дон экиш ва ҳосил байрамлари, бешик тўйи, суннат тўйи, ўғил уйлантириш ва қиз чиқариш билан боғлиқ тўйлар, уй-жой тўйи, қазо билан боғлиқ турли маърака-маросимлар, шунингдек, халқнинг ҳар хил анъаналари - ҳашар, ота-оналарга ҳурмат, ёшларга иззат, қарияларга мурувват, миллий одоб-ахлоқ меъёрларига амал қилиш, илм олиш, оила мустаҳкамлигига эришиш, устозлар қадрига етиш, вафот этганлар қабрини зиёрат этиш, халққа муҳаббат, Ватанни севиш ва ардоқлаш, аскарликка ўз ихтиёри билан бориш, байналмилалчи бўлиш, мулойимлик ва ширинсуханлик ва шу қабиларни ўз ичига қамраб олади”. [15] Миллий қадриятларимизнинг асоси бўлган маънавийят

ва маданият ўқувчи ёшларимизнинг ижтимоийлашувида бўлажак фуқароларимизни ватанпарварлик руҳида тарбиялашда, уларда инсонийлик ҳис-туйғуларини шакиллантиришда хулқ-атворининг гўзаллиги, одоб-ахлоқчилиги, олийжаноблиги, ваъдасига вафодорлиги, иболи-ҳаёлиги, билим олиши, тўғри сўзлиги, донолиги, бағрикенглиги, озода ва покизалиги, қалбининг беғуборлиги, хушмуомалалиги ва шу сингари инсоний ҳислатлар муҳим роль ўйнайди. Шу ўринда Юсуф Хос Ҳожибнинг “Киши учун жуда керакли бўлган икки аъзо бор: бири - тил, бошқаси - юрак. Тил сўз учун, юрак эса шу сўздан лаззатланиши учун берилган”, деган фикри ўқувчи ёшларимизни гўзал, чиройли сўзлайдиган, маънавий баркамол, юксак одоб ва илм эгаси бўлишларида қўл келади. Юртимизда ўқувчи ёшларни миллий қадриятлар асосида интеллекти юқори ва ватанпарвар қилиб тарбиялашга катта аҳамият қаратиб келинмоқда. Ўз даврида тарбия масаласига Абдурауф Фитрат ўзининг “Оила” номли асарида болаларни “диққатлари ва зехнлари чуқур ва жиддий бўлишига ўргатинг.... Кўрганлари устидан тез хулоса чиқармасинлар”, - дея таъкидлаб, фарзанд тарбиясига эътибор бериш лозимлигини уқтиради.

Қадриятлар - умумбашарий, миллий ва шахсий бўлиши мумкин:

- 1) Олам, табиат ва жамиятнинг энг муҳим томонларини, алоқадорликларини ифодаладиган қадриятлар умумбашарий хусусиятга эга. Бундай қадриятлар ўз аҳамиятини йўқотмайдиган, умумбашарий абадий қадриятлардир;
- 2) Муайян бир элат, миллат, халқнинг ҳаёти, турмуш тарзи, тили, маданияти, урф-одат ва анъаналари, ўтмиши ва келажаги билан боғлиқ қадриятлар миллий қадриятлардир
- 3) Инсон, унинг фаолияти, турмуш тарзи, эътиқоди, умр маъноси, одоби, гўзаллиги билан боғлиқ қадриятлар шахсий қадриятлардир.[16]

1. Х.Қодирова ўзининг “Миллий қадриятлар ва маънавий мероснинг жамият ҳаётидаги ўрни” номли мақоласида: “Ўзбекистон халқи умуминсоний ва миллий қадриятларга таянади. Буларнинг бири иккинчисини инкор этмайди. Миллий қадриятлар қуйидагилардан иборат, деб қуйидагиларни санайди:

1. Халқимиз ҳаётида жамоа бўлиб яшаш руҳининг устуворлиги;
2. Халқ онгида устувор бўлган фикр - дўст ва яхши қўшни бўлиб, тинчлик ва тотувликда, яқиндан ҳамкорликда яшаш;
3. Оила, маҳалла, эл-юрт, Ватан тушунчаларини муқаддас билиш;
4. Ота-она, маҳалла жамоаларига, раҳбарларга юксак ҳурмат-эътибор кўрсатиш, бутун жамиятни ҳурмат қилиш;
5. Миллатнинг ўлмас руҳи, миллат маънавиятининг ҳаётбахш манбаи

сифатида она тилига муҳаббат уйғотиш, уни севиш;

6. Катталарга ҳурмат-эҳтиром, кичикларга иззат-эътибор, деган қоидага амал қилиш;

7. Аёл зотига эҳтиром кўрсатиш, яъни, муҳаббат, гўзаллик ва нафосат тимсоли бўлган аёлни қадрлаш;

8. Сабр-тоқат ва меҳнатсеварлик;

9. Халоллик, меҳр-оқибат [17] ни назарда тутати.

Бир катор олимлар томонидан ёзилган “Шахс маънавиятини шакллантириш омиллари ва воситалари” номли китобда Ўзбекистонни янгилаш ва ривожлантириш йўли тўртта асосий негизга асосланади:

1. Умуминсоний қадриятларга содиқлик

2. Халқимиз маънавий савиясини мустаҳкамлаш ва ривожлантириш;

3. Инсонни ўз имкониятларини эркин намойиш қилиши

4. Ватанпарварлик, инсонпарварлик, толерантлик, [18] - деб қайд этилгани ҳам айнан миллий қадриятларимиз асосида тарбиявий ишларни ёшлар ўртасида олиб боришда кўпроқ қандай йўналишларга эътибор қаратиш ва тарғибот ишларида оила маҳалла, жамоатчилик, таълим-тарбия берувчи муассасаларнинг ўрнини кучайтириш зарурлигини кўришимиз мумкин.

Муаллифлар қадриятлар ва уларнинг турларига қуйидагича ёндошганлар:

- **Оилавий қадрият** - бир оила учун маълум бир маънавият тури (масалан, туғилган кунни, никоҳ қурган кунни нишонлаш);
- **Миллий қадрият** — миллатнинг асрлар мобайнида яратган маънавий бойликлари, ноёб тарихий обидаларини авайлаб-асраш, келгуси авлодларга етказиш, ривожлантириш, ҳурмат билан муносабатда бўлиш, ҳурфикрлик, виждон ва дин эркинлигини қарор топтириш, маънавий мулкни миллий қадрият сифатида ҳимоя қилиш;
- **Жамоа қадрияти** - маълум бир маҳаллада, қишлоқда, меҳнат жамоасида бирон ижтимоий ҳодиса (оммавий тадбирлар, масалан, ҳашар) урф бўлган;
- **Умуминсоний қадрият** — жаҳон халқлари учун ижобий аҳамият касб этувчи, инсониятнинг умумий манфаатларига мос келувчи моддий ва маданий ҳамда мезонлар мажмуаси мақсад ва интилишларини ўзида ифода этади.
- Умуминсоний қадриятлар ва миллий маънавият, ўз навбатида, Ислом халқлари маънавияти, Ҳиндистон халқлари маънавияти, Европа халқлари маънавияти, Шарқ халқлари маънавияти йўналишлари қуйидагича ёритилган;

Ислом халқлари маънавияти - **араб халқлари, форсийзабон** халқлар, туркий халқлар;

- **Европа халқлари маънавияти** - рус, инглиз, француз маънавияти ва

хоказолар;

• *Ҳиндистон халқлари маънавияти* — орий халқлар маънавияти, друид халқлари маънавияти;

• *Шарқ халқлари маънавияти* - япон маънавияти, хитой маънавияти.

Инсон маънавий олами бўйича ўнга яқин мақолалар муаллифи Абдухалил Маврулов ўзининг “Ватанни севиш масъулияти” китобида ёшлар ҳақида шундай фикрларни илгари сурган: “Ёшларимизнинг аксарияти даврнинг руҳини тўғри ҳис этмоқда. ... Айни пайтда ёшларда ақл ва фаросатнинг мутаносиблигини таъминлашга бўлган интилиш жамият барқарорлигини мустаҳкамловчи омил сифатида баҳоланиши мумкин. ...Эришилган ютуқлар қатори ёшларимизнинг айрим қисмида мавжуд бўлган, баъзан янгидан пайдо бўлаётган салбий ҳолатлар, ушбу вазиятга айрим катталарнинг муносабати-ю ўша ёшларнинг бундай иллатларга нисбатан ёндашуви хавотирли. Баъзи ёши улўғларнинг ёшларимиз дунёқарашидаги муайян салбий ўзгаришларга нисбатан “замон ўзгарди, ёшлар ҳам ўзгарди-да ёки бундай ҳолни “табiiй жараён” сифатида таҳлил этишга уринишлар ҳам мавжудки, бу ҳар қандай илм аҳлини ташвишга солиши табiiй”.

Бугунги глобаллашган ва тезкор ривожланиш даврида инсонлар ўзгармоқда, қадриятлар трансформацияси юз бермоқда. Булар “оммавий маданият” деган никоб остида ахлоқий бузуқлик ва зўравонлик, индивидуализм, эгоцентризм ғояларини тарқатиш, керак бўлса, шунинг ҳисобидан бойлик орттириш, бошқа халқларнинг неча минг йиллик анъана ва қадриятлари, турмуш тарзининг маънавий негизларига беписандлик, уларни қўпоришга қаратилган хатарли таҳдидлар одамни ташвишга солмай қўймайди. “Оммавий маданият” тушунчасига ўзбек олимлари қуйидагича таъриф беради: “Оммавий маданият” - маданият мавжудлигининг мураккаб ҳамда ҳамма вақт бир хил талқин қилинмайдиган ўзига хос шакли. Оммавий маданиятни Ғарб маданияти билан боғлиқ ҳодиса деб тушуниш, шунингдек, уни ғоясизлик, сифатсизлик ва дидсизлик намунаси сифатида баҳолаш кенг тарқалган”. “Маънавият: асосий тушунчалар изохли луғати”да ҳам худди шундай изох берилган. Файласуф олим А.Эркаев “Оммавий маданият” дунёда жуда тез ва кенг тарқалди. “Оммавий маданият”да баъзи бир ижобий жиҳатлар билан бир қаторда салбий жиҳатлар ҳам қўп. Энг аввало, “оммавий маданият” инсонни барча соҳаларда, жумладан, маданият ва дам олиш, бўш вақтни ташкил қилиш борасида ҳам индивидуаллигини йўқотган истеъмолчига айлантириб қўяди. Унинг истеъмол қилаётган маънавий-маданий маҳсулотлари, “санъат асарлари” эса стандартлашган, миллий қиёфасиз (поп-арт) товарга айланади. Мусиқада ва

ашулачиликда “рэп”, “рок” каби жанрлар, жангарилик, мистик-фантастик фильмлар, триллерлар, блокбастерлар фикримизни тасдиқлайди”, -деб ёзади. “Оммавий маданият” ниқоби остида вақти-вақти билан пайдо бўладиган турли ижтимоий ҳаракатлар ва гуруҳлар (“хиппи”лар, “пранк”лар, “рокер”лар ҳамда “гей”лар (бесоқолбозлар) ҳаракати, антиглобалистлар ва ш.к.), фахш ва зўравонликни, “вампиризм”лик ва жодугарликни тарғиб қилувчи фильмлар, очиқчасига порнографик сахналардан иборат видео лавҳалар, дисклар ва бошқалар таъсири эса инсон шахсини емиришга, жамиятни дегуманизация қилиш, (яъни субъектнинг инсон зотида мансублигини инкор этишга ва уни инсон ҳуқуқларидан маҳрум қилишга қаратилган ҳаракатлар)га олиб келади. Бундай шароитда ёш авлодни, миллий маданиятни қандай ҳимоя қилиш керак, деган масаланинг ўзи жиддий сиёсий, маънавий ва илмий муаммога айланади” [19], деб ҳақли равишда эътироф этади Ш.Ғойибназаров. Давлатимиз раҳбарининг “Ёшлар, хусусан, ўсмирлар орасида безорилик, жиноятлар сони ортишига қандай омиллар сабаб бўляпти? Баъзи йигит-қизлар учун меҳр-оқибат, ахлоқ-одоб тушунчалари бутунлай бегона бўлиб бораётгани, уларда бефарқлик, масъулиятсизлик, меҳнат қилмасдан кун кўришга интилиш каби иллатлар пайдо бўлаётгани - аччиқ бўлсада, ҳақиқат”, - деган фикрлари ҳам бежиз эмас.[20]

- Бундай маълумотлар кишини беихтиёр ўйга толдиради. Хўш, ўсмирлар ота-она, мактаб, маҳалланинг қуршовида, эътиборида бўлса-да, бундай гуруҳларга қандай қўшилмоқдалар? Маълумки, инсон ҳуқуқбузарлик йўлига, оила, мактаб, маҳалла ва жамият билан узвий алоқанинг узилиши туфайлигина киради.

Президентимизнинг “Ёш оилалар орасида арзимас сабаблар билан ажрашишлар кўпайиб бормоқда. Бегуноҳ болалар етим бўлиб, меҳр ва эътиборга энг ташна вақтида ота-она тарбиясидан четда қолмоқда. ...Яна бир нохуш ҳолатни бугун афсус билан айтмоқчиман: оилаларда носоғлом муносабатлар, қайнона-келин, эр-хотин ўртасидаги жанжаллар, хотин-қизларимиз орасида ўз жонига қасд қилиш ҳолатлари борлиги шахсан мени қаттиқ изтиробга солмоқда, деган фикри барча оилалар, таълим-тарбия тизими, оила билан боғлиқ давлат ва жамоат ташкилотларининг бу масалага илмий, амалий ва инновацион жиҳатдан ёндашишлари зарурлигини кўрсатмоқда. Ўртага қўйилаётган оилавий ва ёшлар тарбиясига оид муаммоларнинг қуйидаги сабаблари бор: а) катталарнинг ўсмирларга шахс сифатида эмас, таъсир объекти сифатида қараши; б) ўсмирлар катталар ҳаракатида ўзларига мос бўлмаган ахлоқни кўриб, сезсалар улардан қоча бошлайдилар, натижада, улар ўзларини алдамайдиган, тенг кўрадиган одамни излашни бошлайдилар; в) жуда кўп болалар учун оила ҳаётини

мисолларда тажовузкор ахлоқ ва психик жароҳатни келтириб чиқарувчи вазиятларнинг асосий манбаи ҳисобланади; г) ўсмир ўзи яшаётган оилани дўстларининг оилалари билан солиштиради, ундан тўғри ёки нотўғри хулоса чиқаради; д) ўқитувчи ўсмирнинг оилавий шароитини ўрганмасдан муомала қилиши, унинг ахлоқи кескин ўзгаришига ҳам олиб қилиши мумкин; е) ўсмир ҳаётининг шароитлари (етимлик, жиноятчилик, жисмоний ва психик заифликлар). Жиноятчиликнинг катта фоизи ҳаёт шароити ўта оғир бўлган ўсмирлар, яъни жиноятчи, ота-она ёки ҳар иккови мунтазам спиртли ичимликлар истеъмол қилувчи, жанжалкаш оилаларнинг болалари, жисмоний ва психик оғишга мойил бўлганлар ҳисобига тўғри келади. Ўсмир ва ёшларни бундай ахлоқий ҳолатлардан ва турли-туман оғишлардан, иллатлардан, ёмон гуруҳларга кириб қолишдан сақлашда нажот кўприги бўлиб хизмат қиладиган ягона нарса - бу ўсмир қалбига йўл топа олиш, у билан дўстона, самимий, ўзаро ишонч асосига қуриладиган муносабат ўрната олишдир. Баъзи ота- оналар фарзанди яхши инсон бўлишини истаб, уларга эътиборни ҳаддан ташқари кучайтириб, ўзлари билмаган ҳолда унга барча шароитлар, компьютер, қиммат кийим-кечаклар, кези келса қўлига пул, уяли телефон олиб берадилар. Бундай тарбияни илмий тилда гиперопека, яъни (болаларни ҳаддан ташқари ҳомийлик қилиш, ота-оналарнинг болани кўпроқ эътибор билан ўраб олиш истагида намоён бўлади, ҳатто хавф бўлмаса ҳам уни ҳимоя қилиш, доимий равишда уларни ёнида ушлаб туриш, уни энг хавфсиз тарзда ҳаракат қилишга мажбурлаш) дейилади. Ота- она кўз қорачиғидай асраб, бутун куч-қуввати ва меҳрини бериб, оқибатда боқибегам, ландавур ёки текинхўрни, меҳр-шафқатсиз фарзандни тарбиялаши ҳам мумкин. Бундай ҳолатларнинг олдини олишда болани ёшлигиданок унинг хулқи шаклланишига, миллий-ахлоқий, маънавий-маданий қадриятлар, миллий истиқлол мафқураси асосида Ватанга содиқ қилиб тарбиялаш мақсадга мувофиқдир.

**Кутилаётган ижтимоий самара:** Маънавий қадриятлар амалий жиҳатдан кенг маънода инсоннинг барча ҳатти-ҳаракати, фаолияти, хулқи, одоби, инсонлар билан бўлган муносабатларида намоён бўлса, тор маънода одамларнинг фалсафий, диний, сиёсий, ахлоқий, ҳуқуқий қарашларида, тафаккури, дунёқарашларида намоён бўлади. Бугунги инновацион технологиялар ривожланиб бораётган даврда чинакам маънавиятли ва маърифатли одамгина инсон қадрини билиши, ўз миллий қадриятларини, миллий ўзлигини англаш, эркин ва озод жамиятда яшаш, мустақил давлатимизнинг жаҳон ҳамжамиятида ўзига муносиб ўрин эгаллаши учун фидойилик билан кураша олиши мумкин.



Маънавият инсон руҳиятини ифодалайди. Яъни, ўзлигини англаш, дид-фаросат, ақл-идрок, яхшиликни ёмонликдан, эзгуликни жаҳолатдан, адолатни разилликдан, огоҳликни лоқайдликдан, оқилликни жоҳилликдан ажрата билиш қобилиятини белгилайди. Маънавият чексиз борлиқнинг инсон руҳида ифодаланиши ҳамда комил инсоннинг онги, қалби, виждонидир. Миллатимизга хос бўлган ижтимоий жиҳатларда акс этган ватанпарварлик, эътиқодлилиқ каби жиҳатлар ҳақида гапирар эканмиз, “Ватанпарварлик” сўзига ҳам тўхталиб ўтамиз. Ватан (арабча “Ватан” - она юрт) инсонларнинг яшаб турган, уларнинг авлод-аждодлари туғилиб ўсган жойи, худуди, ижтимоий муҳити, мамлакати. “Ватанни севмоқ иймондандир” ...Ватанни севмоқ уни ардоқламоқ, қадрига етмоқ энг олий қадриятдир. Ватанпарварлик туйғуларини шакллантириш ва ёш авлодни шу руҳда тарбиялаш оила ва жамиятнинг муаммосидир. Ватан ичра қадриятларни, урф-одатларни, халқ анъаналарини қайта тиклаш, аждодлар ҳурматини жойига қўйиш, улар қолдирган маданий - маърифий, маънавий ёдгорликларни қадрлаш, тарихий обидаларни асраш каби эзгуликлар ва фазилатлар жон қадар ширин Ватан туйғусидир. Ватан муқаддасдир. Ундан қиммат, ундан азиз, ундан улуғ неъмат йўқдир. Шу бойликни қадрлаган, ундан чексиз фахрланган инсонгина оиласи, халқи ҳамда жамиятига меҳр-муҳаббатли бўлади. Инсон она учун қанчалиқ жонқидолик қилса, Ватан учун ҳам шунчалиқ қайғуради, уни ардоқлайди, севади ва қўриқлайди. **Миллатимизга хос бўлган жамоавий жиҳатлардан** оилага, дўстга содиқлик, меҳмондўстлик, аҳиллик, анъана ва урф-одатларни қадрлаш кабиларни қайд этиб, анъана ҳамда қадриятларга тўхтаб ўтишни лозим кўрдик. Ўзбек халқимизнинг миллий анъаналари, урф-одатлари, маросимлари жуда катта тарихий илдизга эга. Анъаналар, урф-одатлар, маросим ва байрамлар халқимизнинг, миллатимизнинг маънавияти, қадриятларининг ажралмас қисмидир. Улар халқимизнинг маънавий эҳтиёжлари замирида шу халқнинг орзу-ўйлари, истаклари, турмуш тарзи, ахлоқ нормаларини ўзида мужассам этади. Шунинг учун ҳам ҳар бир халқ, миллат, элат уларни кўз қорачиғидай авайлаб-асраши, тараққий эттириб, келгуси авлодларга маънавий қадрият сифатида етказиши лозим. Мустақиллик шарофати билан муҳим қадриятларимиз ҳисобланган “Наврўз”, “Меҳржон” байрамлари, Рамазон ва Қурбон ҳайитлари халққа қайтарилди. Улар билан боғлиқ расм-русум, урф-одатлар, удумларни давр талабига, инсонларнинг эҳтиёжига мослаштиришга ҳаракат қилинмоқда. Ўзбек халқи қадимдан тўй турларига бой халқ. Жумладан, суннат тўйи, никоҳ тўйи, соч тўйи, тиш тўйи, бешиқ тўйи, биринчи қадам тўйи, фотиҳа тўйи, мучал тўйи, эллиқ ва ундан ортиқ ёшларни нишонлаш тўйлари, ҳайит байрамлари каби қадриятлар одамларда ҳамжиҳатлик,

аҳиллик, меҳр-оқибат, хайр-саховат, иймон-эътиқод, меҳмондўстлик, инсонпарварлик, дўстлик, тежамкорлик каби фазилатларни тарбиялашга хизмат қилади. Шунингдек, қадимда тўй-базмларда ўйин-кулгу, шеърхонлик, миллий кураш, кўпқари, аскиябозлик қилинган. Анъаналар мазмунан ҳар бир миллатнинг, халқнинг ва элатнинг менталитетини оилавий хурсандчилик ёки мотам маросимлари, тантаналари тарзида ифода этади. Уларнинг барчаси мазмунан эзгуликка, инсонпарварликка, яхшиликка йўналтирилган маросимлар бўлиб, жамиятнинг ўзгариши ва давр талаби билан шаклан ва мазмунан ўзгариб боради. Баъзи анъаналар маънавий қадрият даражасига кўтарилади. Жумладан, Наврўз байрами Шарқ халқларининг миллий-маънавий қадриятларидан ҳисобланади.

Ҳозирги даврда миллий ва маънавий қадриятларнинг инсон ва жамият ҳаётидаги аҳамиятининг ошиб бориши, ўқувчи ёшлар камолотидаги ўрни барчамиз учун муҳим аҳамият касб этмоқда. Биз юқорида миллий-маънавий, маданий, таълим-тарбия, ахлоқ каби қадрият турлари, унинг моҳияти, инсон тафаккури, дунёқарашига таъсири, комил инсон тарбиясидаги ўрни каби масалаларни имкон қадар ёритишга ҳаракат қилдик. Шу ўринда ёшлар тарбиясини маънавий қадрият ва миллий истиклол мафқураси тамойиллари билан уйғунликда олиб бориш ҳам муҳим аҳамият касб этади. Миллий қадриятларимиз, халқимизнинг ўзига хос удумлари, унинг юксак ахлоқий фазилатлари маънавиятимиз ўзагидир. Барчамизга маълумки, бугунги кунда миллий қадриятларни тиклаш, такомиллаштириш, ўзлгимизни билиш, маънавий қадриятлар тизимини яратиш умуммиллий, долзарб вазифалардан биридир. Юксак маънавий қадриятларни миллий ғоя ва мафкура билан уйғунликда олиб боришда умуминсоний қадриятлар, таълим-тарбия, илм-фан ва одоб-ахлоқнинг ўрни ўзгачадир. Жумладан, ахлоқий тарбия ва ахлоқий дунёқараш ўз яқинлари, Ватани олдидаги бурч ва жавобгарлик ҳиссини шакллантиради.

Мафкура - муайян ижтимоий гуруҳ, ижтимоий қатлам, миллат, давлат халқ ва жамиятнинг эҳтиёжлари, мақсад- муддаолари, манфаатлари, орзу-интилишлари ҳамда уларни амалга ошириш тамойилларини ўзида мужассам этган ғоялар тизимидир. Унинг *фалсафий, дунёвий ва диний илдизлари* бор. Мафкуранинг мақсади - инсонларни муайян ғояга ишонтириш, бу йўлда маънавий-руҳий рағбатлантириш, инсонларни ғоявий тарбиялаш йўлларини уюштириш, инсонларда ғоявий иммунитетни шакллантиришга сафарбар этишдир. Миллий истиклол мафқураси Ўзбекистон Республикаси Конституцияси, миллий ва умуминсоний қадриятлар, демократия тамойилларига

асосланади. Халқнинг асрлар давомида шаклланган юксак маънавияти, анъана ва удумлари, улуғ бобокалонларимизнинг ўлмас меросидан озиқланади. Халқнинг ишонч ва эътиқоди акс этган адолат, ҳақиқат, эркинлик ва мустақиллик ғояларида юрт тинчлиги, Ватан равнақи ва халқ фаровонлигини таъминлаш назарда тутилади. Шунингдек, жамият аъзоларини, аҳолининг барча қатламларини Ўзбекистоннинг буюк келажагини яратишга сафарбар этади. Миллати, тили ва динидан қатъи назар, мамлакатнинг ҳар бир фуқароси, жумладан ўқувчи ёшлари қалбида она-Ватанга муҳаббат, мустақиллик ғояларига садоқат ва ўзаро ҳурмат туйғусини қарор топтиради. Инсон ҳеч бир замонда жиноятчи бўлиб туғилмайди ёки жиноятчи бўлиб қолмайди. Аввал жиноятга ундовчи омиллар, турткилар пайдо бўла бошлайди. Юриш-туриш, ҳатти-ҳаракат, гап-сўзда ўзгаришлар юз беради. Наҳотки, ана шундай кезларда ота-она ҳеч нарсани сезмаса, пайқамаса? Мана шу “сезмаслик”, “пайқамаслик”, биринчи Президентимиз ибораси билан айтганда, ичимиздаги хавфдир. У ташқи хавфдан кўра хатарлироқдир. Чунки одам душмани нима қилишини олдиндан сезиб, унга қарши ҳимоя воситалари билан қуролланиб туради. Ички хавфнинг эса қачон ва қайси томондан келиши ва натижада нималар юз беришини билиш амримаҳол. Энг ачинарлиси шуки, ички хавф ҳамиша ташқи хавфнинг қурбони бўлиб қолаверади. Унинг йўриғига юради, топшириғини бажаради, ўз ота-онаси ва юртига хиёнат қилади. Фарзанди тарбияси билан шуғулланмаган ота-она уни кўчага бериб қўяди. Шунинг учун ҳам тарбия оиладан бошланишини сира ҳам унитмаслигимиз керак. Ёшлар сиёсатининг устувор йўналишларидан бири – мустақиллик йилларида яратилган миллий давлатчилик асосларини мустаҳкамлаш ва бардавомлигини таъминлашда фаол иштирок этадиган авлодни вояга етказишдир. Зеро, жаҳон ва дунё ҳамжамиятида тобора муносиб ўрнини топаётган, барча соҳаларда барқарор тараққий этаётган янги Ўзбекистонимиз ўз истиқболини ҳозирги давр воқелигини тўғри англайдиган етук авлодлар тимсолида кўради. Дарҳақиқат, 1991 йилда қабул қилинган “Ўзбекистон Республикасида ёшларга оид давлат сиёсати асослари” тўғрисидаги қонунда, 2017 йил 15 сентябрда эълон қилинган “Ёшларга оид давлат сиёсати тўғриси”даги қонунда ва 2017 йил 5 июлдаги “Ёшларга оид давлат сиёсати самарадорлигини ошириш ва Ўзбекистон ёшлар иттифоқи фаолиятини қўллаб – қувватлаш тўғрисида”ги фармонда ҳам ана шу эзгу мақсадлар кўзланган бўлиб, унда ёшлар сиёсатининг асосий тамойиллари белгилаб берилган. Жумладан, Ўзбекистон ёшлар иттифоқи фаолиятининг еттинчи устувор йўналишида шундай дейилади: -“ёшларни, айниқса, улар уюлмаган қисмининг бўш вақтини мазмунли ташкил этиш мақсадида спорт ва жисмоний тарбия билан

шуғулланишга, ижодий тўғарақлар ва турли, жумладан, хорижий тилларни ўргатиш ўқув курсларига кенг жалб этиш ёшларга оид фаолиятни ташкил этишда ғоявий – услубий жиҳатдан кўмак беради” Бугунги кунда Ўзбекистон аҳолисининг 64 фоизини ёшлар ташкил этади. Меҳнатга жалб этилган аҳолининг асосий қисми ёшлардир. Келажакда бу кўрсаткичлар янада ортиб боради. Ёшларга хос бўлган ижтимоий хусусиятлар – уларнинг дунёқараши, билим доираси, мутахассислик даражаси, маънавияти, инсоний фазилатлари, жамиятнинг умумий даражаси ва тараққиётига ўз таъсирини ўтказиши, шубҳасиз. Маънавиятли халқнинг маданияти юксалган, истиқболи порлоқ бўлишига шак-шубҳа йўқ албатта. Бу жиҳатдан ўзбек халқи ўзининг бой мероси, миллий ва диний қадриятлари билан ҳар томонлама фахрланса арзийди. Мамлакатимизда маънавий ва жисмоний баркамол авлодни тарбиялаш борасида улкан ишлар амалга ошириляётган бўлса-да, улар бугунги кун давр талаблари даражасида кенг қамровли эмаслиги ҳам сир эмас. Шунинг учун ҳам бу борадаги саъйи-ҳаракатларни янада кучайтириш зарур. Ўз даврида биринчи Президентимиз И.А.Каримов таъкидлаб ўтганларидек: -Ўзбекистон XXI асрда жаҳон ҳамжамиятидан қандай ўрин эгаллаши ўсиб келаятган фарзандларимиз қандай инсонлар бўлиб вояга етишишига кўп жиҳатдан боғлиқдир. Шундай экан, айни пайтда бу соҳада йўл қўйилган ҳар қандай сусткашлик, камчилик келажакка берилган зарбага тенг, дейиш мумкин. Бунинг устига XXI аср вабосига айланган терроризмнинг турли-туман кўринишлари хуруж қилиб турган бир пайтда огоҳлик ва ҳушёрлик, қатъиятлилик ва мардлик талаб этилади. Сўнгги йилларда ғоявий душманларимиз ўзларининг манфур ниятларини амалга ошириш учун энг замонавий телекоммуникация ютуқларидан, жумладан, интернет тармоғидан ҳам фойдаланишга ҳаракат қилапти. Шу сабабли маънавиятимизда бўшлиқ ҳосил бўлишига асло йўл қўйиб бўлмайди. Биринчи Президентимиз Ислам Каримов – бундай бўшлиқ юзага келган тақдирда уни ёшларнинг илмга, касб-ҳунарга, соғлом турмуш тарзига, бунёдкорлик ишларига қизиқишлари билан ҳамоҳанг бўлган янгича ҳаёт мазмуни, янгича қадриятлар билан тўлдириш лозимлигини қайта-қайта уқтириб ўтган эдилар ўз даврида. Ёшларни, айниқса улар уюшмаган қисмининг турли қинғир йўлларга кириб кетишдан, номақбул оқимлар таъсирига тушиб қолишдан қандай ҳимоя қилиш мумкин? Болалик-инсон ҳаётининг ниҳоятда масъулиятли, гултожи даври. Боиси ана шу паллада йигит-қизларнинг ҳар жиҳатдан гармонал ривожланиши кузатилади. Халқаро тил билан айтганда, уларнинг қатъий мақоми юзага келади. Бу фаслда уларнинг қалби ва онги фаол ривожланиб, дунёқараши шакилланади, унинг босқичлари - оила, боғча, мактаб, маҳалла, темурбеклар ва президент мактабларида ривож

топади. Бирок, минг афсуслар бўлсинки- инсон ҳаётининг айнан шу босқичида, баъзан турли салбий одатларга, хусусан ичкиликбозлик ва гиёҳвандлик домига тушиб қолиш мумкинлиги ҳам аччиқ бўлса ҳақиқатдан йироқ эмас?! Хўш бундай ҳолатларда қандай чора-тадбирларни қўллаш мумкин. Энг аввало, таълим-тарбия асосларини пухта эгаллашлари, оммавий ахборот воситаларидан унумли фойдаланиш, фалсафий-ҳуқуқий қарашлар, адабиёт ва санъат аҳли ҳамда ижодкор зиёлилар фаолиятини ёшлар, болалар тарбиясига янада кўпроқ йўналтириш лозим. Шу ўринда Биринчи Президентимиз Ислоҳ Каримовнинг “Буюк давлат, буюк келажакимизга эришиш учун оқил, маърифатли, айна пайтда ўзининг ўтмиши, улуғ қадриятлари, миллати билан фахрланадиган инсонларни, келажакка ишонадиган инсонларни тарбиялашимиз керак”,-деган сўзларини эслаш кифоядир.

Ҳозирги ўтиш даврида юртимиз ёшлари-баркамол авлод сифатида қандай бўлиши керак? Ҳар бир ёш авлод аввало, чет тилини мукамал билиши, компьютер билан тиллашиб, Интернетдан фойдалана олиши, миллий ва диний қадриятларга амал қилиши шарт. Ватан тарихи, оила ва маҳалла талабларини мукамал билган йигит-қиз XXI аср талабига жавоб бера олади. Шу билан бирга у юрт қорига ярайдиган, доимо хушёр, зийрак, фаросатли, фасоҳатли инсон бўлиб етишига ишонамиз. Бундай ёшлар юртимиз тинчлигини, осойишталигини таъминлай оладиган инсонлар бўлиб, истиқболни белгилашади. Ватанимизнинг буюк келажакини қуриш, олдимизда ва бошқа барча турдаги меросни қамраб олади. Уларнинг айримлари умумжаҳон характерига эга бўлса, баъзилари шу миллат эътиборидаги мерос саналади. Тарихий мерос миллатнинг тафаккури, даҳоси, дунёқараши ва яратувчанлик салоҳиятининг маҳсулидир. Тарихий мерос миллат тараққиётининг турли тарихий босқичларида вужудга келиб, миллатнинг ўзи билан боғлиқ бўлган бойлик ҳисобланади. Миллий истиқлол мафкураси - ҳар бир ватандошимиз оиласи, жамият, эл-юрт олдидаги бурч ва маъсулиятини қай даражада адо этаётганлигини белгилайдиган асосий мезондир. Истиқлол мафкурасининг олдида қўйган мақсади - кишиларда мустақил дунёқараш ва эркин тафаккурни шакллантириш. Шу маънода бу мафкура ўзида халқимизнинг эзгу орзу-умидлари ва ҳаётий манфаатларини ифода этар экан, бу мақсадларга эришишнинг зарур шarti сифатида баркамол инсон шахсини шакллантиришга алоҳида эътибор беради. Маънавий баркамол кишиларгина умуммиллий манфаатлар уйғунлигини теран англайди. Ватан озод бўлмаса, шахс озод бўла олмаслигини тушунади ва бу йўлда фаол меҳнат қилади. Истиқлол мафкураси биринчи навбатда ёш авлоднинг ҳаётига янгича маъно ва мазмун бахш этишга, унда фаол ҳаётий позицияни шакллантиришга қаратилгандир.

Чунки ёшлар фақат миллий ғоя тимсолидагина мамлакат тараққиёти, юрт тинчлиги ва халқ фаровонлигини таъминлашнинг муҳим воситасини кўрадилар. Миллий истиқлол мафкураси ҳали турмушнинг аччиқ-чучугини татиб кўрмаган, ҳаётий тажрибага эга бўлмаган ана шу авлодни миллий манфаат ва тараққиётимизга ёт бўлган сохта ва бузғунчи ғоялар тажовузидан ҳимоя қилади, ўқувчиларда мафкуравий иммунитетни шакллантиради. Миллий истиқлол мафкураси ўз моҳиятига кўра халқимизнинг мақсад–муддаоларини ифодалайдиган, унинг ўтмиш ва келажагини бир-бири билан боғлайдиган, асрий орзу-истакларини амалга оширишга хизмат қиладиган ғоялар тизимидир.

Ўқувчи ёшларни ижтимоийлашувида бўлажак фуқароларимизни ватанпарварлик ҳис-туйғуларини миллий маънавий кадриятлар руҳида тарбиялаш, ўтмиш алломаларимизнинг ўгити, доно сўзлари, фикрларини кадрлаш, ўрганиш, ҳаётда қўллаш ўқувчи ёшларнинг фикрлаш қобилиятларини ва дунёқарашларини кенгайтиради. Бугунги ўқувчи ёшларимиз – келажагимиз пойдевори. Шундай экан, уларни ҳар томонлама етук, комил, ватанпарвар, юрт тинчлиги ва равнақи йўлида фидокор бўладиган фарзандлар қилиб тарбиялаш зарур. Президентимиз Шавкат Миромонович Мирзиёевнинг “Бизни ҳамиша ўйлантириб келадиган яна бир муҳим масала - бу ёшларимизнинг одоб-ахлоқи, юриш-туриши, бир сўз билан айтганда, дунёқараши билан боғлиқ. Бугун замон шиддат билан ўзгаряпти. Бу ўзгаришларни ҳаммадан ҳам кўпроқ ҳис этадиган ким - ёшлар. Майли, ёшлар ўз даврининг талаблари билан уйғун бўлсин. Лекин айна пайтда ўзлигини ҳам унутмасин. Биз киммиз, қандай улуғ зотларнинг авлодимиз, деган даъват уларнинг қалбида доимо акс-садо бериб, ўзлигига содиқ қолишга ундаб турсин. Бунга турган катта-катта муаммоларни ечиш, мустақиллигимизни ҳимоя қилиш, ҳаётда миллий ва умумбашарий кадриятлар уйғунлиги тамойилига амал қилиб яшашдек муҳим вазифаларни ёш авлодимиз ўзининг муқаддас бурчи деб билаётгани, айниқса , эътиборга сазовордир. Баркамол авлодни тарбиялашдек порлоқ ниятимиз учун бизда маънавий асос бор. Ҳар бир миллатнинг миллий мероси ўша миллат томонидан яратилган моддий-маънавий ва бошқа турдаги меросни қамраб олади. Уларнинг айримлари умумжаҳон характериға эга бўлса, баъзилари шу миллат эътиборидаги мерос саналади. Миллий мерос миллатнинг тафаккури, даҳоси, дунёқараши, яратувчанлик салоҳиятининг маҳсулидир. Миллий мерос миллат тараққиётининг турли тарихий босқичларида вужудга келиб, миллатнинг бевосита ўзи билан боғлиқ бўлган бойлик ҳисобланади. Хўш унга ниманинг ҳисобидан эришамиз? Тарбия, тарбия ва фақат тарбия ҳисобидан” - деган фикрлари барчамизга дастуриламал бўлиши зарур. Таъкидлаш жоизки, миллий кадриятлар қатори,

миллий истиқлол мафқурасининг вазифаси мустақил тафаккур соҳиби, маънавий баркамол, комил инсонни шакллантириш, жамиятни ёт ва бегона ғоялар таъсиридан ҳимоя қилиш, кўп миллатли Ўзбекистонликлар онгида ватанпарварлик, инсонпарварлик, қонунни ҳурмат қилиш, эл-юрт учун фидойилик, иймон-эътиқод, ҳалоллик каби юксак маънавий сифатларни шакллантириш, миллатимиз шаънини юксакларга кўтаришдан иборатдир.

**Хулоса қилиб айтадиган бўлсак**, миллат, давлат ёки жамиятнинг миллий тараққиёти унинг замирида яратилган моддий ва маънавий кадриятларнинг уйғунлиги билан белгиланади. Яъни жамият тараққиётини ўзида мужассам этган миллий ғоя билан боғлиқлигини акс этириши лозим:

Биринчидан, миллий маънавий кадриятлар - ижобий ахлоқий сифатларни такомиллаштириш, давлат ва миллат ривожига тўғаноқ бўладиган салбий иллатларни бартараф этиш омили ҳисобланиши керак;

Иккинчидан, маънавий кадриятлар ва миллий ғоя - жамият ҳаётининг жуда мураккаб ва серқирра, ўзаро узвий алоқадорликда бўлган соҳасилиги;

Учунчидан, шахс ҳаётида, умуман ижтимоий тараққиётнинг маълум даврларида моддий ва маънавий кадриятлар энг долзарб масала бўлиб, келажакда ҳал қилувчи восита ҳисоблангандир;

Тўртинчидан, миллий ва маънавий кадриятлар халқнинг кундалик ҳаёти ва турмуш тарзида ўзига хос мезон вазифасини ўтайди;

Бешинчидан, халқимизнинг асрлардан-асрларга мерос тарзида келаятган моддий ва маънавий кадриятлар узок тарихий жараёнда шаклланган она юртга эҳтиром, авлодлар хотирасига садоқат, катталарга ҳурмат, кичикларга иззат, ҳаё, ибод, андиша каби хусусиятларнинг устуворлигини ўзида мужассамлаштиради.

Умуман, миллий маънавий кадриятлар ижтимоий ҳаётнинг ва маънавий борлиғимизнинг муҳим ва серқирра соҳаси бўлиб, инсон ва жамият камолотида муҳим аҳамият касб этади.

Халқимизни қарамлик кишанларидан озод қилган истиқлол қанчалик улкан бахт эканини – бахтсизлик гирдобидан озод бўлиб келганлар теранроқ ҳис этадилар. Топталган кадриятларимиз, дину диёнатимиз не-не машаққатлар эвазига тикланди. Ўзлигимизни англаш қанчалик бахт эканини билдик. Келгусида бундан-да фаровонроқ яшашимиз, дунёда ҳеч кимдан кам эмаслигимиз ва ҳеч кимдан кам бўлмаслигимизни ҳис этганинг сари қалбинг ифтихор туйғуси ила жўш уради. Ҳаётимизнинг навбатдаги поғонаси – фарзандларимиз ва набираларимизнинг бахту - иқболини кўриш билан боғлиқдир. Фарзандларига озод ва обод Ватан, эркин ва фаровон ҳаётни инъом этаётган катта авлоднинг дилдаги ва тилдаги тилаги шу: ўғил-қизларимиз биздан кўра кучлироқ, билимлироқ, доно бўлсинлар ва албатта бахтли-саодатли яшасинлар.

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## ОСОБЕННОСТИ РАЗВИТИЯ СВЯЗНОЙ РЕЧИ У ДЕТЕЙ С ИНТЕЛЛЕКТУАЛЬНЫМИ НАРУШЕНИЯМИ

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***Аннотация.** В данной статье рассматривается вопрос об особенностях развития связной речи у детей с интеллектуальными нарушениями. Овладение учениками связной речью в начальный школьный период способствует их успешному обучению по всем предметам общеобразовательного цикла, поскольку развитая речь – одно из важнейших условий хорошей успеваемости.*

***Ключевые слова:** связная речь, дети с нарушением интеллекта, инновационные технологии, педагогика.*

Закон Республики Узбекистан, принятый от 23.09.2020 г. № ЗРУ-637, гласит: «Дети с физическими, умственными, сенсорными (чувственными) или психическими нарушениями, а также дети, нуждающиеся в длительном лечении, получают образование в государственных специализированных образовательных учреждениях, общих средних и средних специальных образовательных организациях в инклюзивной форме или в индивидуальном порядке в домашних условиях» [1].

Образование детей с особыми потребностями является одной из основных задач для страны. Это необходимое условие создания действительно инклюзивного общества, где каждый сможет чувствовать причастность и востребованность своих действий. Мы обязаны дать возможность каждому ребенку, независимо от его потребностей и других обстоятельств, полностью реализовать свой потенциал, приносить пользу обществу и стать полноценным его членом.

В системе народного образования Республики Узбекистан реализуется программа развития инклюзивного образования: более чем в 300 школах созданы условия для обучения детей с ограниченными возможностями.

Действительно, в целях перехода на качественно новый уровень в Республике уделяется особое внимание популяризацию обучения и воспитания детей с умственными, сенсорными (чувственными) или психическими нарушениями.

Одной из основных характеристик общего развития ребёнка является формирование и развитие речи. Дети, которые нормально развиваются, обладают хорошими способностями к овладению речью. Речь является важным средством связи между ребёнком и окружающим миром, самой совершенной формой общения, которая присуща только человеку. Речь – это особая высшая психическая функция, которая обеспечивается головным мозгом, любые отклонения в развитии речи необходимо вовремя заметить.

Обучение ребенка связной устной речи начинается в младший школьный период и входит при этом в общие задачи воспитания и развития. В школе развитие речи становится самостоятельной задачей и связывается с теоретическими сведениями о языке как системе и функционировании ее в речи. При этом закладываются прочные и осознанные основы речевого поведения и культуры ребенка. Овладение учениками связной речью в начальный школьный период способствует их успешному обучению по всем предметам общеобразовательного цикла, поскольку развитая речь – одно из важнейших условий хорошей успеваемости. Еще одним необходимым условием эффективной работы по развитию устной речи является согласованность в этой работе между дошкольным звеном, начальной и средней школой. Современный подход к проблеме развития речи основывается на необходимости единой лингвометодической базы в этой работе на всех этапах обучения и воспитания детей.

В формировании связной речи отчетливо устанавливается тесная связь речевого и умственного развития детей, развития их мышления, восприятия, наблюдательности. Для того, чтобы хорошо, связно рассказывать о чем-нибудь, надо ясно представлять себе объект рассказа, уметь анализировать, отбирать основные факты, устанавливать причинно-следственные отношения между предметами и явлениями и т.д. Помимо этого, для достижения связности речи необходимо не только отобрать содержание, которое должно быть передано в речи, но и использовать специальные языковые средства.

Дети с менее тяжелой формой нарушения владеют элементами речи, но запас слов у них мал, а произношение неправильно. Дети с относительно легкой формой, которые составляют основную массу учащихся вспомогательных школ, имеют значительно более легкую степень умственного недоразвития и

незначительные отклонения в физическом развитии. Дети, с данным нарушением в интеллекте, владеют речью, двигательные нарушения у них настолько компенсируются, что не мешают в дальнейшем включаться в трудовую деятельность. Особенность проявляется в недоразвитии мышления, однако оно выражено у них в меньшей степени, чем у детей с менее тяжелой формой.

У ребенка с нарушением интеллекта к семи годам, ко времени поступления в школу практика речевого общения занимает маленький отрезок времени – около 3-4 лет. Все эти годы темп развития его речи замедлен, а речевая активность недостаточная. У ребёнка оказывается слабо развито разговорно-бытовая речь, что затрудняет его общение с взрослыми людьми. Ребёнок редко принимает участие в беседах, на задаваемые вопросы отвечает односложно и зачастую неправильно. При объяснении причин, которые обуславливают замедленное речевое развитие у детей с нарушением интеллекта, следует понимать, что, прежде всего, для них характерно общее недоразвитие всей психики в целом, приводящее к значительным изменениям и задержкам в умственном развитии.

Речь детей с умственной отсталостью зачастую монотонна, маловыразительна, лишена сложных и тонких эмоциональных оттенков, в одних случаях бывает замедленной, в других – ускоренной. У детей с интеллектуальными нарушениями наблюдается бедность словарного запаса, неточность употребления слов, трудности актуализации словаря, пассивный словарь преобладает над активным, происходит нарушение процесса организации семантических полей.

Рассмотрим особенности речевого развития у детей с нарушением интеллекта более подробно. Среди детей с нарушением интеллекта наблюдается 40-60% нарушений фонетической стороны речи. У таких детей, как и у детей в норме, чаще нарушаются артикуляторно-сложные звуки – это свистящие, шипящие, [р] и [л]. Наряду с искаженным произношением звуков отмечается большое количество. Замены зачастую вариативны, т.е. один и тот же звук ребёнок с нарушением интеллекта в одном случае может произнести правильно, а в другом исказить или полностью пропустить.

У детей с синдромом Дауна наблюдается замедленный темп речи, иногда встречается скандированная речь. Также часто у детей с нарушением интеллекта наблюдаются голосовые расстройства. Несформированность грамматической стороны речи у детей с нарушениями проявляется в аграмматизме, в искажении

употребления падежей, смешения предлогов, неправильные согласования имен существительных с прилагательными и числительными.

Таким образом, затруднения в речевом развитии ребёнка напрямую связано с нарушениями интеллекта при использовании речи, как вербальной функции и регулятора поведения. Это объясняется тем, что детям с нарушением интеллектуального развития не всегда посильно выполнение речевых задач, особенно если они имеют несколько заданий.

Констатируя вышеизложенное, нами отмечается тот факт, что в настоящее время в методике преподавания вопрос обучения детей с нарушением интеллекта связной диалогической речи стоит остро, что в свою очередь требует применения современных педагогических и инновационных технологий, одной из которых является IoT- технология.

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## KORXONADA LOGISTIKANI RIVOJLANTIRISHDA YO‘L HARAKATINI TASHKIL ETISHNING ILMIY AHAMIYATI

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**Kirish.** Hozirda ko‘plab rivojlangan va jahon iqtisodiyotida yetakchi o‘rin tutadigan mamlakatlar tajribasi shuni so‘zsiz isbotlab beryaptiki, raqobatdoshlikka erishish va dunè bozorlariga chiqish, birinchi navbatda, iqtisodiyotni izchil isloh etish, tarkibiy jihatdan o‘zgartirish va diversifikatsiya qilishni chuqurlashtirish, yuqori texnologiyalarga asoslangan yangi korxonalar va ishlab chiqarish tarmoqlarining jadal rivojlanishini ta‘minlash, faoliyat ko‘rsatadigan quvvatlarni modernizatsiya qilish va texnik yangilash jarayonlarini tezlashtirish hisobidan amalga oshirilishi mumkin.

Mamlakatimizda hozirgi kunda transport-kommunikatsiyalari tizimidan samarali foydalanish uslublarining o‘zgarishi, multimodal va intermodal tashuvlarining rivojlanishi yangi infratuzilmalar obyektlarini barpo etishni, ya‘ni tashish terminallarini shakllantirishni taqozo etadi. Halqaro miqèsida ushbu multimodal tashish terminallari logistik markazlarga aylanib, halqaro tashuv va logistikaning barcha funksiyalarini o‘zlariga qamrab oladi.

Mamlakatimizda ikkita logistik markaz - Navoiy va Angren shaharlarida joylashgan. Ularda yuk va yo‘lovchilarni tashish hajmlari tobora oshib bormoqda. Navoiy viloyatida ochilgan erkin iqtisodiy zonada faoliyat ko‘rsatadigan logistik markaz orqali tashuv jarayoni rivojlanib bormoqda. Navoiy shahridagi Xalqaro intermodal logistika markazining tashkil etilishi undan nafaqat Janubiy - Sharqiy Osiè va Yevropadan o‘tadigan qit‘alararo transport-ekspeditsiya tarmog‘i sifatida foydalanish imkonini beradi. Ayni paytda u Navoiy viloyati va qo‘shni hududlarga yangi, zamonaviy yuksak texnologiyalarga asoslangan ishlab chiqarish korxonalarini tashkil etish uchun zaruriy sharoitlar yaratilmoqda. Dunè savdosining jadal o‘shishida logistika rolining kuchayishi xalqaro masshtabda amalga oshiriladigan operatsiyalarning integrallashuvi g‘oyasini amalga oshirishga mo‘ljallangan global

logistikaga alohida e'tibor berishga olib keldi. O'zbekistonda tashqi iqtisodiy va boshqa xalqaro aloqalar, shu jumladan yuklar (yo'lovchilar)ni xalqaro tashishlar yuqori suratlar bilan rivojlanmoqda. Global logistikada transport-logistika tizimini boshqarishni modernizatsiyalash milliy iqtisodiyatni internatsionallashtirishning muhim yo'nallishlaridan biri bo'lib hisoblanadi. O'zbekistonda avtomobillarda tashishlarni rivojlantirish avtomobil magistrallari va yo'l infratuzilmasining sifat darajasini pasayishi, xalqaro tashishlarda qatnashuvchi mamlakatlar o'rtasida transport va bojxona tartib qoidalari sohasida huquqiy me'orlar bo'yicha kelishmovchiliklar hamda xalqaro avtomobil yo'llarini rivojlantirishdagi to'siqlarni bartaraf qilish bo'yicha yetarli darajada bo'lmagan muvofiqlashtirish harakatlariga yo'l qo'ymaydi.

Transport logistika xizmatlari bozorini samarali boshqarish muammolari muammolari qator mutaxassislar tomonidan, ayniqsa bozor munosabatlari rivojlangan mamlakatlarda tadqiq qilingan. Ammo bu sohadagi ayrim masalalar bahsli bo'lib o'z yechimlarini topishni taqozo etmoqda. Ushbu fikr mulohazalar mazkur dissertatsiya mavzusini tanlashga asos bo'ldi. Shuningdek "2022—2026 yillarga mo'ljallangan yangi O'zbekistonning taraqqiyot strategiyasi" da transport sohasiga bog'liq bo'lgan.

Shuni ta'kidlash lozimki, transport vositalarini manyovrchanligini oshirish avtomobillarni yo'llarda harakatlanishini yengillashtiradi va harakatlanishda qulayliklarni yaratadi. Tadqiqot obekti sifatida Shurtan gaz kimyo majmuasi MCHJ tanlab olindi. Tadqiqot predmeti transport logistika xizmatlari bozorini samarali boshqarish tizimini rivojlantirish hisoblanadi.

Tadqiqot maqsadlari bo'lib transport logistika xizmatlari bozorini samarali boshqarish tizimini rivojlantirish uslubiini ishlab chiqish hisoblanadi.

Mavzu bo'yicha qisqacha adabiyotlar tahlili. Transport logistika xizmatlari bozorini samarali boshqarish muammolari dunoning qator mamlakatlarida, ayniqsa bozor munosabatlari shakllangan mamlakatlarda tadqiq qilingan. G'arb mamlakatlarining ilmiy manbalarida J. Gelbrejt, V.Gerami, R.Xeyns va boshqa xorij mutaxassislarining ishlari chop etilgan. Shular bilan bir qatorda MDH mamlakatlarining ishlarida ham o'z aksini topgan. Bularning qatorida L.B.Mirotin, V.A. Topalidi, K. M. Sidiknazarov, M.A. Ikramov, Sh.Bo'tayev, M.Jo'rayev va boshqalarning ishlarini ta'kidlash lozimdir.

Ammo boshqaruv qarorlarini qabul qilishda transport logistika xizmatlari bozorini samarali boshqarish hisobiga yuklarni tashishda avtomobil transporti faoliyatini optimallashtirishni qator masalalarini tadqiq qilish va ularni

yechimini topish hozirgi vaqtda ham dolzarbdir. Birinchi navbatda bu yuklarni tashishni boshqarishning transport-logistika tizimini kengaytirish, takomillashtirish va uni baholashning ilmiy uslubiy asoslarini yaratish hamda ichki va tashqi tashishlarda transport faoliyatini optimalashtirish, transport bozori faoliyatini baholash, logistik tizim sharoitlarida avtotransportda yuklarni tashishning optimal hajmini aniqlash, avtotransportda yuklarni tashish tizimida transport logistikasining iqtisodiy samaradorligini baholash uslubi va uslubiëtni ishlab chiqish masalalariga taalluqlidir.

Tadqiqotning nazariy va amaliy ahamiyati. Ilmiy tadqiqot davomida O‘zbekiston Respublikasi Prezidenti asarlarida oldinga surilgan g‘oyalar, Prezidentning farmonlari, qarorlari, xorijiy va mamlakatimiz iqtisodchi olimlarining tadqiqotlari va me‘ëriy hujjatlar xizmat qiladi. Muallif tomonidan olingan natijalar, ishlab chiqilgan nazariy qoidalar va ilmiy jihatdan asoslangan amaliy xulosa va takliflar Shurtan gaz kimyo kmpleksi MCHJ faoliyatida tadbiiq etish uchun tavsiya etilishi nazarda tutiladi.

Ilmiy yangilik quyidagilar hisoblanadi.

-transport xizmatlari bozorini samarali boshqarish logistik yondashuvlarni tasniflash.

-transport logistika xizmatlarini maqsadli segmentlarini tanlashning uslublarini ishlab chiqish.

-yuklarni tashishda yangi axborot-boshqaruv tizimlarini yaratishning uslubiëtni ishlab chiqish.

-yuk tashishlarda avtomobil transportini boshqarishning transport logistik tizimini iqtisodiy baholash uslubiëtni ishlab chiqish.

-yuk tashishlarda avtomobil transportini boshqarishning transport logistik tizimini iqtisodiy baholash uslubiëtni ishlab chiqish.

Oxirgi yillarda yangi logistik yondashuv ya‘ni integrallashgan yondashuv shakllandi va keng qo‘llanilmoqda. Bu yondashuv aslida marketing usulini yanada takomillashtirilgan varianti bo‘lib, u hozirgi davrda biznesni rivojlantirishni yangi shart-sharoiti va omillaridan kelib chiqadi.

Integrallashgan logistikani qo‘llanishiga misol sifatida chet elda foydalanilaët-gan JIT (just in time – aniq o‘z muddatida), TQM (Total Quality Management – sifatli kompleks boshqarish), jismoniy taqsimlashni integralashgan usuli kabi tizimlarni ko‘rsatish mumkin.

Integrallashtirish yondashuvi asosida ISCLS tizimi, ya‘ni logistik tizim, uning zvenolari, makro va mikro darajalarda xizmat ko‘rsatuvchi



tizim yaratildi. U material va axborot oqimlarini telekommunikatsiya tarmog'ini onlayn rejimi ërdamida logistik tizim doirasida boshqarishga imkon beradi.

Hozirgi paytda xizmat ko'rsatish tushunchasi material obyektlarni ëki tabiat mahsulotlarini shaklini o'zgartirish bilan bog'liq bo'lmagan barcha mehnat turlarini o'z ichiga oladi. Bunday mehnat natijasida alohida iste'mol qiymati yaratiladi va uni miqdori mehnatning ijtimoiy foydali faoliyati bilan o'lchanadi.

Oxirgi paytlarda transport xizmatini amalga oshirishda bajarilaëtgan logistik boshqaruv masalalarining ahamiyati ortib bormoqda, ko'plab korxonalar va tashkilotlar xizmat ko'rsatish sohasiga kirib kelmoqdalar. Ko'plab logistik xizmat ko'rsatuvchi vositachi tashkilotlar faoliyat ko'rsatmoqda. Ayrim hollarda bunday vositachi tashkilotlar ko'rsatilaëtgan xizmat narxi mahsulot ishlab chiqarish narxidan ham yuqori bo'lishi mumkin.

So'ngi yillarda logistika borgan sari ko'proq servis oqimlari bilan shug'ullanmoqda, chunki ko'pgina firma va korxonalar nafaqat mahsulot ishlab chiqaradi, balki kerakli xizmat ko'rsatish bilan ham shug'ullanmoqdalar.

Transport xizmati ko'rsatishda logistik yondashuv nihoyatda muhimdir. Transport xizmatiga bo'lgan ehtiyoj va bozordagi so'rov regionda transport tarmog'ini rivojlanganligiga, turli transport vositalarini mavjudligi va ularni faoliyat ko'rsatishini o'zaro muvofiqlashtirilganligiga, ko'rsatilaëtgan transport xizmati turlari va sifatiga, ularni narx-navosi va boshqa ko'plab faktorlarga bog'liqdir. Bozor iqtisodiyatini rivojlanishi va keng infrastruktura tarmog'ini shakllanishi umumiy iqtisodiy tarmoqlar ichida albatta transport xizmatini ulushini oshishiga olib keladi.

Logistik tizimda ishlab chiqarish xom-ash'ë ta'minlash kanallari faoliyatini ishga tushirish muammolarini hal etishni taqozo etadi. Korxonalar va tashkilotlar tayyor mahsulotni yetkazish kanallarini ish faoliyatida transport turini tanlash, tashish usularini ishlab chiqish, transport vositalari tiplarini aniqlash, yuklarni tashishga tayyorlash kabi qator transport masalalarini hal qilishi lozim bo'ladi. Shunday qilib iste'molchilarga transport xizmati ko'rsatish quyidagi ishlar bajarilishini taqozo etadi:

Transport xizmatiga bo'lgan talablarni o'rganish va tahlil etish shuni ko'rsatmoqdaki, iste'molchilarni transport xizmati sifatiga bo'lgan asosiy talabi – bu yuklarni o'z vaqtida jo'natish va yetkazib berishdir. Bunday

talabni asosida iste'molchilarni yuk zahiralari va ularni saqlab turishga ketadigan harajatlarni kamaytirish maqsadi etadi. Chunki hozirgi paytda zahiralarni ushlab turish harajatlari mahsulot narxidan 20-25 foizgacha bo'lgan harajatni talab etmoqda.

Transport tizimining amaldagi kamchiliklari – bu yukni o'z muddatida jo'natish va yetkazib berish kafolatlanmaganligi, tashishga berilgan buyurtmani bajarishni orqaga surish e'ki rad javobini berish hollarining mavjudligidir. Shu sababdan tashuvchilar avvalambor tashila'etgan yuk va tshiladigan masofa hamda tashish shart sharoitlarini hisobga olgan holda transport turini to'g'ri tanlashi maqsadga muvofiqdir.

Logistik xizmat ko'rsatish jarayonini eng muhim masalasi – bu ko'rsatilgan xizmatlar uchun iste'molchilardan undiriladigan kompensatsiya narxini aniqlashdir.

Yuklarni tashish jarayoniga ketgan harajatlarni aniqlashdan ko'ra logistik xizmat harajatlarini aniqlash ancha murakkabdir, chunki bunday xizmatni bahosi iste'molchi tomonidan bor tizimni (tashish va logistik xizmat ko'rsatish) samaradorligini baholashi va tan olish bilan bog'liqdir. Xizmat ko'rsatish darajasi harajat va tushumlar hamda olinadigan foyda qiymatlarini solishtirish asosida aniqlanadi.

Agar xizmat ko'rsatishni rejalashtirila'etgan darajasi harajat va tushumlarni optimal nisbatini ta'minlayolsa, unda bunday xizmat korxonaga uchun samarali hisoblanishi mumkin. Bunday protsedura xizmat ko'rsatish darajasini oshirilishi tufayli ko'paya'etgan harajatlarni xizmat turi va sifatini kamayishi natijasida yo'qotila'etgan tushum bilan solishtirish asosida bajariladi. Bunday solishtirish natijasida xizmat ko'rsatishning optimal darajasini aniqlanadi.

Transport vositalarini ish faoliyati iste'molchilar ehtiyojini qondirishga qaratilgan bo'lish kerak. Iste'molchilarga esa minimal muddatlarda yukni yetkazib berish imkoniyati, yukni sifatini 100 foiz saqlash, yukni qabul qilish va topshirishdagi qulayliklar, tariflar to'g'risida, tashish sharoiti va yukni yetib kelgan joyi to'g'risidagi doimiy ma'lumotlar berib turish lozim bo'ladi.

Transport xizmatini doimo yaxshilab borish uchun transport xizmati borasida olingan axborotlar to'plangan tajribalar va iste'molchilarni fikr-mulohazalari asosida jiddiy o'rganilishi va tahlil etilishi lozim. Transport xizmatini namunaligacha yo'lga qo'yish uchun strategik yechimlardan foydalanish ham katta samara beradi.

Ma'lumki, yuk tashish tannarxi transport jarayonini amalga oshirish bilan bog'liq bo'lgan kapital mablag'larni hisobga olmaydi. Shu tufayli iqtisodiy hududda yuk tashishning istiqboldagi rivojlantirish variantlarini belgilashda, bu variantlarga xos ekspluatatsion xarajatlar va kapital mablag'lar darajalarini hisobga olish kerak bo'ladi. Bunday kompleks mezon sifatida keltirilgan xarajatlar hisoblanadi.

Real yuk tashish sharoitlarida yuqorida ko'rsatilgan xarajatlardan ayrimlari hisobga olinmasligi mumkin. Masalan, tashish jarayonida bo'ladigan yuklarning bahosini bu mahsulot yetkazilgandan keyin bevosita ishlab chiqarishda ishlatiladigan hollardagina hisobga olish lozim.

Shunday qilib, umumiy holda ma'lum region miqèsida iste'molchilarning yuk tashishga bo'lgan ehtiyojlarini vaqt mobaynida bir tekis taqsimlangan deb bo'lmaydi, ularni tahlil etish va transport jarayonini boshqarishda hisobga olish iqtisodiy jihatdan katta samaradorlik beradigan muhim omildir.

Yuk tashish xajmlarini ortib borish va turli transport vositalarining yo'l tarmoqlarini kengayishi va zichlashishi, shaxarlarni kattalashuvi va ulardagi material oqimlarni hududni mahsulot va tovarlar jo'natuvchi manzillari bilan iste'molchi tashkilotlarni obyektlarini o'zaro bog'laydigan eng qisqa uzunlikdagi kam xarajatchi yo'l (tarmoq) sxemalarini aniqlash masalasini kun tartibiga qo'yimoqda. Chunki eng qisqa yo'l tarmog'i bo'yicha yetkazib beriladigan material oqim eng kam xarajatchi hisoblanadi va uni samaradorligini oshirishda eng muhim omillardan hisoblanadi.

Hozirgi sharoitda transport korxonalarini o'zlarning tijorat va ishlab chiqarish faoliyatlarini qayta ko'rib chiqishlari va asosiy diqqat – e'tiborni iste'molchilarning ehtiyojlari va talablarini o'rganish, tahlil etish va qondirishga qaratmog'i lozim.

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## DIGITALIZATION OF INDEPENDENT EDUCATION IN HIGHER EDUCATION

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**Abstract.** *The article contains information about the reforms implemented in the higher education system of Uzbekistan and the prospects of digitalization of higher education. The implementation of the credit-module system in the educational process of higher education and the role of independent education in it, the importance and necessity of using telecommunications educational materials based on digital technologies in the organization of independent education are based. The content of telecommunication educational projects and the methodology and stages of effective organization of telecommunication projects in the educational process of higher education are presented.*

**Key words:** *technology, independent education, project method, telecommunications, educational projects, integration.*

### INTRODUCTION

Systematic and consistent reforms in the field of education in our country are showing their results, our universities have achieved academic and financial independence, have the ability to define their goals and tasks, adapt to the requirements of the times, and train highly qualified personnel for today and the future [1]. One of the main tasks in the development of higher education and taking a worthy place in the international education system is the extensive development of the process of digitalization of the education system. Digitization has created new opportunities for learning and management, facilitating data collection and analysis, collaboration and communication. The benefits of digitization include increased productivity, increased student engagement, personalized learning, and the use of new teaching methods. In addition, digitization facilitates the management of universities, curricula, faculty, staff, and resources [1].

## METHODS AND MATERIALS

Pedagogical observation, comparative analysis, generalization, pedagogical experiment-test, mathematical-statistical analysis, mental cards, expert survey of foresight, development of scenarios, future box, and Delphi methods were used in the research process.

## RESEARCH RESULTS AND DISCUSSIONS

The introduction of the credit-module system in the higher education system of Uzbekistan from the 2019-2020 academic year necessitated the radical redevelopment of the curricula of educational areas and master's specialties. In the current credit-module system, 50-60% of the total educational load allocated to the major subjects in the curriculum of bachelor's education courses, and about 60-70% in the master's specializations are allocated to independent education. However, independent education is mainly carried out by preparing abstracts on the topic or giving tasks to summarize the topic. Writing an annotation or review on the topic can be added to this, and this will at least guide students to independent creative thinking. These traditional methods are outdated and do not work well in the innovative educational environment. Therefore, the author recommends the organization of independent education in science using the method of design [2] on the basis of digital technologies, that is, "Telecommunication educational projects" [3].

Telecommunication projects appeared in developed foreign countries in the 80s of the last century and began to be used as a convenient and fast way of communication in the fields of science and education [4]. International experience shows that compared to simple correspondence-based telecommunication projects, specially organized and targeted projects, students' cooperation on the Internet lead to a great pedagogical result. Educational telecommunication projects are the main form of organizing joint educational activities of students of different cities, regions and countries in the network [5,6].

Telecommunication training projects are not televised training. Educational telecommunication projects are considered digital technologies organized on the basis of computers through Internet networks and occupy an important place in the innovative educational environment. Information exchange in educational telecommunication projects is carried out in written form. This allows students to think well about their thoughts, edit them, and plays a positive role in their cognitive activity and the formation of a culture of communication [7].

Telecommunication projects can be organized within the framework of a higher education institution, together with higher education institutions within the state, or in the form of an international project with partner foreign higher education institutions

[8]. This project is also of social importance, and has its place not only in education, but also in the field of education, that is, students working in the project are able to understand each other, respect the opinions of others, express their opinions freely. they learn to communicate and solve problems together. In particular, it is necessary to take into account the national and ethnic, socio-cultural values and respect them when the projects are organized with the partner higher educational institutions of the higher education system of Uzbekistan.

The application of this project to the educational process, firstly, increases the quality of independent education, and secondly, the project creates conditions for entering the field of international education and working in cooperation with foreign students. Problem solving in telecommunication educational projects requires integrated knowledge. Especially in international projects, it requires a deeper integration of knowledge, not only the field of scientific knowledge related to the researched problem, but also the characteristics of the partner's national culture, his knowledge and understanding of the world, and his views.

This constitutes a culture of dialogue. Currently, the professor of the University of Illinois, Ohio, USA, V. Heathergood, has been leading the network project for many years, and young people from about 40 countries participate in it. International projects based on the Kidlink program and the I Earm program are working on the Internet [9]. The main obstacle for students to participate in international telecommunications educational projects is the level of knowledge of a foreign language.

Telecommunication educational projects appeared in the 80s of the last century and are used as a convenient and fast way of communication in the fields of science and education. International experience shows that compared to simple correspondence-based telecommunication projects, specially organized and targeted projects, students' cooperation on the Internet lead to a great pedagogical result. Educational telecommunication projects are the main form of organizing joint educational activities of students from different cities, regions and countries. Such international projects include "Shakespeare Seminars" which have been organized for more than ten years by Professor V. Heathergood of the University of Illinois at Ohio State through the IEARN (<http://www.iearn.org>) and KIDLINK (<http://www.kidlink.org>) programs. can be used as an example. Young people from about 40 countries will participate in it. It is possible to use hidden coordination in regional or international telecommunication projects, that is, the coordinator or one of the coordinators, as a participant of the project, sends the work (task) to the participants of the "hidden" project [10].

Educational telecommunication projects are educational, research, creative, scientific and playful activities of student-partners, organized on the basis of computer telecommunication, having a common problem, goal, agreed methods and methods of activity, and directed to achieving a joint result of the activity. Problem solving in any project requires integrated knowledge. In order to effectively organize telecommunication projects in the educational process of higher education, the following should be taken into account [11]:

- multiple, systematic, one-time or long-term observation of natural, physical, social and other phenomena to solve the given problem, collecting data from different regions;
- comparative study, making decisions and developing proposals to determine the exact trend of events, evidence, events occurring in different places;
- to compare and study the effectiveness of ways to solve a problem or issue (alternative or different methods), taking into account the differences between the cultural, ethnic, geographical conditions of the project participants;
- comparative analysis of social and cultural views, taking into account specific cultural, traditional, religious features;
- development of a creative idea (practical, creative, scientific, etc.) under the condition of joint research of a specific problem;
- conducting interesting adventure computer games and competitions, and focusing on the problem situations that arise in the context of cultural, educational traditions, sports.

## CONCLUSION

A telecommunication project, especially international projects, requires a deeper integration of knowledge, not only the field of scientific knowledge related to the researched problem, but also the characteristics of the partner's national culture, his knowledge and understanding of the world, his views. This will increase the culture of dialogue. For telecommunication projects organized in a foreign language (if specified in the program), it is considered appropriate to organize oral speech and reading development courses in foreign languages in accordance with the content and content of the project. If such projects are organized from special subjects or general professional subjects, and the problem texts in it do not correspond to the foreign language program, they can be organized personally (individually) during extracurricular time. It is known that information exchange in telecommunication projects is carried out in written form. This allows students to think well about their thoughts, edit them, and plays a positive role in their cognitive activity and the formation of social culture. In this project, the main condition or obstacle is the level



of knowledge of a foreign language [12]. Therefore, Decision PQ-1875 of the President of the Republic of Uzbekistan dated December 10, 2012 "On measures to further improve the system of learning foreign languages" is a timely decision, and all aimed at creating sufficient conditions for teachers and students in schools.

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## THE IMPORTANCE OF USING TELECOMMUNICATION LEARNING PROJECTS IN INDEPENDENT EDUCATION

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***Abstract.** The article focuses on the importance and necessity of digitalization of independent education in the credit module system of higher education and the use of telecommunication educational projects. Information on the content, types and international projects of telecommunications educational projects is provided. The procedure for organizing project protection and its external evaluation criteria are explained.*

***Key words:** credit, module, system, project, telecommunication, international, evaluation, external evaluation.*

### INTRODUCTION

The introduction of the credit-module system in the higher education system of Uzbekistan required a radical re-development of the curricula of educational areas and master's specialties. In the current credit-module system, 50-60% of the total educational load allocated to the major subjects in the curriculum of bachelor's education courses, and about 60-70% in the master's specializations are allocated to independent education. However, independent education is mainly carried out by preparing abstracts on the topic or giving tasks to summarize the topic. Writing an annotation or review on the topic can be added to this, and this will at least guide students to independent creative thinking. These traditional methods are outdated and do not work well in the innovative educational environment. Therefore, the author recommends organizing independent education in science based on digital technologies, that is, "Telecommunication educational projects", using the method of designing [1].

### METHODS AND MATERIALS

Pedagogical observation, comparative analysis, generalization, pedagogical experiment-test, mathematical-statistical analysis, mental cards, expert survey of foresight, development of scenarios, future box, and Delphi methods were used in the research process.

## RESEARCH RESULTS AND DISCUSSIONS

Organization of telecommunications projects requires a certain amount of preparatory work. In this, for example, how to find partners to study a specific problem? - the question arises. For this, it is possible to find partners from foreign countries by referring to the IEARN (<http://www.iearn.org>) and KIDLINK (<http://www.kidlink.org>) programs mentioned above. Or, you can go to the professional cooperation sites of teachers: European cooperation (<http://www.eun.org>) or Russian (<http://www.ioso.ru/distant/communiity>) and propose the project to them. Of course, in any case it is required that teachers coordinate students' activities from both sides. It is also important to introduce partners here. To do this, project participants can send short information about themselves together with their photos so that partners on the site can get acquainted. Because knowing the interests of partners and with whom they work in general plays an important role in such communication [2].

When working with foreign partners, it is necessary to know their specific cultural and traditional values and treat them with respect. That's why it is necessary to organize correspondence in an extremely literate language, respectfully to the partner, in an off-line mode (via e-mail or forum) or on-line mode (chat). Especially for the language of communication (foreign language), it is necessary to organize a serious preliminary preparation, taking into account the socio-cultural characteristics and speech culture of the representatives of the partner country, and the advice of the coordinator is very necessary [3]. The organization of telecommunication projects is not only international, but also regional or within the framework of one country. Because there will be no language barrier in the organization of the project, but the condition of taking into account national and ethnic, socio-cultural values and treating them with respect remains. The defense of the project is organized first at each partner educational institution during the training, and then by posting their presentation materials on the forum or on the website of one of the educational institutions. Partners can ask questions in the forum about the presented materials and receive relevant answers [4].

Timely and correct organization of external evaluation of telecommunications projects is one of the main factors affecting project effectiveness and practicality of obtained results. Because this makes it possible to make the necessary corrections during the work process and project protection. The nature of the external assessment depends on the type of project, its topic, its content and the conditions of its implementation. If the telecommunication project is a research project and it is carried out in different stages, the overall result of the project will depend on the degree of correct organization of the stages. In this case, the evaluation does not have to be made

by a specific mark. If the project is being organized during training, it can be done with the help of various incentive methods or orientation instructions [5,6]. For example, "Everything is correct, continue", "It is necessary to stop here and think", "It does not fit for some reason, try to consult and discuss" and other similar expressions. In creative projects, there is often no opportunity to evaluate intermediate results. However, it is still necessary to monitor the work and provide help and guidance if required (of course, not as a ready-made solution, but as advice). External evaluation is necessary in the form of interim or final external evaluation and depends on many factors. The teacher should conduct continuous monitoring of the collaborative project process [7]. During the defense of the project, in order to evaluate its results, the most talented student or other teacher in this field is selected as an external expert. Or, at the beginning of the project, a special group of experts is formed to evaluate and monitor the work of different groups working on this project.

The following factors are taken into account in the external evaluation of the project:

- relevance and importance of the presented problem, compatibility of the studied topics with each other;
- appropriateness of used research methods and methods of processing obtained results;
- activity of each project participant according to personal capabilities;
- the collective nature of the decision to be made;
- sufficient and deep insight into the problem, possibility to use knowledge of other fields of science;
- treatment and mutual support of project participants, as well as mutual complements and corrections;
- to be able to prove the decisions made, justify their conclusions and results with evidence;
- aesthetics of presentation and presentation of project results;
- participants to answer the opponents' questions abilities, reasonableness of answers and proof based on evidence;
- ability to imagine the consequences of the decisions made.

## CONCLUSION

In conclusion, educational telecommunication projects are part of high pedagogical technologies and require a lot of preparation from both the teacher and the student, and serious coordination of the student's entire educational activity. At the same time, this technology helps to develop the student intellectually, to form critical and creative thoughts. Such systematic cooperative activity leads not only to the

formation of independence in young people, but also to an increase in their responsibility for their own work and team activities. Therefore, it is appropriate to consider educational telecommunication projects as one of the most effective methods in the field of education that meets the requirements of the modern educational system and to widely apply it to the educational process.

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## ON THE TECHNOLOGY FOR THE DEVELOPMENT OF SCIENTIFIC AND CREATIVE ACTIVITY IN STUDENTS

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***Abstract.** The article describes the essence and purpose of developing scientific and creative activities of students and the main factors of developing scientific and creative activities based on person-oriented education. The main factors determining the nature of scientific and creative activity are divided into groups such as philosophical and socio-economic activity and psychological and pedagogical activity, and their measurement categories are developed.*

***Key words and phrases:** educational quality, scientific and creative activity, category, criterion, discovery, invention, design, intuitive thinking, creative hypotheses.*

### INTRODUCTION

Implementation of the reforms that are being carried out to fundamentally change the education system in Uzbekistan and creating comprehensive conditions for a deep understanding of the nature of the documents adopted in this regard by the general public - state administration, law enforcement agencies, education - defined as the most urgent tasks of employees of educational institutions. If the task of reforming the education system is successfully solved, the social and political climate will change dramatically, and democratic values will be established in people's minds. A person consciously determines his place in society [1].

The teachings of the great enlightener A. Avloni in the chapter of education that "Education is for us either life or death, or salvation or destruction, or happiness or disaster" were important and relevant at the beginning of our century. is so important every day.

In Al-Farabi's work "The City of Virtuous People", it is emphasized that every citizen of the society is a virtuous person, regardless of his position, position, that is, who he is. A virtuous person is a person who knows all the laws and regulations of his country, follows them, is a master of his profession, and sacrifices his life for the Motherland when necessary.

Disterverg writes about student education as follows: "Teach the student to work, teach him not only to love work, to be in harmony with it in such a way that work is absorbed into his body, teach him to , for him, the inability to learn something without his own strength should be considered unthinkable" [2].

In the chapter on education, Spencer says, "The process of self-improvement should be given a large place in the work of education. "Humanity has progressed only through independent learning." Therefore, educational technologies should mainly focus on the formation of competencies such as self-development, activation and improvement, self-assessment in students [3].

The above ideas about student education give one dictionary meaning, that is, the main direction of education is the development of thoughts and thinking in students, their ability, o It should be aimed at forming feelings of confidence in one's own knowledge and teaching them independence. This directly determines the need to develop scientific and creative activity in future specialists [4].

### **RESEARCH METHODS**

In the research process, the analysis of scientific and teaching-methodical literature, pedagogical observation, comparative analysis, generalization, pedagogical experiment-test and foresight methods were used.

### **RESEARCH RESULTS AND DISCUSSIONS**

Currently, in the educational system of developed countries, great attention is paid to such educational and pedagogical technologies. Such modern innovative technologies include educational technology, technology of step-by-step formation of mental activity, technology of collective interaction, technology of full mastery, technology of different levels of teaching, adaptive teaching. technology, programming-based teaching technology, problem-based teaching technology, modular teaching technology, technology for developing creative activities of future specialists, project style technologies [5].

Of course, the application of such pedagogical technologies is necessary to correctly assess the knowledge, learning and skills of students in the educational environment, to clearly determine the level of formation of professional competence in them and, accordingly, to recommend them to work in production enterprises. is one of the important conditions for ensuring Therefore, in modern education, more attention is paid to the type of education focused on the individual. One of the central concepts of humanistic (humanitarian) pedagogy is self-activation in person-oriented education, or the awakening of all one's potential abilities and natural talent and its application in life, self-activation, self-confidence plays an important role [6]. Today, ensuring the quality of education at the level of requirements can be achieved only

through the wide application of innovative pedagogical technologies based on the development of independent creative and scientific abilities of students, self-improvement and assessment in the educational process.

In this, the use of technology for the development of scientific and creative activity has an important place. Here we will focus on the main factors determining the essence of scientific and creative activity, measurement categories, creative activity strategy, tactics, methods of developing the experience of creative activities of future specialists, and the method of group stimulation of creative research [7].

It is recommended to classify the main factors determining the essence of scientific and creative activity as follows:

Philosophical and socio-economic activity. Creative activity is creating something new that is different from the existing one. Its measurement categories include the following [8]:

- discovery - identification of features and phenomena with previously unknown objective;

- invention - an innovation, decision, technology, etc., which is oriented towards the solution of technical problems and has positive significance in production.

- a rationalization proposal - a solution to the tasks of ensuring the efficient operation of previously known and currently applied technology in other new conditions;

- design - the process of building and creating a certain object based on two stages.

The design process can be carried out in two stages:

1. Initially creating the project in mind, preparing its drawings and technical documents.

2. Practical preparation of the project (preparation of details and parts, their processing, assembly and creation).

3. Design - artistic design of an object based on certain aesthetic characteristics.

Psychological-pedagogical activity is a creative activity in the form of new knowledge, learning and skills, which is previously unknown for this subject. Its measurement categories include the following [9]:

Intuitive thinking is a heuristic process, the creative ability to reach the truth (find a solution to a problem) without any evidence, without any evidence, which is not logically related or sufficient to draw a logical conclusion. the process of determining a solution to a problem based on research.

Intuition - relies on a large amount of knowledge and evidence accumulated during the course of theoretical and practical activity of the subject.



Creative hypotheses - the ability to imagine and hypothesize about objects and processes that a person has not seen in his personal experience or does not exist at all at the moment.

It should be noted that the technology of development of scientific and creative activity in higher education is the content of training specialists, taking into account the abilities and interests of students, designing the content in accordance with the purpose of education, and applying pedagogical methods, forms and teaching methods. is a system of interaction between a teacher and a student, which is implemented on the basis of psychological, general pedagogical, didactic and personal methodical procedures [10].

### CONCLUSION

Development of scientific and creative activities of students leads to development of scientific and creative competence in them. The role of this technology in improving the quality of education in higher education, its advantages and some disadvantages, improvement of methods of application in the educational process is one of the urgent and modern tasks. Also, this technology is a system of design and practical application of this technology, which provides a high level of efficiency, consists of pedagogical laws, goals, principles, content, form, methods and teaching tools and methods of education. The content of the technology for the development of scientific and creative activity should be aimed at the formation of professional competence in students, as well as the formation of the culture of working in a team, social competence related to the organization of joint activities. In addition to this technology, it is desirable to ensure interdisciplinarity in the use of this technology, to use the knowledge obtained from other disciplines, and to create an opportunity to develop competence related to other fields of knowledge and other activities.

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## ТАЪЛИМ СИФАТИ ВА СТАНДАРТЛАР

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***Аннотация.** Мақолада сифат бўйича халқаро стандартлар, жумладан ISO 9000 ва унинг моделлари, ISO 9004 Сифат тизими. Сифатни бошқариш тизими элементлари. Раҳбарий қоидалар” ва унинг элементлари тўғрисида маълумотлар келтирилган. Таълим сифати ва унинг таърифи, белгиловчи мезонлари ҳамда Европа Иттифоқи таълим стандарти ҳамда Болон декларацияси, кредит тизими тўғрисида таҳлилий маълумотлар ёритилган.*

***Таянч сўзлар ва иборалар:** сифат, стандарт, таълим сифати, Болонь жараёни, кредит, тизим.*

### КИРИШ

XX асрнинг иккинчи ярмидан бошлаб бутун дунё бўйлаб «Сифат инқилоби» юзага келди. Дунёнинг етакчи ишлаб чиқариш корхоналари асосий эътиборни сон ва миқдорга эмас, балки маҳсулот сифатига қарата бошлашди. Сифат рақобатбардошликни таъминловчи асосий омил сифатида намоён бўла бошлади [1].

Сифатга эътибор ва унинг ривожланиш босқичларини мантиқан қуйидаги даврларга бўлиш мумкин:

1. XX асрнинг 60-йиллари - бозор рақобатбардошлиги шароитида асосий омил - маҳсулот сифати.

2. XX асрнинг 70-йиллари – маҳсулот сифатидан ишлаб чиқариш технологияси сифатига ўтиш босқичи.

3. XX асрнинг 80-йиллари- сифатни бошқариш тизими босқичига ўтиш даври.

4. XX асрнинг 90-йилларидан бошлаб **таълим сифати**, интеллектуал ресурслар сифати, инсон ҳаёти сифати - асосий омил сифатида намоён бўла бошлади.

**Сифат** - умумий тушунча сифатида инсонларнинг эҳтиёжлари ва талабларини қондириш билан асосланувчи маҳсулот, материал, иш тури, меҳнат, хизматлар ва шу кабиларнинг хусусиятлари ҳамда хусусий белгиларининг

мажмуи бўлиб, уларни қўйилган талаблар ва ўз вазифаларига тўлиқ мос келиши билан баҳоланади. Бундай мослик асосан стандартлар, шартномалар, келишувлар, истеъмолчиларнинг талаблари билан аниқланади.

### **ТАДҚИҚОТ МЕТОДЛАРИ**

Тадқиқот жараёнида илмий ва ўқув-услубий адабиётлар таҳлили, педагогик кузатув, қиёсий таҳлил, умумлаштириш, педагогик тажриба-синов ва форсайт методларидан фойдаланилди.

### **ТАДҚИҚОТ НАТИЖАЛАРИ ВА МУҲОКАМАЛАР**

Сифат стандартлари тўпламининг асосини ISO 9000 “Сифатни бошқариш ва таъминлаш стандартлари. Танлаш ва амалда қўллаш бўйича раҳбарий қоидалар” хужжати ташкил этади. Ушбу меъёрий хужжатда ташкилот ва корхоналарнинг сифатни таъминлаш соҳасидаги сиёсатининг асосий принциплари ва сифатни бошқаришнинг 3 та модели кўрсатилган ҳамда сифатга оид турли хил тушунчалар ўртасидаги ўзаро боғлиқлик аниқланиб, тўлиқ ёритилган.

ISO 9000 стандартлар тўпламида келтирилган сифатни бошқариш моделлари қуйидагилардан иборат:

**Биринчи модел** – стандарт ISO 9001 “Сифат тизими. Ишлаб чиқиш (лойиҳалаш, ишлаб чиқариш, ўрнатиш ва хизмат кўрсатиш) босқичида сифатни таъминлаш модели” Ушбу модел маҳсулот ишлаб чиқариш ҳаётий циклининг барча босқичларини, яъни *лойиҳалаш - ишлаб чиқариш - ўрнатиш - хизмат кўрсатиш*ни ўз ичига олади.

**Иккинчи модел** - стандарт ISO 9002 “Сифат тизими. Ишлаб чиқариш ва ўрнатиш босқичида сифатни таъминлаш модели”.

**Учинчи модел** - стандарт ISO 9003 “Сифат тизими. Тайёр маҳсулотни назорат қилиш ва синаш босқичида сифатни таъминлаш модели”.

Стандартга иқтисодий жараёнлар учун янги атама “Тасдиқ даражаси” тушунчаси киритилган. Бу истеъмолчи (буюртмачи)га маҳсулотни тайёрловчи ташкилот (корхона) томонидан ишлаб чиқилган маҳсулот ва уни бошқариш сифати ўзаро тасдиқланган шартномадаги техник талабларга қанчалик мос келишини белгилайди.

ISO 9004 “Сифат тизими. Сифатни бошқариш тизими элементлари. Раҳбарий қоидалар”да корхоналарда сифатни бошқаришга оид 20 элемент ва уни қўллаш бўйича тавсиялар келтирилган. Раҳбар ўз корхонасининг ўзига хос хусусиятларини ҳисобга олган ҳолда ушбу стандарт тавсиялар асосида сифатни бошқариш элементларини танлаб олиши мумкин [1].

**Таълим сифати** – ижтимоий категория ҳисобланиб, жамиятда таълим жараёнининг ҳолати ва натижасини ҳамда шахснинг касбий, маиший ва фуқаролик компетентлигини шаклланиши ва ривожланишини жамият талаби ва эҳтиёжига мос келишини аниқлайди. Таълим сифати таълим муассасасининг ўқув-тарбиявий фаолиятини турли қирраларини тавсифловчи кўрсаткичлар мажмуи орқали баҳоланади. Ушбу кўрсаткичларга таълим оловчилар компетентлигининг ривожланишини таъминловчи таълим мазмуни, ўқитиш шакли ва услублари, материал-техник база, ходимлар таркиби кабилар киради [2].

**Таълим сифати** -инсон ҳаёт-фаолияти сифатини ошириш ва аниқ мақсадга эришишда фойдаланиш учун зарур бўладиган, аниқ шароитларда талаб этилиб олинган билимлар мажмуидир.

**Олий таълимда таълим сифати** - таълим моделининг контекстуал кўрсаткичлари, институционал мақсад ва вазифалари ҳамда таълим тизимининг аниқ стандартлари, таълим муассасалари, ўқув дастурлари ва фанлари билан боғлиқ бўлган кўп қиррали, кўп даражали динамик тушунчадир.

**Билим сифати** – ўқув жараёнини тугатгандан сўнг олинган билимларнинг фундаменталлиги, юқорилиги ва иш жараёнида қанчалик кераклилиги билан белгиланади [3].

**Европа Иттифоқи таълим стандарти. Болон жараёни** – олий таълимда ягона Европа тизимини вужудга келтириш мақсадида Европа давлатлари таълим тизимини бир-бирига яқинлашуви ва мослашиш жараёнидир. Болонья жараёнининг расмий бошланиш вақти 1999 йил 19 июнда Европанинг 29 давлати томонидан Болонья декларациясини қабул қилиниши ҳисобланади [4].

Болонья жараёнининг бошланиш тарихи 1970 йилларда Европа Иттифоқи вазирлар Кенгашининг таълим соҳасидаги биринчи резолюциясини қабул қилиниши билан белгиланади. 1998 йилда Европанинг 4та давлати (Франция, Германия, Буюк Британия ва Италия) таълим вазирлари Париж университетининг 800 йиллигини нишонлаш вақтида, олий таълимдаги турли тизимлар Европада фан ва таълимни ривожланишига тўсиқ бўлаётганлиги тўғрисида бир фикрга келишди ва Сорбон декларациясини имзолашди. Декларациянинг мақсади Европада олий таълим тизимини стандартлаштириш мақсадида умумий қоидалар ишлаб чиқишдан иборат эди [5].

Сорбон декларацияси мақсади 1999 йилда Болон декларациясини имзоланиши билан ўз тасдиғини топди ва Европанинг 29 давлати ўз хоҳиши билан, ихтиёрий равишда ушбу декларацияни имзоладилар.

Ҳозирги кунда Европа Иттифоқи аъзо 49 давлатдан қуйидаги 47 таси (Монако ва Сан-Маринодан ташқари) ва Европа Комиссияси ушбу жараён иштирокчиси ҳисобланади: Австрия (1999), Азербайджан (2005), Албания (2003), Андорра (2003), Армения (2005), Бельгия (1999), Болгария (1999), Босния и Герцеговина (2003), Ватикан (2003), Великобритания (1999), Венгрия (1999), Венгрия (1999), Греция (1999), Грузия (2005), Дания (1999), Ирландия (1999), Исландия (1999), Испания (1999), Италия (1999), Қазақстан (2010), Кипр (2001), Латвия (1999), Литва (1999), Лихтенштейн (1999), Люксембург (1999), Македония (2003), Мальта (1999), Молдавия (2005), Нидерландия (1999), Норвегия (1999), Польша (1999), Португалия (1999), Россия (2003), Румыния (1999), Сербия (2003), Словакия (1999), Словения (1999), Турция (2001), Украина (2005), Финляндия (1999), Франция (1999), Хорватия (2001), Черногория (2007), Чехия (1999), Швейцария (1999), Швеция (1999), Эстония (1999). Россия Болон жараёнига 2003 йил сентябрда қўшилган.

#### **Болон жараёнининг асосий мақсади:**

- Европада ягона олий таълим тизимини вужудга келтириш, жаҳонда Европа олий таълим тизимини фаоллаштириш;
- Европанинг барча олий таълим муассасаларига киришга кенг йўл очиш;
- Европа олий таълим тизимининг сифати ва мавқеини янада ошириш;
- ўқитувчилар ва талабалар мобиллигини ривожлантириш;
- Болон декларациясига аъзо давлатлар олий таълим тизимида барча академик даражалар ва бошқа ихтисосликларни меҳнат бозори талаблари асосида бир хил шакллантириш ҳисобига битирувчиларни муваффақиятли иш билан таъминлашни йўлга қўйиш.

Декларация қуйидаги 7 та асосий тамойилларни ўз ичига олган:

1. Бир хил академик даража ва диплом иловасини бериш орқари Европа фуқароларини иш билан таъминлаш имкониятларини ошириш, Европа олий таълим тизимини халқаро рақобатбардошлигини таъминлаш.

2. Олий таълимда икки поғонали (цикли) ўқитишни йўлга қўйиш: таянч (дастлабки) олий таълим (undergraduate) ва битирувчи (graduate). Биринчи цикл камида 3 йил давом этиши кўзда тутилган ва бакалавр даражасини беради. Иккинчи цикл магистр даражасини олиш билан яқунланади.

3. Талабаларнинг катта ҳажмда мобиллигини таъминлаш мақсадида зачет бирликларини ягона Европача тизимини тадбиқ этиш.

4. Талабаларнинг мобиллигини ривожлантириш. Трансмиллий таълим стандартини ўрнатиш.

5. Таққосланадиган мезонлар ва услубиётларни ишлаб чиқиш мақсадида сифатни таъминлаш учун Европа ҳамжамиятига кўмаклашиш.

6. Таълим сифатининг ички назорат тизимини тадбиқ этиш ва ОТМ фаолиятини ташқи баҳолашга талабалар ҳамда иш берувчиларни жалб этиш.

7. Ўқув режаларини, институтлараро ҳамкорлик, мобиллик ва ҳамкорлик ўқув дастурлари, амалий тайёрлов ва илмий-тадқиқот ишларини олиб боришни ривожлантириш орқали олий таълимда Европача анъаналарни юзага келишига кўмаклашиш [4].

Болон декларацияси доирасида ҳар икки йилда бир марта аъзо давлатлар таълим вазирлари иштирокида конференция ташкил этилади (2001 йил – Прага, 2003 йил-Берлин, 2005 йил - Берген, 2007 йил – Лондон, 2009 йил - Лёвен (Белгия), 2010 йил-Будапешт ва Вена). Шунингдек, ушбу жараён доирасида ташкилий форумлар (1-ташкилий Болон форуми -2009 йил Лёвен шаҳрида, 2-ташкилий Болон форуми – 2010 йил Венада) ўтказилган [5].

Европа олий таълим тизими келажакни аниқлайдиган тамойиллар ичида қуйидаги 3 та омил асосий ўрин эгаллайди:

1. Икки поғонали (цикли) олий таълимни тадбиқ этиш (бакалавр, магистр).

2. Синов бирликларини кўчириш ва тўлдиришга имкон берувчи Европа кредит тизми (ECTS) ни жорий этиш.

3. Олий таълим муассасалари ва олий таълим дастурларини аккредитациялаш жараёнини Европача анъаналарга мослаш.

Болон жараёни тамойиллари таълим дастурларини қиёслаш муаммосини ҳал этишга қаратилган **ECTS (European Credit Transfer System)** таълим натижаларини баҳолаш тизимини ишлаб чиқиш ва қўллаш, академик мобилликни оширишга кўмаклашишни назарда тутди.

ECTS қуйидаги масалаларни ҳал этишга йўналтирилган:

- талабаларга чет элларда ўқишга ёрдам бериш;
- бир олий ўқув юртдан иккинчисига ўқишни кўчирганда ўқиш натижаларини таққослаш ва қайта тўлдиришни таъминлаш;
- чет эл олий ўқув юртлари ўқув режаларига тезкор кириш ва академик тан олишни таъминлаш.

ОТМ ECTS тизимини жорий этиши учун қуйидагиларни амалга ошириши талаб этилади:

- ўқув режаларининг аниқ ва тушунарлилигини таъминлайди (ўқув жараёни тўғрисида тўлиқ маълумотларни батафсил баён этади);
- академик ихтисослик (даража)ни тан олинишида кўмаклашади.

- ўқув режасида курслар таркибини, талабанинг ўқув юкмасини ва ўқиш натижаларини аниқ ифодалайди.

- ўзининг мустақиллигини сақлайди ҳамда талабанинг ўқиш натижаларига оид қабул қилинган қарорлари учун тўлиқ жавоб беради.

ECTS Европа Комиссияси ERASMUS дастур лойиҳасининг дастлабки сифатида юзага келган бўлиб, ундан кўзланган мақсад Европа ҳамжамиятига аъзо давлатлар олий таълим тизимида барча таълим натижаларини академик жиҳатдан тан олишни қўллаб-қувватлашдир. 1992/93 академик йиллардан бошлаб - Европа ҳамжамиятига аъзо давлатлар ва Озод Европа савдо ассоциацияси (ЕҒТА) доирасида таълим натижаларининг тан олиниши талабаларга ўз таҳсилларини бошқа давлатлар олий ўқув юртларида давом эттиришга имконият яратди ва талабалар мобиллигини ривожланишига шароит яратди.

ECTS олти йил мобайнида тажрибавий текширувдан ўтган (1989/90 йилдан 1994/95 йилгача) ва бунинг учун қуйидаги бешта фан соҳаси танлаб олинган: «Бизнесни бошқариш», «Химия», «Тарих», «Тиббиёт», «Муҳандислик механикаси». Талабалар алмашинуви тизимида Европа олий ўқув юртларининг 145 факультети қатнашган [8].

ECTS таълим натижаларини академик тан олишнинг марказлашувига қарши тизим бўлиб, олий ўқув юртлари ўртасидаги ўзаро ишончга асослангандир. Ушбу тамойилни амалга тадбиқ этиш учун ECTS бир қатор қоидаларни ўрнатади: олий таълим муассасаси курслари тўғрисида маълумот олиш имкониятини яратиш; талабаларни қабул қилувчи ва юборувчи олий таълим муассасалари ўртасида келишув; ўқув дастурларини ўзлаштириш натижаларини баҳолашнинг ягона тизимини (ECTS баллари – кредит) ни тадбиқ этилиши. ECTS тизимида кўра ўқувчи бир семестрда 30 та ёки бир йилда 60 та кредит олиши мумкин.

ECTS ўз тузилишига кўра тўртта асосий қисмни ўз ичига олади: ахборот таъминоти; битим; кредит тизими; академик йилда талаба тўплаган кредитлар йиғиндисини аниқлаш.

**Ахборот таъминоти** қуйидаги маълумотларни ўз ичига олган ахборот пакетидан иборатдир: ўқув режаси; ўқув режасига кирган курс дастурлари; ҳар бир курсни кредитлаш тизими (ҳар бир курс учун ажратилган кредитлар сони); билимларни баҳолаш тизими; баҳолаш шкаласи; қўшимча маълумотлар.

**Битим.** Бу шартли жараён бўлиб, талаба ECTS доирасидаги бирор чет эл олий ўқув юртида ўқишини давом эттириши мақсадида стандарт аризани тўлдирди ва ушбу ариза талаба таҳсил олаётган ОЎЮ ҳамда ECTS



координаторига юборилади. Талабанинг олдин ўзлаштирган курслари сони ва ҳажми (кредитлар сони) талаба танлаган олий ўқув юртига тақдим этилади. Агар талаба мазкур ОТМга қабул қилинса иккала ОЎЮ координаторлари орқали талабага маълум қилинади.

**Кредитлар тизими.** Бу тизим ўқув йилини муваффақиятли тугатишга қаратилган, бажарилган ишлар ҳажмини миқдорий жиҳатдан баҳолаш жараёнини ифода этади. ECTS доирасида бир ўқув йили бўйича кредитлар сони 60 га тенг бўлиши лозим. Кредит талаба томонидан ўқув йили давомида бажарилган ишлар ҳажмини, жумладан маърузалар тинглаш, амалий ва семинар машғулотларда қатнашиш, лаборатория ишларини бажариш ва бошқа юкламаларни ифодалайди.

ECTS бўйича баҳолаш тизими	
Белгиланишлар	Ўзлаштириш даражаси
A	аъло
B	Жуда яхши
C	Яхши
D	Қониқарли
E	Минималъ талаб бажарилган, етарли
FY	Қониқарсиз, маълум даражада қўшимча ишлаш талаб этилади
F	Қониқарсиз, катта миқдорда қўшимча ишлаш талаб этилади.

Келгусида ECTS тажрибасини Европа Кенгаши Конференцияси (Forum Conference of the Higher Education and Research. Committee, Malta, 1994)да олий таълим муассасаларида кенг қўллаш тавсия этилган. Ушбу тизим Европа Кенгаши Конвенцияси (ЮНЕСКОнинг Европа минтақасидаги олий таълимга доир квалификацияларни тан олиш қўмитаси) ва 50 дан ортиқ аъзога эга бўлган Халқаро таълим Европа Ассоциацияси (European Association of International Education) сингари йирик халқаро нодавлат ташкилотлар томонидан маъқулланган.

### ХУЛОСА

Ўзбекистонда таълим сифатини халқаро рақобатбардошлигини таъминлаш, миллийликни сақлаган ҳолда ривожланган давлатлар таълим тизимини, жумладан Болон декларациясини атрафлича ўрганиш орқали халқаро

таълим тизимига кириб бориш, таълимда халқаро ҳамкорликни таъминлаш, меҳнат бозори талаблари ва республиканинг ижтимоий-иқтисодий ривожланишига мос ҳолда кадрлар тайёрлашга қўйиладиган талабларнинг ўзгаришини ҳисобга олиб таълим йўналишлари ва магистратура мутахассисликларининг классификатори ҳамда давлат таълим стандартлари такомиллаштирилмоқда.

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## LINUXDA GRAFIK ISHLOV BERISH. (1-QISM)

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***Annotatsiya:** Ushbu maqola Linux operatsion tizimidagi grafikalarining nozik tomonlarini yoritishga qaratilgan. Linux server muhitida, embedded tizimlarda va yaqinda, hatto foydalanuvchi uchun ish-stollarida keng qo'llanilishiga qaramay, ko'plab foydalanuvchilar va ishlab chiquvchilar uning grafik quyi tizimi bilan to'liq tanish emas. Ushbu qism dasturiy ta'minot ishlab chiquvchilari, Linux ishqibozlari, system administratorlar va Linuxning grafika bilan qanday ishlashini tushunishga qiziqqan barcha texnologiyaga ega bo'lgan barcha shaxslar uchun manba bo'lib xizmat qilishiga qaratilgan.*

***Kalit so'zlar:** Linux operatsion, Grafika, 2D va 3D vektorli grafika, Linux Graphics Stack*

***Аннотация:** Целью этой статьи является освещение тонкостей графики в операционной системе Linux. Несмотря на широкое использование Linux в серверных средах, встроенных системах и, в последнее время, даже в потребительских настольных компьютерах, многие пользователи и разработчики не до конца знакомы с его графической подсистемой. Этот раздел предназначен для разработчиков программного обеспечения, энтузиастов Linux, системных администраторов и всех других технически подкованных людей, заинтересованных в понимании того, как Linux работает с графикой.*

***Ключевые слова:** операционная система Linux, графика, 2D и 3D векторная графика, графический стек Linux.*

**Abstract:** *This article aims to cover the intricacies of graphics in the Linux operating system. Despite Linux's widespread use in server environments, embedded systems, and, more recently, even consumer desktops, many users and developers are not fully familiar with its graphical subsystem. This section is intended to serve as a resource for software developers, Linux enthusiasts, system administrators, and all other tech-savvy individuals interested in understanding how Linux works with graphics.*

**Keywords:** *Linux operating system, Graphics, 2D and 3D vector graphics, Linux Graphics Stack.*

### **Kirish.**

Linuxda grafik ishlov berish - bu ekranda vizual chiqishni ta'minlash uchun uzluksiz o'zaro ta'sir qiluvchi komponentlar majmuasini o'z ichiga olgan murakkab, ko'p bosqichli jarayon. Ushbu komponentlar qatoriga 2D va 3D vektorli grafiklarni ko'rsatish, GUI yaratish, software applicationlar va grafik hardwarelar o'rtasidagi aloqani ta'minlashgacha bo'lgan bir qator funksiyalarni taklif qiluvchi librarylar kiradi. Bundan tashqari, Linux grafik muhiti doimiy ravishda rivojlanib bormoqda, landshaftni qayta belgilashga qaratilgan yangi tendentsiyalar va texnologiyalar. Ushbu maqola Linuxning grafik ishlovi, librarylar(kutubxona), kernel roli, jalb qilingan drayverlar va ushbu makonni shakllantiradigan kelajakdagi qiziqarli tendentsiyalarni to'liq ko'rib chiqadigan ushbu elementlarni o'rganadi.

Ushbu maqolaning oxiriga kelib, o'quvchilar Linuxda grafikalar haqida yaxshi tushunchaga ega bo'ladilar, bu esa rivojlanish, muammolarni bartaraf etish yoki shunchaki shaxsiy qiziqishni qondirish uchun keyingi tadqiqotlar uchun mustahkam poydevor yaratadi.

**Adabiyotlarning tahlili.** Dastlabki kunlarda Linux o'ziga xos grafik tizimiga ega emas edi. U asosan buyruq qatori interfeyslari(CLI) orqali boshqarildi, grafik displeylar uchun juda oddiy yordam bilan. Ammo foydalanuvchilar uchun qulayroq interfeysga ehtiyoj paydo bo'lishi bilan, X11 yoki oddiygina X deb nomlanuvchi X Window System Unix dunyosidan qabul qilindi. Dastlab 1984 yilda Massachusetts texnologiya institutida ishlab chiqilgan X Window System grafik tasvirlarni ko'rsatish va oynalarni boshqarish uchun asosiy mexanizmlarni taqdim etdi, ammo u standart ko'rinish va hisni aniqlamadi. Ushbu moslashuvchanlik KDE va GNOME kabi turli xil desktop environmentlarini tug'dirdi, ularning har biri o'ziga xos estetika va xatti-harakatlarga ega.

X Window System (1984 yildan hozirgi kungacha) X, X11 yoki X Window System nomi bilan ham tanilgan, Unix-ga o'xshash operatsion tizimlarda, jumladan

Linuxda grafik foydalanuvchi interfeyslari uchun asos bo'lgan protokol va dasturiy ta'minot. X 1980-yillarning o'rtalarida MITda Linuxdan oldin ishlab chiqilgan. Linux ishlab chiqilganda, u o'zining grafik muhiti uchun X ni qabul qildi. X GUI-ni ishlab chiqish uchun asosiy asosni taqdim etadi, bu ilovalarga GUI elementlarini ko'rsatish, sichqonchani bosish va tugmalarni bosish va hokazolarni boshqarish imkonini beradi. Biroq, X ish stoli(desktop) qanday ko'rinishini aniqlamaydi; bu window manageri va desktop environmentning roli. Window Manager - bu X Window System muhitida oynalarning ko'rinishi va joylashishini boshqaradigan X clientlari. Birinchi window managerlaridan ba'zilar TWM (Tab Window Manager) va keyinchalik FVWM (F Virtual Window Manager) ni o'z ichiga olgan. Ular minimalist va zamonaviy standartlarga nisbatan juda qulay emas edi, lekin ular keyingi rivojlanish uchun asos bo'ldi.

Desktop Environment (1990-yillar - hozirgi) 1990-yillarning o'rtalaridan oxirigacha ishlab chiquvchilar yanada kengroq desktop environment(ish stoli muhitlari)ni yaratishni boshladilar. KDE (K Desktop Environment) Unix workstationlari uchun birinchi desktop environment bo'lib, birinchi marta 1996 yilda chiqarilgan. GNOME, yana bir mashhur desktop environment 1999 yilda chiqarilgan. KDE ham, GNOME ham kengroq ilovalar, sozlamalar va yordamchi dasturlar to'plamini taqdim etgan. Linux kundalik foydalanuvchilar uchun qulayroq. Ular vazifalar paneli(taskbar), ishga tushirish menyusi va drag-and-drop(sudrab tashlash) fayllarni boshqarish kabi xususiyatlarni o'z ichiga olgan.

2000-yillarning boshida to'g'ridan-to'g'ri ko'rsatish infratuzilmasi (Direct Rendering Infrastructure DRI) ko'rinishida sezilarli yutuqlarga erishildi. DRI applicationlarga X serverini chetlab o'tish va grafik qurilmalarga to'g'ridan-to'g'ri kirish imkonini berdi, bu esa ishlashning sezilarli yaxshilanishiga olib keldi, ayniqsa 3D grafikalar va o'yinlar uchun juda muhim. 2000-yillarda, shuningdek, Linux platformasida OpenGLni implemet qiluvchi open-source loyiha Mesaning rivojlanishi va yetukligi kuzatildi. Mesa hardware-accelerated 3D grafikalarini taqdim etish uchun DRI bilan birgalikda ishladi. Taxminan bir vaqtning o'zida, grafik karta ishlab chiqaruvchilari, ayniqsa Nvidia va AMD, Linux uchun xususiy drayverlarni taklif qila boshladilar, bu esa grafik ish faoliyatini yanada yaxshilaydi.

Compositing Window Manager(Window Managerlarni kompozitsiyalash) (2000-yillar - hozirgi) 2000-yillarning o'rtalarida Compiz, KWin (KDE uchun) va Mutter (GNOME uchun) kabi kompozitsion window managerlari paydo bo'ldi. Ular har bir oynani ekranda ko'rsatishdan oldin uni ekrandan tashqari buferda ko'rsatish orqali ko'zni qamashtiruvchi grafik effektlarni taqdim etdi.

Ushbu yutuqlarga qaramay, X Window System o'zining cheklovlariga ega edi, birinchi navbatda uning yoshi va dizayn falsafasidan kelib chiqqan holda, zamonaviy grafik qurilmalardan to'liq foydalana olmagan. Yechim 2008 yilda Kristian Høgsberg tomonidan boshlangan yangi display protokoli Wayland ko'rinishida paydo bo'ldi. Wayland zamonaviy kompozitsion window managerlari bilan yaratilgan soddaroq va samaraliroq display tizimini taqdim etish orqali X11 o'rni bosishni maqsad qilgan.

Bu davrda yana bir muhim texnologiya, Kernel Mode Setting (KMS)(kernel rejimni sozlash) paydo bo'ldi. KMS ko'chirilgan rejimni sozlash(mode setting) vazifalari, jumladan, grafik rejimlarni(mode) tanlash va frame bufferlarini o'rnatish, Linux kerneliga. Bu yuklash jarayonlari(boot process) va resolution switche tugmachalarini yumshatishga olib keldi, shuningdek, yanada ilg'or grafik texnologiyalar uchun poydevor qo'ydi.

Wayland (2012 - hozirgi): X Window System chekloclariga yechim sifatida ishlab chiqilgan. Birinchi marta 2012 yilda chiqarilgan Wayland grafik muhitni yaratish uchun soddaroq va zamonaviy protokoldir. Bu X-ga qaraganda xavfsizroq va samaraliroq, ammo uni qabul qilish sekin kechdi, chunki u mavjud dasturiy ta'minotning katta qismini qayta yozishni talab qiladi.

Vulkan (2016 yildan hozirgi kungacha) Vulkan - yuqori unumdor 3D grafika uchun low-leveladagi, o'zaro faoliyat platformali API. U GPU ustidan ko'proq to'g'ridan-to'g'ri nazorat(direct control) qilish va protsessordan kamroq foydalanishni taklif qilish uchun mo'ljallangan, bu video o'yinlar va boshqa grafik talab qiladigan ilovalar uchun foydalidir.

Hozirgi kun (2020-yildan). Bugungi kunda Linux grafik stacklari rivojlanishda davom etmoqda. Wayland tobora ommalashib bormoqda, garchi Xorg moslik sabablari tufayli keng qo'llanilsa ham. Open Source grafik drayverlar sezilarli darajada yaxshilandi, ko'pincha xususiyatlar bilan teng sharoitlarda raqobatlashdi. Vulkan, yangi avlod grafikasi va hisoblash API-si ishlab chiquvchilarga grafik qurilmalar ustidan ko'proq nazoratni ta'minlab, o'ziga jalb etilmoqda. Waylandni qabul qilishning ko'payishi (2020-2021): Wayland o'zining soddalashtirilgan yondashuvi va yaxshi xavfsizligi tufayli ancha vaqtdan beri X ning vorisi sifatida e'tirof etilgan. Ushbu davrda Wayland turli xil Linux distribyutorlari bo'ylab qabul qilishning kuchayishini ko'rdi. Masalan, Fedora Fedora 25 (2016) dan beri Wayland-dan standart bo'yicha foydalanmoqda, ammo Ubuntu Ubuntu 21.04 (2021) da uni standart bo'yicha ishlata boshladi. GNOME bir muncha vaqtdan beri Wayland-ni qo'llab-quvvatlab kelmoqda, ammo bu davrda KDE-ning Wayland-ni qo'llab-quvvatlashi sezilarli darajada yaxshilandi.

Vulkanni rivojlantirishni davom ettirish (2020-2021): 3D grafika uchun low-leveldagi, yuqori samarali, o'zaro faoliyat platformali yechimni ta'minlovchi Vulkan API keyingi qabul qilish va ishlab chiqishda davom etdi. 2021-yildan boshlab u o'yinlarni ishlab chiqishda, jumladan, AAA o'yin sarlavhalari va Linux o'yinlarida Valve'ning Proton moslik vositasi tufayli tobora ko'proq foydalanilmoqda.

**Metodologiya.** Linux kerneli grafik quyi tizimi yutuqlari (2020-2021): Linux kernelining grafik subsystemi ham ushbu davrda muntazam yangilanishlarni ko'rdi. Misol uchun, Direct Rendering Manager (DRM) subsystemdagi yaxshilanishlar izchil bo'ldi, jumladan, AMD va Intel GPU-larni yaxshiroq qo'llab-quvvatlash.

PipeWire (2020-2021): PipeWire - PulseAudio va JACK o'rni bosuvchi Linux ostida audio va video bilan ishlashni yaxshilashga qaratilgan loyiha. Bu shuningdek, grafikaga ham ta'sir qiladi, chunki u Wayland ostida ekran almashish va masofaviy ish stoliga yordam berish uchun mo'ljallangan, stsenariylarda Waylandning xavfsizlikka yo'naltirilgan dizayni X11 ostida qo'llaniladigan an'anaviy usullarni qiyinlashtirdi.

HDR-ni qo'llab-quvvatlash (2020-2021): Yana bir muhim yutuq - Intelning open-source jamoasining katta hissi bilan Linux ostida yuqori dinamik diapazonli (HDR) displeyni qo'llab-quvvatlash bo'yicha olib borilayotgan ishlar. 2021 yil holatiga ko'ra, Linux ekotizimida HDR joriy etish hali ham ishda.

Bular 2020 va 2021 yillarda Linux grafik landshaftida ro'y bergan ba'zi yutuqlar. Biroq bu soha butun dunyo bo'ylab bir qancha ishlab chiquvchilar, hamjamiyat va kompaniyalarning hissi bilan doimiy ravishda rivojlanib bormoqda.

**Tahlil va natijalar.** Linux-dagi grafik sayohati open-source rivojlanish kuchidan dalolat beradi, uning hamkorlik, innovatsiya va doimiy takomillashtirish ruhini o'zida aks ettiradi. Linux oldinga siljishi bilan uning grafik tizimlari rivojlanishda davom etadi va foydalanuvchilar va ishlab chiquvchilarga ko'proq imkoniyatlar, yaxshi ishlash va ko'proq moslashuvchanlikni beradi.

**Linux Graphics Stack** - bu layerli structura(qatlamli tuzulma) bo'lib, u kompyuter applicationlariga kompyuter ekranida tasvirlarni yaratish, o'zgartirish va ko'rsatish imkonini beradi. Stack application leveldan boshlanadi va hardwaregacha bo'lgan jarayonni o'z ichiga oladi. Buni layerma-layer ko'rib chiqanuz

Application Layer stackning yuqori qismi applicationlar joylashgan joy. Bu sizning web-browseringiz, matn muharingiz yoki ekraningizga tasvir yoki matn ko'rsatishi kerak bo'lgan boshqa turdagi application(dastur, ilova) bo'lishi mumkin.

Toolkit Layer Applicationlar foydalanuvchi interfeyslarini(user interface) ko'rsatishga yordam berish uchun ko'pincha grafik toolkitlardan foydalanadilar. Ushbu toolkitlar tugmalar(button), matn maydonchalari(text boxes), slayderlar(slider)

va boshqalar kabi oldindan tayyorlangan elementlar kutubxonalarini taqdim etadi. Masalan, GTK, Qt yoki FLTK.

Window System Layer Keyingi layer Window System Layer. Ushbu layer oynalarni(window) boshqa joyga ko'chirish, o'lchamlarini o'zgartirish yoki Z-tartibini o'zgartirish kabi asosiy imkoniyatlarni taqdim etadi. Ko'pgina Linux tizimlarida bu X Window System (X11) yoki Wayland bo'ladi.

Compositing Window Manager Window System Layerining ustiga qo'yish - Compositing Window Manager. Hamma tizimlarda ham bunday layer bo'lmaydi. Compositing Window Managerlari (masalan, Compiz yoki Mutter) ekranga yuborishdan oldin oynalarni buferga birlashtiradi. Bu shaffoflik(transparency), animatsiya yoki 3D desktop kabi effektlarni beradi.

Window System Server Layer Window System Server Layeri client applicationlari(mijoz ilovalari) va display hardware o'rtasidagi aloqani boshqarish uchun javobgardir. Linuxda buning eng keng tarqalgan misoli X11 bilan ishlaydigan tizimlardagi X Server bo'lishi mumkin.

Graphics Library Layer Window System Serveri ostida Graphics Library(grafik kutubxona) joylashgan. Bu dasturiy ta'minotning GPU bilan standartlashtirilgan tarzda o'zaro ishlashiga imkon beruvchi API ni taqdim etadi. Bu yerda asosiy misol - OpenGL va Vulkan kabi bir nechta grafik API-larni amalga oshiradigan Mesa.

Kernel Mode Setting (KMS) va Direct Rendering Manager (DRM) layeri Bu layer to'g'ridan-to'g'ri kernel bilan ishlaydi. KMS resolutionni aniqlash, rang chuqurligi(color depth) va refresh rateni (yangilanish tezligi) uchun javobgardir. DRM Linux kernelining subsystem (quyi tizi)mi bo'lib, u GPU-lar bilan interfeysga ega va memory management, interrupt handling va DMA kabi vazifalarni bajaradi.

Kernel Layer kernel operatsion tizimning asosiy qismidir. U to'g'ridan-to'g'ri hardware bilan bog'lanadi va memory management va task scheduling(vazifalarni rejalashtirish) kabi low-leveldagi service(xizmat)larni taqdim etadi.

Hardware Layer stackning pastki qismi actual grafik hardware'dir. Bu NVIDIA GeForce, AMD Radeon yoki Intel integratsiya qilingan GPU kabi bo'lishi mumkin bo'lgan grafik kartangiz. Stackning har bir layer(qatla)mi to'g'ridan-to'g'ri uning ustidagi va ostidagi layerlar bilan bog'lanib, abstraktsiya darajasini ta'minlaydi. Bu dasturiy ta'minotni ishlab chiquvchilarga boshqa layerlarning barcha tafsilotlarini tushunmasdan turib, o'zlarining maxsus vazifalariga e'tibor qaratish imkonini beradi.

Linux grafik staxking hardware layeri grafiklarni haqiqiy renderlash va ko'rsatish bilan shug'ullanadigan jismoniy(physical) komponentlardan iborat. Ushbu komponentlar GPU (Graphics Processing Unit), video xotira (VRAM- Video random-access memory) va monitorlar yoki ekranlar kabi display hardware'ni o'z ichiga oladi.



GPU Graphics Processing Unit grafiklarni ko'rsatish uchun zarur bo'lgan hisob-kitoblar uchun optimallashtirilgan maxsus protsessoridir. U tizimning asosiy protsessoridan mustaqil ishlaydi va boshqa vazifalar uchun resurslarni bo'shatadi. GPU piksellarni chizish, teksturalar bilan ishlash va 3D grafikalar va animatsiyalar uchun zarur bo'lgan murakkab calculationlarni bajarish uchun javobgardir.

GPU bir nechta asosiy elementlardan iborat. GPU Core Bu GPUning yuragi. GPU core instructionlarni bajarish va actual computationlarni bajarish uchun javobgardir. Muayyan GPU modeliga qarab, u yuzlab yoki hatto minglab corelarga ega bo'lishi mumkin. Har bir core bir vaqtning o'zida bir nechta threadlarni boshqarish uchun mo'ljallangan, shuning uchun GPUlar parallel ishlov berishda juda samarali.

CUDA Corelar/Stream Processor Bular GPU coresidagi parallel protsessorlar bo'lib, ular mos ravishda NVIDIA va AMD o'zlarining GPUlarida foydalanadilar. CUDA corelari NVIDIA GPU-lariga xos bo'lib, bir vaqtning o'zida ko'p vazifalarni bajarish uchun mo'ljallangan qayta ishlash coresining bir turidir. AMD ning ekvivalenti Stream Processor deb ataladi.

Memory Bu GPU-ning o'ziga xos maxsus operativ xotirasi bo'lib, ko'pincha VRAM (Video Random Access Memory) deb ataladi. U teksturalarni, framebufferlarni va GPU ko'rsatish uchun zarur bo'lgan boshqa ma'lumotlarni saqlash uchun ishlatiladi. Yuqori darajali grafik protsessorlarda ko'pincha juda yuqori ma'lumotlarni uzatish tezligini bajara oladigan katta hajmdagi GDDR6 (Graphics Double Data Rate 6) xotirasi yoki HBM (High Bandwidth Memory) mavjud.

Memory Bus Memory Bus GPU coresi VRAM bilan aloqa qiladigan yo'ldir. Kengroq memory busi bir vaqtning o'zida ko'proq ma'lumotlarni uzatish imkonini beradi, bu esa ishlashga sezilarli ta'sir ko'rsatishi mumkin.

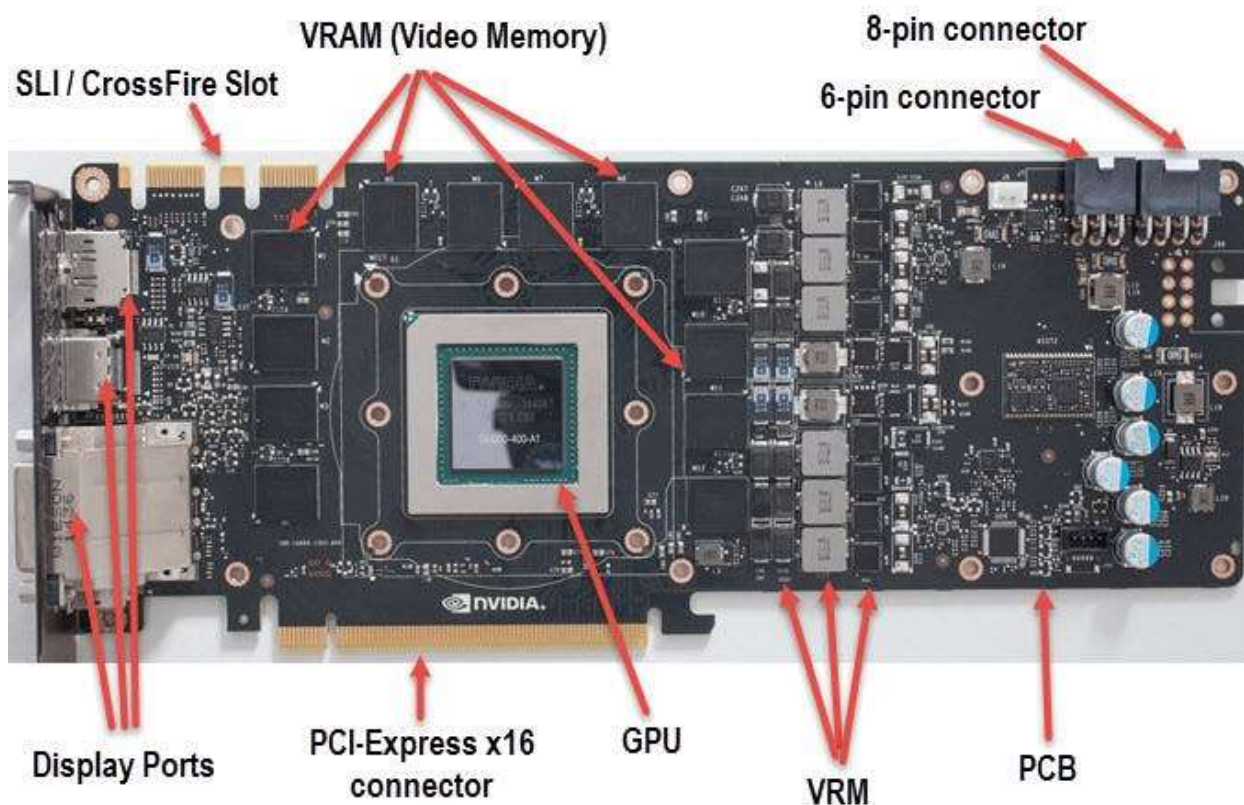
Memory Clock Bu GPU xotirasining ishlash tezligini bildiradi. Bu ma'lumotni xotiradan o'qish va xotiraga yozish tezligiga ta'sir qiladi, bu GPUning umumiy ishlashiga ta'sir qiladi. Clock Speed Clock Speed GPU coresining ishlash tezligidir. Yuqori clock speed odatda tezroq ishlashni anglatadi, lekin ular ko'proq issiqlik hosil bo'lishiga ham olib kelishi mumkin. Shader Unit Bu effektlar va ranglarni ko'rsatish uchun ishlatiladigan GPU ichidagi maxsus ishlov berish birliklari. Ular vertex, geometriya va piksel soyasi bilan bog'liq keng ko'lamli vazifalarni bajarish uchun dasturlashtirilishi mumkin. Texture Mapping Unit (TMU) Bular 3D modellarga teksturalarni qo'llash uchun javobgardir. GPUdagi TMUlar soni uning murakkab teksturali yuzalarni ko'rsatish qobiliyatiga ta'sir qilishi mumkin.

Render Output Unit (ROP) Ular tasvirlashning oxirgi bosqichlarini, masalan, anti-aliasingni boshqaradi va yakuniy piksel ma'lumotlarini xotiraga yozadi. ROPlar

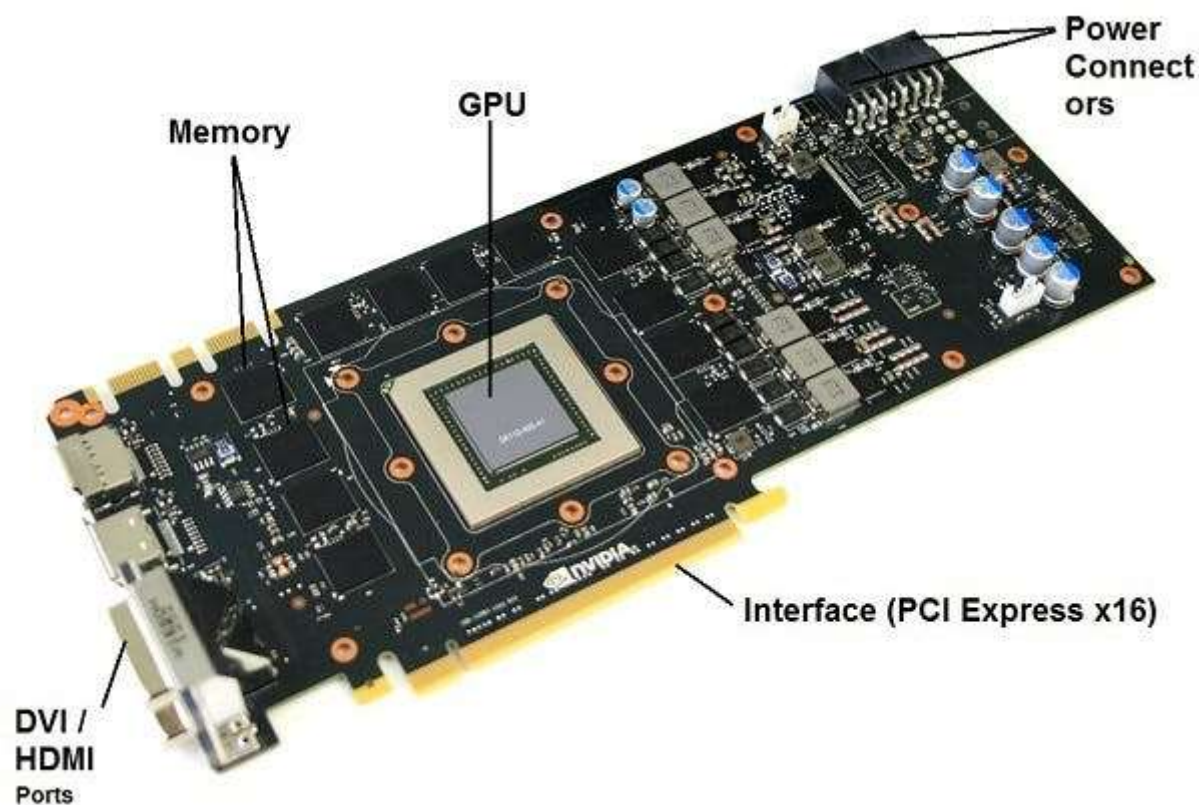
soni GPU ning tasvirlarni yuqori aniqlikda ko'rsatish qobiliyatiga ta'sir qilishi mumkin.

**Thermal Design Power (TDP)** Bu GPU og'ir yuk ostida ishlab chiqarishi kutilayotgan issiqlikning maksimal miqdorini bildiradi. Bu GPU uchun zarur sovutish yechimlarini aniqlash uchun muhimdir.

**Power Connector** Bular GPU ni ishlashi uchun zarur quvvat bilan ta'minlaydi. Yuqori darajadagi GPUlar yuqori quvvat sarfi tufayli ko'pincha bir nechta quvvat ulagichlarini talab qiladi. **PCI Express Interface** Bu GPU kompyuterning qolgan qismi bilan aloqa qiladigan ulanish. PCI Express interfeysining tezligi va kengligi GPUning umumiy ishlashiga ta'sir qilishi mumkin. **Video portlar** Bular GPU uchun chiqishlar(output) va ular displeylarni ulash uchun ishlatiladi. Umumiy turlarga HDMI, DisplayPort va DVI kiradi. Esda tutingki, ushbu elementlarning barchasi grafik tasvirlash va hisoblash vazifalari uchun optimal ishlashni ta'minlash uchun uyg'unlikda ishlashga mo'ljallangan. Ushbu elementlarning o'ziga xos soni va konfiguratsiyasi GPU modeliga va undan foydalanish maqsadiga qarab juda farq qilishi mumkin.



**1-rasm. GPU**



2-rasm. GPU



3-rasm. NVIDIA GeForce RTX 3070

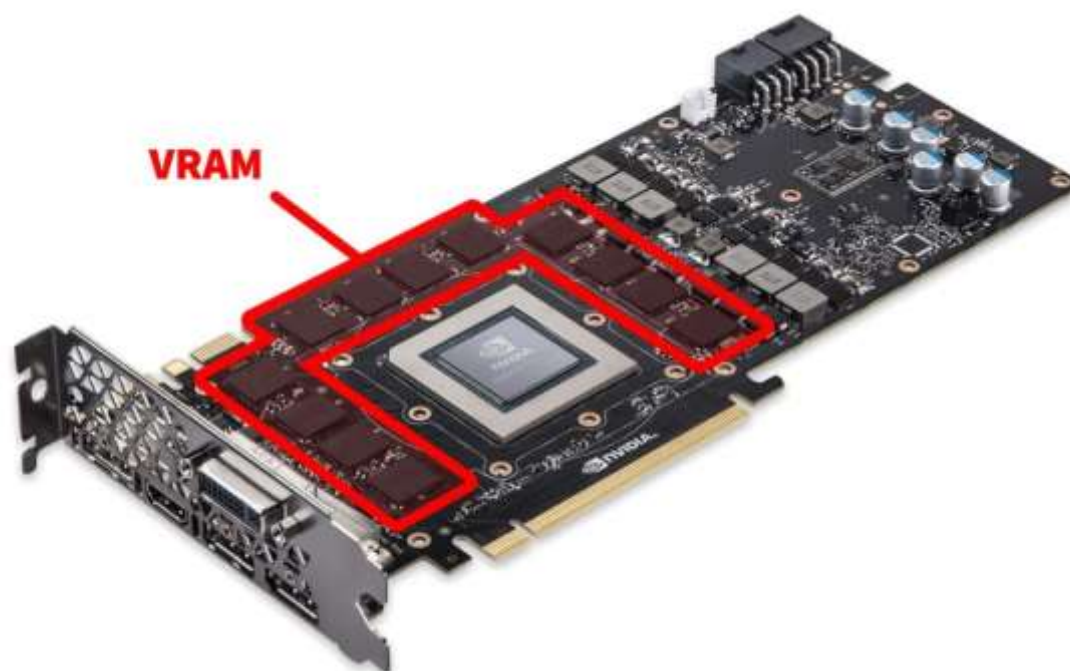
Video Random Access Memory (VRAM) - kompyuter graphics processing unit (GPU) ishlov beradigan tasvir va video ma'lumotlarni saqlash uchun kompyuterlarda ishlatiladigan xotira turi. VRAM protsessor va video karta protsessori o'rtasidagi buferdir. Nomidan ko'rinib turibdiki, bu tasodifiy kirish, ya'ni GPU unda saqlangan ma'lumotlarga tezda kirishi mumkin.

VRAM frame bufferi bo'lib xizmat qiladi, bu asosan hozirda ko'rsatilayotgan tasvirlar uchun ma'lumotlarni saqlaydigan xotira ("frame buffer" buferidagi "frame"). Nisbatan sekin bo'lgan monitor va ancha tez bo'lgan protsessor o'rtasidagi tezlik farqi tufayli frame bufferi kerak. Grafik kartaga kerak bo'lgan VRAM miqdori o'yinlaringiz yoki boshqa grafik talab qiladigan vazifalarni bajarayotganingizning ruxsatiga bog'liq. Yuqori aniqlik uchun ko'proq VRAM kerak. Xuddi shunday, anti-aliasing, yuqori dinamik diapazon (HDR) va murakkab yoritish yoki soya algoritmlari kabi ilg'or grafik texnikasi ko'proq VRAMni talab qiladi.

VRAM turlariga quyidagilar kiradi: GDDR (Graphics Double Data Rate) Bu DDR xotira turi, lekin grafik kartadan foydalanish uchun maxsus mo'ljallangan. U GDDR2, GDDR3, GDDR4, GDDR5, GDDR6 va GDDR6X versiyalarini o'z ichiga oladi. Har bir keyingi versiya odatda avvalgilariga nisbatan yaxshilanishlarni taklif etadi, masalan, quvvatni yaxshiroq boshqarish yoki yuqori tezlik.

HBM (High Bandwidth Memory) Bu yuqori sifatli grafik kartalar va HPC (High Performance Computing) da qo'llaniladigan yuqori samarali RAM interfeysi. HBM GDDR xotira turlariga qaraganda kamroq quvvat sarflagan holda yuqori xotira tarmoqli kengligiga erishish uchun keng interfeysli arxitekturadan foydalanadi.

SGRAM (Synchronous Graphics RAM) Ushbu turdagi VRAM kompyuterning bus speedi bilan bir xil tezlikda ishlaydi. Hozirgi kunda u kamroq tarqalgan, ammo ba'zi eski grafik kartalarda ishlatilgan. VRAM GPU ning muhim komponenti bo'lib, uning hajmi, tezligi va samaradorligi GPU ishlashiga sezilarli ta'sir ko'rsatishi mumkin. Zamonaviy grafik protsessorlar odatda eng yuqori darajadagi kartalarda bir necha gigabaytdan 24 Gb gacha bo'lgan VRAM miqdoriga ega.



**4-rasm: VRAM**

Monitorlar/Ekranlar (Monitors/Screens) Bular aslida foydalanuvchiga ko'rsatilgan grafiklarni ko'rsatadigan chiqish qurilmalari( output device). Ular GPU dan yakuniy tasvir ma'lumotlarini oladi va uni ko'rsatilishi mumkin bo'lgan formatga aylantiradi. Monitorlar kichik mobil displeylardan tortib yuqori aniqlikdagi katta ekranlarga bo'lgan har xil turdagi, o'lcham va resolutionlarda bo'lishi mumkin.

Monitorlar haqida gapirganda e'tiborga olish kerak bo'lgan ba'zi asosiy jihatlar

Ekran o'lchami: Bu burchakdan burchakka diagonal ravishda o'lchanadi. Ish stoli monitorlari uchun odatiy o'lchamlar taxminan 20 dyuymdan 32 dyuymgacha yoki undan kattaroq, noutbuk ekranlari esa odatda 12 dan 17 dyuymgacha.

Resolution: Bu ekranda ko'rsatilgan piksellar sonini bildiradi va odatda kenglik x balandlik sifatida ifodalanadi. Masalan, 1920x1080 o'lchamdagi monitor displeyning kengligi bo'ylab 1920 pikselni va balandligi bo'yicha 1080 pikselni ko'rsatishi mumkin. Yuqori aniqlik aniqroq, aniqroq tasvirni anglatadi, lekin ko'proq grafik quvvat talab qiladi. Umumiy resolutionlarga 1080p (Full HD), 1440p (2K yoki QHD) va 2160p (4K yoki UHD) kiradi.

Aspect Ratio: Bu ekran kengligining balandligiga nisbati. Eng keng tarqalgan tomonlar nisbati 16:9, ammo 21:9 (ultra keng) va 4:3 (eski monitorlarda qo'llaniladi) kabi boshqa nisbatlar ham mavjud.

Panel turi: Bu ekranda tasvirni yaratish uchun ishlatiladigan texnologiya turiga ishora qiladi. Eng keng tarqalgan turlari TN (Twisted Nematic), VA (Vertical Alignment) va IPS (In-Plane Switching). Har birining o'ziga xos kuchli va zaif

tomonlari bor, IPS odatda eng yaxshi rang aniqligi va ko'rish burchaklarini ta'minlaydi, TN eng tez javob vaqtini taklif qiladi va VA o'rta darajadagi tanlovdir.

**Refresh Rate:** Bu monitoring soniyada yangi ma'lumotlar bilan yangilanishi va gerts (Hz) bilan o'lchanadigan soni. Odatda yangilanish tezligi(Refresh Rate) 60Hz, 120Hz, 144Hz va 240Hz ni o'z ichiga oladi. Yuqori yangilanish stavkalari harakatni silliq ko'rinishga olib kelishi va kiritish kechikishini kamaytirishi mumkin, bu ayniqsa tez sur'atli video o'yinlarda qimmatlidir.

**Response Time:** Bu pikselning qoradan oqga yoki bir kul rangdan ikkinchisiga o'zgarishini qanchalik tez ko'rsatishini o'lchaydi. Kamroq javob vaqti(response time) tezroq harakat paytida kamroq xiralashgan harakat va aniqroq tasvirni anglatadi.

**Color Depth(rang chuqurligi)** Bu monitor qancha rang ko'rsatishi mumkinligini o'lchaydi. Aksariyat monitorlar kamida 16,7 million rangni (24 bitli true color) ko'rsatishi mumkin, ammo professional darajadagi monitorlar 1,07 milliard (30 yoki 32 bit true color) yoki undan ko'p rangni ko'rsatishi mumkin. **Yorqinlik(Brightness):** Bu displeydan chiqadigan yorug'lik miqdori va odatda kvadrat metr (cd/m<sup>2</sup>) candelalarda o'lchanadi.

**Contrast nisbati:** Bu monitor ishlab chiqarishga qodir bo'lgan eng yorqin rang (oq) yorqinligining eng quyuq rangga (qora) nisbati. Yuqori kontrast stavkalari, odatda, monitor yanada nozik rang farqlari va chuqurroq qora ranglarni ko'rsatishi mumkinligini ko'rsatadi.

**Input Connectorlari:** Bular monitorni kompyuteringizga ulash uchun ishlatiladigan portlardir. Umumiy turlarga HDMI, DisplayPort, DVI va VGA kiradi.

Monitorlar, shuningdek, moslashuvchan sinxronlash texnologiyasi (NVIDIA G-Sync yoki AMD FreeSync), o'rnatilgan dinamiklar(built-in speaker), USB portlar, curved ekranlar va boshqalar kabi xususiyatlarga ega bo'lishi mumkin.

Dasturiy ta'minot nuqtai nazaridan, Linux grafik stackining hardware layeri birinchi navbatda kernel bilan o'zaro ta'sir qiladi, bu esa turli quyi tizimlar(subsystem) va interfeyslar orqali hardwarega low-leveldagi kirishni ta'minlaydi. Bunga GPUga kirishni boshqarish uchun Direct Rendering Manager (DRM), oddiy chizish operatsiyalari uchun framebuffer qurilmasi va videoni suratga olish va chiqarish uchun Video4Linux interfeysi kiradi.

## XULOSA:

GPU va hardware layerining boshqa komponentlari bilan aloqa qilish uchun open-source va xususiy driver dasturiy ta'minotidan foydalaniladi. Driverlar high-leveldagi buyruqlarni operatsion tizimdan hardware tushunadigan low-leveldagi instructionlarga tarjima qiladi. Shuningdek, ular resurslarni boshqaradilar, xatolarni hal qiladilar va

grafik hardwarening yaxshi va samarali ishlashini ta'minlash uchun tizimning qolgan qismi bilan muvofiqlashtiradilar.

Ushbu hardware layer Linux grafik stacking qolgan qismi uchun asos bo'lib xizmat qiladi.

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## EKSSUDATIV TUBERKULYOZ PLEVRIT TASHXISINI OPTIMALLASHTIRISH USULLARI

**Abdullaeva Feruza Orzuevna**

Buxoro davlat tibbiyot instituti,  
ftiziatriya va pulmonologiya kafedrasida assistenti

*Annotatsiya.* So‘nggi o‘n yil ichida dunyoning aksariyat mamlakatlarida tuberkulyoz kasalligi bilan kasallanishning o‘ssishi kuzatildi. Dunyo hamjamiyatining aksariyat mamlakatlarida tuberkulyoz kasalligi bo‘yicha hozirgi epidemiologik vaziyat keskinligicha qolmoqda. Plevra bo‘shlig‘ida suyuqlik to‘planishining sabablari genenez va mexanizmlarda farq qiladi, bu esa ko‘pchilik rus va xorijiy mualliflar tomonidan e‘tirof etilgan ushbu patologiyaning differentsial diagnostikasi qiyinchiliklarini keltirib chiqaradi. Tuberkulyoz plevritni tashxislash uchun mikrobiologik usullar (mikroskopiya va balg‘am madaniyati), plevra biopsiyasi (namuna va madaniyatni gistologik tekshirish), rentgen usullari, immunologik usullar va polimeraza zanjiri reaksiyasi qo‘llaniladi. Tuberkulyoz ekssudativ plevrit kasalligi etiologiyasining tashxislash uchun mumkin bo‘lgan biokimyoviy belgilardan biri plevra suyuqligidagi adenozin deaminaza (ADA) faolligini aniqlash bo‘lishi mumkin.

*Kalit so‘zlar:* tuberkulyoz plevriti, tashxis, adenozindeaminaza, diagnostik kamchiliklar.

**Mavzuning dolzarbligi.** So‘nggi o‘n yillikda dunyoning aksariyat mamlakatlarida tuberkulyoz kasalligi bilan kasallanishning ko‘payishi qayd etildi (Eroxin V.V., 2003; Ubaydullaev A.M., Tillashayxov M.N., Parpieva N.N.). Tuberkulyoz kasalligining ko‘payishi bilan tuberkulyoz ekssudativ plevrit holatlari sonining ko‘payishi kuzatildi (Liam CK, 2000; Peto HM, 2009). Dunyo hamjamiyatining aksariyat mamlakatlarida tuberkulyoz kasalligi bo‘yicha hozirgi epidemiologik vaziyat keskinligicha qolmoqda. JSSTning so‘nggi ma‘lumotlariga ko‘ra, 2012 yilda dunyo bo‘ylab 8,6 million yangi kasallik holati va tuberkulyoz bilan bog‘liq 1,3 million o‘lim qayd etilgan [35]. Zamonaviy tuberkulyoz epidemiyasining o‘ziga xos xususiyati patogenning dori-darmonlarga chidamli shtammlarining keng tarqalishidir. XXI asrning dastlabki yillari O‘zbekistonda tuberkulyoz kasalligining tarqalishi va aholiga tuberkulyozga qarshi yordam ko‘rsatishni tashkil etishning ayrim ko‘rsatkichlarining ma‘lum darajada barqarorlashuvi bilan xarakterlanadi. Umuman olganda, tuberkulyoz kasalligi bilan bog‘liq vaziyat juda keskin bo‘lib qolmoqda [34].



Dunyoning boshqa mamlakatlarida bo'lgani kabi O'zbekistonda ham tuberkulyoz kasalligi bo'yicha epidemiologik vaziyatning yomonlashuvi dori vositalariga chidamli MBT shtammlari sonining ko'payishi bilan bog'liq [38].

Tuberkulyoz kasalligi bilan kasallanish sog'liqning asosiy muammolaridan biri bo'lib qolmoqda. Tuberkulyozning keng tarqalgan ekstrapulmoner ko'rinishi plevritdir [39]. Tuberkulyoz plevrit (TP) mikobakteriyalar plevra bo'shlig'iga antigen oqsil ajratganda rivojlanadi. Bu to'liq tushunilmagan sekin turdagi sensibilizatsiya reaksiyasini keltirib chiqaradi va suyuqlik plevra bo'shlig'ida to'planadi.

Qiyinchiliklar odatda plevritning o'zini tashxislashda emas, balki o'z vaqtida etiotropik davolash uchun uning etiologiyasini aniqlashda yotadi. Gap shundaki, plevral efüzyonning mavjudligi tuberkulyoz kasalligidan tashqari, pnevmoniya, xavfli o'smalar, konjestif yurak etishmovchiligi, jigar sirrozi, nefrotik sindrom, yuqumli tuberkulyoz bo'lmagan o'pka kasalliklari va biriktiruvchi to'qimalarning diffuz kasalliklaridan kelib chiqishi mumkin.

Plevra bo'shlig'ida mikobakterial antigenlarning mavjudligiga javoban kechiktirilgan turdagi yuqori sezuvchanlik reaksiyasi natijasi deb hisoblangan plevral efüzyon bilan birga keladi. Shu bilan birga, tuberkulyozli plevritning klinik ko'rinishi boshqa etiologiyali plevritga o'xshaydi (o'pkada malign neoplazmalar yoki tuberkulyoz bo'lmagan etiologiyaning yuqumli jarayoni tufayli). Shu munosabat bilan tuberkulyoz plevritining differentsial diagnostikasi o'z vaqtida etiotropik davolash uchun juda muhimdir [36].

#### **Eksudativ tuberkulyoz plevrit rivojlanishining patogenetik mexanizmlari.**

Plevra bo'shlig'ida suyuqlik to'planishining sabablari genezis va mexanizmlarda farq qiladi, bu esa ko'pchilik rus va xorijiy mualliflar tomonidan e'tirof etilgan ushbu patologiyaning differentsial diagnostikasi qiyinchiliklarini keltirib chiqaradi. Tuberkulyoz kasalligi eksudativ plevritning eng keng tarqalgan sabablaridan biridir [16].

Mavjud adabiy manbalarda tuberkulyoz plevritning kechishi haqidagi fikrlar noaniq. Tuberkulyoz plevrit rivojlanishining patogenetik mexanizmlariga qarab, mualliflar kasallikning turli xil variantlarini qayd etdilar. Masalan, eksudatsiya davri 10-15 kundan 3 oygacha davom etishi mumkin. Ba'zi hollarda tuberkulyoz plevritining atipik va asemptomatik kursi qayd etiladi. Turli xil etiologiyali plevrit uchun klinik, laboratoriya va rentgenologik ma'lumotlar ko'pincha bir-biriga o'xshash va aniq klinik belgilarga ega emas, bu ularning differentsial tashxisini qiyinlashtiradi. 7-13,4 % bemorlarda jarayon surunkali holga keladi [ 1-2 , 2-1 , 2-5 ].

Silning turli shakllarida, shu jumladan tuberkulyoz plevritida endotoksikoz jarayonlari (yoki yallig'lanish sindromiga tizimli javob) haqida etarli ma'lumot yo'q [

41]. Endogen intoksikatsiyaning patofiziologik mexanizmlarini baholash uchun karbamid, kreatinin va o'rta molekulyar peptidlar darajasi, o'rtacha og'irlikdagi molekulalar, tripsinga o'xshash va antitripsin faolligi, ammiak konsentratsiyasi aniqlanadi va intoksikatsiyaning leykotsitlar indeksi hisoblanadi.

TEP - qo'shni organlarda yoki plevra qatlamlarida yallig'lanish jarayonlari natijasida yoki qon plazmasining kolloid-osmotik bosimi va kapillyarlardagi gidrostatik bosim o'rtasidagi munosabatlar buzilganda plevra bo'shlig'ida suyuqlikning patologik to'planishi.

**Suyuqlikning to'planish mexanizmlari** plevrit bilan plevra bo'shlig'ida:

- Parietal plevra tomirlarining o'tkazuvchanligi kuchayadi, bu visseral va parietal plevrada kapillyar gidrostatik bosimning oshishiga olib keladi.
- Plevra bo'shlig'ida oqsil miqdori ortishi.
- Qon plazmasining onkotik bosimining pasayishi.
- Intraplevral bosimning pasayishi (bronxogen o'pka saratoni tufayli atelektaz bilan, sarkoidoz).
- Limfa tomirlari orqali plevra suyuqligining chiqishi buzilishi.

**TP diagnostikasi va differentsial tashxisiga zamonaviy yondashuvlarni optimallashtirish.** Tuberkulyoz plevritni tashxislash uchun mikrobiologik usullar (mikroskopiya va balg'am madaniyati), plevra biopsiyasi (namuna va madaniyatni gistologik tekshirish), rentgen usullari, immunologik usullar va polimeraza zanjiri reaksiyasi qo'llaniladi. Biroq, yuqoridagi testlar natijalariga ko'ra tashxis qo'yish juda qiyin, chunki kulturalarning atigi 10-35% va molekulyar testlarning 20-81% plevra suyuqligida MBTni aniqlay oladi va namunalarni gistologik tekshirishda yuqumli granulomalar aniqlanadi. faqat 56-82% hollarda.

Plevra ekssudatini mikroskopik yoki madaniy mikrobiologik tekshirish yoki morfologik tekshirish (kazeifizatsiyani aniqlash) paytida tuberkulyoz mikobakteriyalarini aniqlash orqali erishish mumkin. epiteliodin hujayrali granulomalar) plevra biopsiyalari. O'pkada tuberkulyoz o'zgarishlar mavjud bo'lganda, MBT 30-50% hollarda kultura yordamida ekssudatda aniqlanadi, lekin faqat juda uzoq vaqt (oylargacha). Eng katta qiyinchiliklar o'pkada ko'rinadigan o'zgarishlar bo'lmaganda paydo bo'ladi. Ko'pgina hollarda tuberkulyoz plevritining tashxisi faqat klinik ma'lumotlarga asoslanadi, bu esa ko'p sonli xatolar va uzoq diagnostika vaqtlariga olib keladi.

O'z vaqtida tashxis qo'yish va tuberkulyoz plevritning differentsial diagnostikasi, birinchi navbatda plevrit etiologiyasini tezda aniqlash usullarini yaratishning aniq o'ta dolzarbligi.

IFN-g tarkibini aniqlash muhokama qilinadi. Polimeraza zanjiri reaksiyasi (PCR) diagnostika jarayonida muhim rol o'ynashi mumkin. Biroq, bu usul bilan ham, plevral ekssudatni o'rganish juda kam ma'lumotga ega, chunki uning sezgirligi PCR yordamida plevra biopsiyalarini o'rganish bilan solishtirganda taxminan 17% ni tashkil qiladi - 90% gacha. Tuberkulyoz infeksiyasi paytida plevra ekssudati T-limfotsitlarning ustunligi bilan tavsiflanadi, ular MBT antigenlari bilan o'zaro ta'sirlashganda IFN- g hosil qiladi va shuning uchun uning ekssudatda aniqlanishi tuberkulyoz plevritning diagnostik belgisi bo'lib xizmat qilishi mumkin.

Kislota chidamli bakteriyalar plevra suyuqligi tekshiruvlarining 20-30 foizida va plevra biopsiyasi namunalarining 50-80 foizida aniqlanadi. Mikobakteriyalarni aniqlash uchun polimeraza zanjiri reaksiyasidan foydalanganda ham sezgirlik 78% dan oshmaydi [33].

Shu bilan birga, plevra suyuqligida juda sezgir biokimyoviy markerlar mavjudligi ma'lum, ularning kontsentratsiyasini aniqlash TP ning differentsial tashxisini sezilarli darajada osonlashtirishi mumkin [16]. Shunday qilib, Micobacterium tomonidan antijenik stimulyatsiyaga javoban Organizmdagi tuberkulyoz kasalligida hujayra vositachiligida immunitet faollashadi, uning muhim qismi T-limfotsitlar tomonidan interferon- g (INF-g) ishlab chiqarishdir . INF-g mikobakteriyalarga qarshi qaratilgan makrofaglarning fagotsitar faolligini oshirishga qodir , bu esa LT fonida uning ortiqcha ishlab chiqarilishiga olib keladi [34].

TPning differentsial diagnostikasi odatda plevral biopsiya va torakoskopiya kabi invaziv muolajalarni o'z ichiga oladi [11, 42]. Ushbu manipulyatsiyalar tibbiy xodimlarning maxsus mahoratini talab qiladi va bemorning ahvolini yomonlashtirishi mumkin. Natijalarni olish uchun zarur bo'lgan yuqori xarajat va uzoq vaqt diagnostikaning "oltin standarti" hisoblangan plevral biopsiya va bakteriologik usulning samaradorligini yanada pasaytiradi [28]. TPni tashxislashning qiyinligi an'anaviy usullarning nisbatan past sezuvchanligi bilan to'ldiriladi.

**Adenozindeaminaza va uning tuberkulyozli plevrit tashxisidagi ahamiyati.** Tuberkulyoz kasalligi etiologiyasining plevral ekssudatini tashxislash uchun mumkin bo'lgan biokimyoviy belgilardan biri plevra suyuqligidagi adenozin deaminaza (ADA) faolligini aniqlash bo'lishi mumkin . A D A fermenti barcha sutemizuvchilar to'qimalarining hujayralari sitoplazmasida mavjud bo'lib, ularning rivojlanishi va faoliyatida muhim rol o'ynaydi. U purin almashinuvida ishtirok etadi va adenozin va 2-deoksiadenozinning mos ravishda inozin va deoksinozinga dezaminlanishini katalizlaydi . ADA ning bir nechta izoenzim shakllari mavjud , ular orasida eng muhimi ADA1 va ADA2. ADA1 izoenzimi tananing barcha hujayralarida,

lekin eng yuqori konsentratsiyada limfotsitlar va monotsitlarda mavjud. ADA2 izoenzimi faqat monositlar va makrofaglarda mavjud [ 3-6 ].

TP bilan ogʻrigan bemorlarning plevra suyuqligida ADA faolligi va IFN- g konsentratsiyasi ortishi aniqlandi [28, 31, 37]. Biroq, maʼlum boʻlishicha, ushbu testlarning diagnostik ahamiyati aholi orasida tuberkulyoz kasalligining tarqalishiga, shuningdek, aholining oʻziga bogʻliq. Shunday qilib, osiyoliklar orasida ADA faolligining biroz pastroq boʻlishi uni tuberkulyoz kasalligini tashxislash uchun ushbu populyatsiyada aniqlashning maqsadga muvofiqligini shubha ostiga qoʻyadi [26].

### **Silli ekssudativ plevritni davolash usullarini optimallashtirish.**

Tuberkulyoz kasalligi bilan ogʻrigan bemorlarni davolash boʻyicha toʻplangan tajriba, yaxshi anatomik va funktsional natijalar bilan qisqa vaqt ichida tiklanishni taʼminlash uchun etiotrop va patogenetik terapiyani birlashtirish zarurligini ishonchli tarzda koʻrsatdi [25].

Oʻpka tuberkulyozining oʻtkir bosqichida tabiiy va sunʼiy proteinaz ingibitorlaridan samarali foydalanish boʻyicha yetarli maʼlumotlar mavjud . Klinik amaliyotda eng koʻp ishlatiladigan protein ingibitori kontrikaldir . Kontrikalni qoʻllash mastlik alomatlarini tezda bartaraf etish, qon miqdorini normallashtirish, boʻshliqlarning abasilatsiya va yopilish vaqtini qisqartirish , pnevmofibrozo rivojlanishini kamaytirish imkonini beradi [22, 36, 38]. Ammo, tomir ichiga yuborilganda, proteinaz ingibitorlarini taʼsiri buyraklar tomonidan tez yoʻq qilinishi tufayli qisqa muddatli boʻladi, ularning taʼsirlangan hududda etarli konsentratsiyasi taʼminlanmaydi va qon ivishining kuchayishi, tromboz hosil boʻlishi va paydo boʻlishi uchun sharoitlar yaratilishi mumkin. [21, 34, 39].

Nafas olish funksiyasi, gemostaz koʻrsatkichlari yoki jarayonning immunologik xususiyatlari haqida maʼlumot yoʻq . Silli plevrit bilan ogʻrigan bemorlarda traxeobronxial daraxtning holati, traxeobronxial daraxtning holati va tashqi nafas olish funksiyasi oʻrtasidagi bogʻliqlik oʻrganilmagan, TP bilan ogʻrigan bemorlarda yurak-qon tomir tizimining holati haqida maʼlumot yoʻq.

Eksudativ plevritning etiologik diagnostikasi masalalari toʻliq koʻrib chiqilmagan, Perm viloyatida tuberkulyoz kasalligi bilan ogʻrigan bemorlarda ekssudat, bronxoalveolyar suyuqlik va qon plazmasidagi adenozin deaminaza koʻrsatkichlari toʻgʻrisida maʼlumotlar yoʻq . Plevra qatlamlarining morfometriyasi oʻtkazilmagan, morfologik variantlarning kasallikning klinik xususiyatlari va kechishi bilan bogʻliqligi oʻrganilmagan.

Zamonaviy tuberkulyoz ekssudativ plevritni yaqin va uzoq muddatli davolash samaradorligi oʻrganilmagan. Shu bilan birga, tuberkulyoz kasalligining aniq salbiy patomorfozi va dori-darmonlarga chidamliligi oshishi tufayli tuberkulyoz kasalligining

ekssudativ plevritini davolash samaradorligining pasayishi va uning surunkaliligi chastotasining oshishi kutilishi kerak. Bu shoshilinch ravishda tuberkulyoz kasalligini davolash rejasida yangi patogenetik usullarni ishlab chiqish va amalga oshirishni talab qiladi ekssudativ plevrit, immunologik himoyani oshirish va traxeobronxial daraxtni sanitarizatsiya qilishga qaratilgan.

Bemorning tanasiga o'ziga xos kimyoterapiya preparatlarini kiritishning yangi usullarini o'rganish va joriy etish, birga keladigan kasalliklarni davolashni optimallashtirish kerak, bu davolashning asosiy kursining eng qimmat statsionar bosqichini qisqartiradi.

Yuqoridagilardan kelib chiqqan holda, tuberkulyoz kasalligidan kasallanish va o'lim ko'rsatkichlarining doimiy o'sishi davrida tuberkulyoz ekssudativ plevritni o'rganish zarurati juda dolzarbdir.

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## ЭМБРИОНАЛЬНОЕ РАЗВИТИЯ РОТОВОГО-АППАРАТА И ПОЯВЛЕНИЕ АНОМАЛИЙ ВОЛЧЬЯ ПАСТЬ И ЗАЯЧЬЯ ГУБА, И ИХ ПРОФИЛАКТИКА

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***Аннотация:** Цель статьи заключается в том, чтобы предотвратить появление таких аномалий развитие во внутри утроба либо заранее знать о последствиях таких явлений что может привести к различным дисфункциям систем и тем самым в дальнейших порогах в жизни. В статье предлагается общий обзор эмбрионального развития.*

***Ключевые слова:** эволюция, развития, филогенез, ротовая бухта, порок развития, мутация*

## OG‘IZ BO‘SHLIG‘INING EMBRONAL RIVOJLANISHI VA KLEFAPAL VA LAB YORIQLARI ANOMALIYASINI KO‘YISHI VA ULARNING PROFILAKTIKASI

***Annotatsiya:** Maqolaning maqsadi bachadonda bunday rivojlanish anomaliylarining paydo bo‘lishining oldini olish yoki tizimlarning turli xil disfunktsiyalariga olib kelishi mumkin bo‘lgan bunday hodisalarning oqibatlarini oldindan bilish va shu tariqa hayotning keyingi chegaralarida. Ushbu maqola embrion rivojlanishining umumiy ko‘rinishini taqdim etadi.*

***Kalit so‘zlar:** evolyutsiya, rivojlanish, filogeniya, og‘iz bo‘shlig‘i, malformatsiya, mutatsiya.*

## EMBRYONAL DEVELOPMENT OF THE ORAL APPARATUS AND THE APPEARANCE OF ANOMALIES CLEPHAPAL AND Cleft LIP, AND THEIR PREVENTION

***Abstract:** The purpose of the article is to prevent the occurrence of such developmental anomalies inside the womb or to know in advance about the consequences of such phenomena, which can lead to various dysfunctions of systems and thereby in further thresholds in life. This article offers a general overview of embryonic development.*

***Key words:** evolution, development, phylogeny, oral bay, malformation, mutation.*

На сегодняшний день мы можем видеть что развитие человека это кое-что уникальное и обусловлено многими фактами. Если изучить само филогенез человека, то станет более понятнее на сколько эволюционировало всё то, что было у предшественников<sup>1</sup>. Многие исследования уже показали на сколько эта тематика может быть столь актуальна в современном мире, где технологии опережают само человечество.

В развитии зубочелюстных аномалий играют существенную роль самые разнообразные факторы: наследственные врожденные и приобретенные.

Жевательный аппарат прошел длительный эволюционный путь развития от хрящевых рыб до человека. При этом в процессе филогенеза он проходит две стадии: первичную и вторичную.

В процессе эволюции идет усиленная редукция первичного жевательного аппарата и первичного сустава. Фактически на смену примитивного зубочелюстного аппарата развивается новый вторичный жевательный аппарат у млекопитающих. Этот жевательный аппарат приобретает новые признаки.

Межчелюстные кости срастаются с челюстными, твердое небо образуется за счет межчелюстных, челюстных и небных костей. Нижняя челюсть представлена только одной зубной костью, восходящая ветвь которой сочленяется через суставной отросток с чешуйчатой костью, образуя вторичный сустав.

(2-3 недели) Образование первичного рта. На переднем конце зародыша из эктодермы образуется углубление - ротовая бухта (стомодеум), которое еще сильнее углубляется до встречи с энтодермой (первичной кишкой), их разделяет глоточная перепонка. На 3 неделе глоточная перепонка разрывается и образуется первичный рот, имеющий сообщение с первичной кишкой. Незадолго до этого образуется карман Ратке - дорсальный вырост эктодермы верхней части первичного рта - закладка передней и средней долей гипофиза.

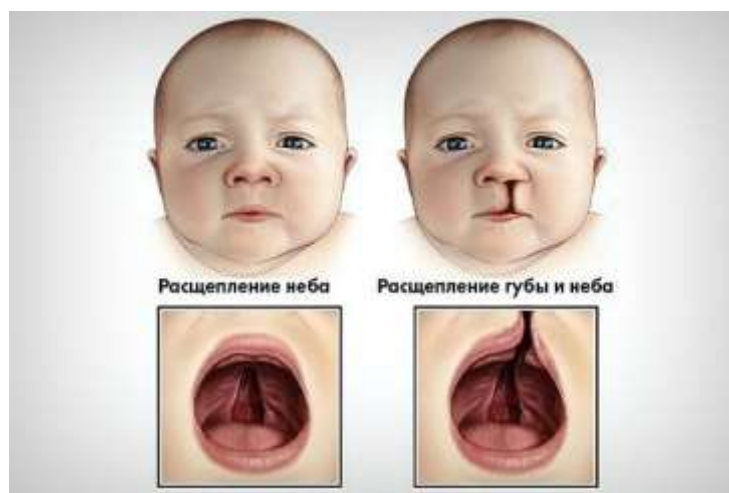
**Волчья пасть (палатосхизис)** – врожденный порок развития челюстно-лицевой области, представляющий собой расщепление мягкого и твердого нёба, приводящее к нарушению процессов дыхания, питания, звукообразования. Дефект формируется в результате задержки срастания отростков верхней челюсти с непарной костью лицевого отдела черепа – сошником. С волчьей пастью в мире рождается 0,1% новорожденных.

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1. <sup>1</sup> <http://nsmu.ru/lib/readers/gistologiya-embriologiya-tsitologiya.php>

2.  
3.

Формирование расщепления нёба обусловлено генетически: при работе с данными расшифровки генома человека британские ученые в 1991 году обнаружили ген, ответственный за развитие волчьей пасти – это измененный ген TBX22, расположенный в X-хромосоме. Факторами, приводящими к изменениям на генном уровне и способствующими формированию нёбного дефекта, служат тератогенные воздействия на плод. На сегодняшний день четко прослежена зависимость между формированием заячьей губы и волчьей пасти у ребенка и пристрастием будущей матери к алкоголю, табакокурению и наркотикам.



Наличие расщелины нёба нарушает нормальное функционирование верхних дыхательных и пищеварительных путей, развитие речи и слуха, а также может вызывать снижение самооценки личности ребенка. У детей, имеющих волчью пасть, изменена речь в связи с нарушением процесса правильного формирования звуков.

**Заячья губа, или хейлосхизис** — это порок развития челюстно-лицевой области, заключающийся в не заращении верхней губы. С таким дефектом рождаются около 0,04% детей, причем чаще мальчики.



Причины появления заячьей губы



За формирование заячьей губы несут ответственность генетические нарушения, а точнее – мутация гена TBX22. Среди факторов, провоцирующих мутацию, можно выделить:

- употребление антибактериальных препаратов во время беременности;
- сильные стрессы, эмоциональные переживания;
- токсикоз беременных;
- инфекционное/радиационное воздействие;
- употребление наркотиков;
- курение, злоупотребление спиртным.

У пациентов с заячьей губой чаще развивается кариес и ортодонтические проблемы.

Часто предполагают дефект еще во время беременности, во время УЗИ. Но оценить степень расщепления неба можно только после рождения малыша. Во время родов есть опасность попадание околоплодных вод через расщелину в дыхательные пути, поэтому врачам лучше заранее знать о патологии.

Профилактика таких аномалии может включать в себя:

Желательно планировать беременность. Тогда женщина будет ее ожидать и на самых важных ранних этапах избежит случайного приема токсичных медикаментов, курения, алкоголя. Это часто случается, если женщина еще не знает о беременности.

Важно принимать витамины, назначенные гинекологом, планово-обследоваться. Избегать скоплений людей и тепло одеваться, поскольку в первые недели иммунитет матери очень уязвим.

**Выводы:** конечно же не многие из людей знают о возможности и рисках возникновений патологии у эмбриона. Возможно если глубже подходить к этому вопросу, то можно прийти к выводу что для начала человек должен вести здоровый образ жизни, пить необходимые витамины и минералы как минимуму. Суть этого всего в том, что когда человек здоров то здоров и его поколения.

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## ATTRIBUTIVE PHRASES IN TRADITIONAL AND COGNITIVE ASPECTS OF LEARNING ENGLISH LANGUAGE

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**Annotation:** *Modern people cannot imagine a world without the use of language. "We pass absolutely all the knowledge that we receive through the network of language," and then we transmit it to each other "as a result of subject-specific practical activity". Moreover, literally every time, uttering this or that word, phrase or sentence, a person, as if from a blank slate, is engaged in the generation of meanings, choosing the means of their representation. One of the means of representing generated meanings about any object of reality at the language level is an attributive phrase.*

**Key words:** *cognitive, aspect, study, meaning, discourse, classification, traditional, linguistics.*

### INGLIZ TILINI O'RGANISHNING AN'ANAVIY VA KOGNITIV ASSPEKTIDAGI ATRIBUTIV FRAZALARI

**Annotatsiya:** *Zamonaviy odamlar dunyoni tildan foydalanmasdan tasavvur qila olmaydi. "Biz olgan barcha bilimlarimizni til tarmog'i orqali o'tkazamiz", so'ngra ularni "ma'lum bir mavzu bo'yicha amaliy faoliyat natijasida" bir-birimizga uzatamiz (o'sha erda). Bundan tashqari, tom ma'noda har safar u yoki bu so'z, ibora yoki jumlani talaffuz qilganda, odam xuddi bo'sh varaqdan chiqqandek, ma'nolarni yaratish, ularni ifodalash vositalarini tanlash bilan shug'ullanadi. Har qanday voqelik ob'ekti haqida hosil bo'lgan ma'nolarni til darajasida ifodalash vositalaridan biri atributiv iboradir.*

**Kalit so'zlar:** *kognitiv, aspekt, o'rganish, ma'no, nutq, tasnif, an'anaviy, tilshunoslik.*

## АТРИБУТИВНЫЕ ФРАЗЫ В ТРАДИЦИОННЫХ И КОГНИТИВНЫХ АСПЕКТАХ ИЗУЧЕНИЯ АНГЛИЙСКОГО ЯЗЫКА

*Аннотация:* Современные люди не могут представить мир без использования языка. «Абсолютно все знания, которые мы получаем, мы передаем через сеть языка», а затем передаем их друг другу «в результате предметно-практической деятельности» [Там же]. Более того, буквально каждый раз, произнося то или иное слово, фразу или предложение, человек как бы с чистого листа занимается порождением смыслов, выбором средств их репрезентации. Одним из средств представления сформированных значений о любом объекте действительности на языковом уровне является атрибутивная фраза.

*Ключевые слова:* когнитивный, аспект, исследование, значение, дискурс, классификация, традиционное, лингвистика.

The purpose of this work is to study the essence of the concept of “attributive phrase” from traditional and cognitive points of view with an attempt to determine its meaning for modern linguistics using the material of the English language.

The cognitive approach to the study of attributive phrases makes it possible to look at attributive constructions already known in traditional linguistics from the point of view of their modeling and organization at the mental level in the form of knowledge formats, which indicates the scientific novelty of the research being carried out. From these positions, it is logical to consider attributive phrases as an object of research and analyze the possibilities of formatting the knowledge behind these linguistic units using the material of the English language. Thus, in the light of the new paradigm that cognitive linguistics offers today, the issue raised in this article about a new understanding of the functioning of attributive phrases in language and in speech can be considered relevant.

The results of the study are theoretically valuable, since they contribute to the development of the theory of attributive phrases. In addition, they have practical significance and can be used in the development of lecture courses on vocabulary and grammar of the English language. Scientists from different years and even centuries have been studying attributive phrases.

Ideas about simple attributive judgments, in which something must belong to something, go back to Aristotle’s doctrine of logic. A logical pattern works in a simple judgment: a given thing (event or subject referred to in the judgment) may have a given attribute (understood by Aristotle as properties or states) potentially or actually.

If the semantic core of any object consists of its characteristic features, then the process of nominating it will look like an act of assigning to it such qualities and properties that would help to distinguish it from a number of similar objects and point to it without the need to constantly refer to the real-life thing behind it. by this name. Thus, in the Indo-European and Arabic linguistic traditions, a single category of ancient name existed for a long time. This was facilitated by the then current method of identifying ancient parts of speech, based on the morphological analysis of words and phrases.

“The traditional scheme of parts of speech survived until the 16th-17th centuries, after which it underwent some modifications.” By this time, it was established that the morphological and semantic properties of nominal parts of speech are different, from which arises the need to differentiate them: if nouns (being things or substances) exist on their own, then adjectives (being accidents or attributes) can only exist through nouns (substances). Thus, the initial indivisibility of the ancient name was subjected to classification, which resulted in the appearance of nominal parts of speech.

The concept of “attribute” goes back to the Latin *attributum* - attributed, given. O. S. Akhmanova defines this phenomenon as “the same as a definition,” and the word “attributive” is “relating to a definition, acting in the function of a definition, possessing the properties of a definition.” A. A. Shakhmatov proposes to consider an attribute as part of “what is common with the subject or object of perception that it defines,” therefore attributive relations should be understood as “properties between representations that are part of one complex, undivided representation.” Thus, the philosophical definition of the quality of a thing in the form of a set of properties indicating its “functional purpose both in interaction with other things and with the cognizing subject” corresponds to the grammatical category of attribute.

Thanks to the emerging relationships between words belonging to different parts of speech, connections arise at the morphological, lexical-semantic and syntactic levels, which leads to the formation of various kinds of phrases. Interest in this grammatical category has been observed since the 17th century. B. Johnson in his “Grammar,” without using the term “word combination,” made the assumption that within the framework of a combination of words, specific grammatical relations appear. One century later, J. Brightland, studying the phrase, noted that in grammatical relationships there must be a syntactic connection between words. Similar to Russian linguists of the 19th and early 20th centuries. L. Bloomfield understands a phrase as a syntactically organized group of words. Note that L. Bloomfield’s theory was significantly expanded in subsequent years, and in general there were other theories that offered their own interpretations of the essence of the phrase, for example, the

works of J. Ries, E. Kreising or O. Jespersen. Thus, considering phrases, researchers identified the difference between a phrase and a sentence, a phrase and a word, and came to the conclusion that a phrase is a special structural unit of language that has components inherent in both the word and the sentence.

In the middle of the 20th century, F. F. Fortunatov introduced the concept of “phrase,” which can be “finished” or “unfinished” depending on whether it is a building material for a sentence or indicates any object of reality. Am. speeches in immediate proximity form a phrase, but only those that are combined in thought... In order for two words to form a phrase, they must be combined simultaneously both in speech and in thought. A phrase as a word is an external-internal, physical-psychological unity.”

V.V. Vinogradov, on whose work many language researchers later relied, made a significant contribution to the development of the doctrine of word combination. He defined a phrase as “a product of the semantic distribution of a word,” which, like a word, is the basis used in the process of linguistic communication, and, like a sentence, tends to realize multiple meanings. However, in the theory proposed by the author, the phrase and the sentence are distinguished due to the fact that these are “concepts of different semantic series and different stylistic planes. They correspond to different forms of thinking. A sentence is not at all a type of phrase, since there are words of a sentence. But even in its inner essence, in terms of its constructive features, it cannot be directly derived from the phrase.”

By the end of the 60s of the 20th century, a generally accepted concept of the phrase and its types had developed in Russian linguistics, in which it was established that the phrase is a unit of syntax and has a certain structure. And, since the phrase exists semantically holistically, it represents a single semantic content necessary to designate an object, action or quality.

So, phrases began to be studied in more detail, received their description, a place in the system of language grammar and the possibility of identifying functionally different subclasses, one of which are attributive phrases (along with verbal, adverbial, objective and subjective phrases). Thus, the history of the study of attributive constructions turned out to be closely connected with the emergence and formation of such a syntactic unit as a phrase.

At this stage of the study, it seems natural to try to give our own definition of the attributive phrase. In order to formulate it, it is necessary to find out the main characteristics of the type of phrases under consideration, which are distinctive markers for the syntactic category under study.

There are many classifications of attributive phrases by various authors. For example, V.D. Arakin, in works devoted to the comparative typological analysis of the

English and Russian languages, describes an attributive phrase as a combination of two or more words agreed in gender, number, case and determinativity, which are characterized by the presence of both prepositive and and postpositive grammatical structures. In English, this is a certain two-term or three-term model, which is based on a nominative function that arose due to the syntactic connection “adjacent”, which is represented in a certain way in speech. From what we can conclude, that the classification of attributive phrases should be built on the basis of the following set of features: the nature of syntactic relations, the way of expressing syntactic relations and the position of the dependent word in relation to the main one.

According to another researcher V.V. Burlakova and her colleagues, the basis for the classification of any word combinations is the analysis of semantic relationships that arise between the elements of a noun phrase. She offers some of them for consideration using the example of the attribute construction Noun + Noun:

- 1) relationship between part and whole: the bathroom door (bathroom door);
- 2) location: the window seat;
- 3) the material from which the item is made: silver clock (silver watch);
- 4) temporal relations (temporal correlation): the Sunday evening (Sunday evening);
- 5) comparative relations: sapphire sky (sapphire sky);
- 6) purpose: the waste-paper basket (paper basket);
- 7) characteristic: pine forest (pine forest);
- 8) accessory: falcon eye (hawk eye);
- 9) source: radio noise.

There are other, no less interesting and original approaches to the classification of attributive phrases. These include the studies of V. Ya. Plotkin, who defines the phrase itself through the concept of “syntagma”. The classification capabilities of attributive phrases are based on the connection between the elements of the phrase, called adjacency, the distinctive feature of which is the maximum positional convergence in the process of semantic and grammatical association of the adjoining and leading words. Against the background of the presented type of connection, the author identifies two important parameters for the classification of attributive phrases:

- 1) Definition of preposition or postposition in a phrase;
- 2) Identification of the force of adjunction, which “manifests itself in a group of words - a subordinating syntagma, around the top of which - its leading member - the adjuncts inherent in it are located in accordance with the force of adjunct inherent in each adjunct.”

The author reinforces this classification with an example of parsing the sentence: “Happy little children sing songs merrily” (“happy little children sing songs merrily”), in which one of the phrase groups selected for classification is the nominal syntagma “happy little children”. In the analyzed phrase, the vertex “children” stands out, which “attracts” the adjuncts “happy” and “little” to itself. As the researcher notes, “the definition with the meaning of the more stable age characteristic “little” is more closely related than the definition of the variable characteristic of the emotional state “happy,” which makes it impossible to use these definitions in a different sequence in English.”

The problem of classification of attributive phrases was illuminated most thoroughly by N. A. Kobrina and her colleagues. In the work devoted to the syntax of the English language, two parts can be distinguished: the definition of the concept of “attribute” and the methods of its expression. The author considers an attribute as a minor member of a sentence that can characterize a person or object, adding semantic load to the main word in a phrase through quality, quantity or description of a situation. In this case, the emphasis is placed on the fact that the attribute can become an element of only a noun phrase. In this study, the classification of attributive structures is multifaceted, since it includes the following parameters:

1) Ways of expressing attributive phrases, which include various combinations of nominal parts of speech, morphological means of combining words into attributive constructions, the possibility of transitioning the semantic role from an object to an attribute, special techniques for changing the forms and sizes of phrases using gerunds, infinitives, adverbs, adverbs phrases and whole sentences;

2) Positional changes in the position of attributes in a phrase, when the speaker has the opportunity to place a dependent word before or after the word being defined;

3) Analysis of the types of connections between attributes and main words, which includes inseparable attributes with the “adjacent” connection, as well as attributes separated by commas.

These parameters help to cope with the understanding of the subject and object of study at the linguistic level, however, since the 60s of the 20th centuries. The linguistic science has not stopped developing, and therefore today it allows us to look at attributive phrases from other positions, taking into account extralinguistic factors that influence significant influence on understanding the place and role of attributive phrases in the system of any language, in particular English.

An attributive phrase is similar to a word, since it is also capable of reflecting a certain fragment of reality and indicating it. It follows from this that the attributive phrase is one of the ways to nominate objects in the surrounding world. In addition, an attribute within the attribute structure is “a means of summarizing information and

isolating significant qualities (properties) of the defined concept, i.e. a specific object as a fragment of reality." This understanding of the structure under study makes it possible to call it a unit of a complex nomination.

In the second half of the 20th century, as an alternative to traditional research in the field of linguistics and linguistics, a new branch of language research began to actively develop, called cognitive linguistics, the focus of which was the relationship between cognitive (cognitive) and linguistic structures. Cognitive linguistics "relies on the study of the conceptual and empirical (based on human experience) basis of linguistic categories and concepts.

In addition, the format of knowledge presupposes the presence of a certain structural organization, that is, its own content and structural typology. It follows that any linguistic category can be considered as a conceptual structure that combines knowledge of the objects themselves and knowledge of the principles and mechanisms of their association. Modern English literature, in all its diversity of genres, has its own style characteristics, manifested in the conciseness of presentation and the density of information. Attributive phrases make it possible to achieve this goal, since they are a way to make speech concise and more concentrated, thanks to which their study has not lost its significance for many years. The main task of attributive constructions is to form in the reader a certain assessment of ongoing events through the display of signs, properties or qualities inherent in the described object of reality. L.N. Shelontseva drew attention to the use of attributive phrases in A. Murdoch's novel "The Sea, the Sea". In particular, A. Murdoch, describing the interior of the house, draws the reader's attention to the vase: "a large remarkably hideous green vase" ("a large, surprisingly disgusting green vase"). The phrase reveals the dominant sense of the negative quality of the object, its external disharmony.

Examples show that attributive phrases help in the development of the narrative, since at the semantic level they perform nominative, communicative and expressive functions, participating in the processes of nomination of the surrounding space and entering into theme-rhematic relations at the text level. "Identification of an object is achieved through the interaction of a number of word combinations, each of which characterizes the object from a new perspective, thereby expanding and complementing the existing information" about it.

For adequate production, perception and interpretation of attributive phrases, the car and the reader turn to formatting knowledge about these nominative units, which means taking into account the nature and categories of such constructions and, in particular, the semantic connections within the attributive phrase. In addition, "in the course of interpretation, a person can represent the world in language through certain



linguistic units, depending on the nature of the projection of the individual conceptual system onto the existing collective knowledge, which is the result of concepts and models of conceptualization and categorization created within the framework of previous types of cognitive activity of people.”

On this basis, a systematic description of the totality of categorical knowledge behind attributive phrases in the English language as a special format of knowledge, as well as the identification of the interpretive capabilities of this format during its implementation in oral or written speech, seems promising. Summarizing the study, it is worth noting that the attributive phrase has received a large number of definitions during its existence. From the standpoint of traditional linguistics, an attributive phrase is understood by researchers as a kind of verbal construction consisting of a defined component and words defining it. At the same time, representatives of cognitive linguistics consider the attributive phrase as a unit of complex nomination, which at the mental and linguistic levels reflects and points to a certain fragment of reality.

Thus, this article, using methods of linguistic observation and generalization, made it possible to present an overview of the results of theoretical works devoted to the issues of attributive constructions, and to give our own definition of an attributive phrase based on the study of the features inherent in these linguistic units.

As the analysis of linguistic material has shown, the role of attributive phrases in English artistic discourse is quite important, since this type of phrases takes an active part in the processes of nominating objects in the surrounding world. Each attributive phrase introduced into a literary text complement and details the existing information about a particular object of reality, forming in readers the attitude towards any character, object or event necessary for the author. Such an artistic effect becomes achievable thanks to the flexibility of human thinking, which lies in the free formatting of the knowledge behind attributive constructions.

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## YURAK ISHEMIK KASALLIGI FONIDA RIVOJLANGAN KARDIYOMIYOPATIYANI KECHISHINI O'ZIGA XOSLIGI

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### ANNOTATSIYA

*Ishemik kardiomyopatiya - o'ziga xos kardiomyopatiyaning bir varianti, u uzoq muddatli ishemiya fonida miyokarddagi diffuz strukturaviy o'zgarishlar bilan namoyon bo'ladi. Patologiya anamnezida ishemik yurak kasalligi bor va miyokard infarkti o'tkazgan kasallarda yuzaga keladi. Klinik jihatdan kasallik surunkali yurak etishmovchiligi sifatida namoyon bo'ladi, bemorlarning yarmida stenokardiyaga xos og'riq epizodlari kuzatiladi. Diagnostika qilish uchun EKG, ExoKG, koronar angiografiya va boshqa invaziv usullardan foydalaniladi. Davolash yurak funksiyasini konservativ davolash va miyokardning jarrohlik revaskulyarizatsiyasidan iborat.*

***Kalit so'zlar:** ishemiya, kardiomyopatiya, gibernatsiya, yallig'lanish, chap qorincha, o'ng qorincha, miyokard infarkti, delyatatsiya.*

### CHARACTERISTICS OF CARDIOMYOPATHY DEVELOPED ON THE BACKGROUND OF ISCHEMIC HEART DISEASE

#### ABSTRACT

*Ischemic cardiomyopathy is a variant of specific cardiomyopathy, which is manifested by diffuse structural changes in the myocardium against the background of long-term ischemia. It occurs in patients with a history of ischemic heart disease and myocardial infarction. Clinically, the disease is manifested as chronic heart failure, in half of the patients, episodes of angina-like pain are observed. ECG, ExoKG, coronary angiography and other invasive methods are used for diagnosis. Treatment consists of conservative treatment of cardiac function and surgical revascularization of the myocardium.*

***Keywords:** ischemia, cardiomyopathy, hibernation, inflammation, left ventricle, right ventricle, myocardial infarction, dilatation.*

## UMUMIY MA'LUMOT

“Ishemik kardiomyopatiya” (IKMP) atamasi 1970 yildan beri JSST tomonidan tasdiqlangan va MKB 10 ga kiritilgan. Xorijiy tibbiyot adabiyotlarida keng tarqalgan, shu bilan birga kardiologiya sohasidagi ba'zi mahalliy mutaxassislar shunga o'xshash tarkibiy o'zgarishlarni tasvirlash uchun "aterosklerotik kardioskleroz" nozologiyasidan noto'g'ri foydalanadilar. IKMP barcha turdagi kardiomyopatiyalarning 11-13% ni egallaydi, eng yuqori ko'rsatkich 45-55 yoshda bo'ladi. Bemorlarning 90% dan ortig'i erkaklardir.

## SABABLARI

IKMP o'ziga xos ikkilamchi kardiomyopatiyalarga ishora qiladi, u faqat yurak-qon tomir kasalliklari mavjud bo'lganda rivojlanadi. Asosiy etiologik omil koronar yurak kasalligi (YuIK). Surunkali ishemiya bilan og'rikan bemorlarning 5-8 foizida kardiomyopatiya paydo bo'ladi, IKMP rivojlanish xavfi yurak ishemik kasalligining og'irligiga bog'liq. Patologiyaning sababi ham o'tkir ishemiya epizodlari bo'lib, ular klinik jihatdan miyokard infarkti bilan namoyon bo'ladi.

## XAVF OMILLARI

Ishemik kardiomyopatiya xavfi yurak ishemik kasalligi bilan og'rikan barcha bemorlarda shakllanmaganligi sababli, xavf omillari katta ahamiyatga ega. Asosiylari:

- dastlabki tekshiruv vaqtida IKMP bilan og'rikan odamlarning 30-35 foizida uchraydigan "ishemik anamnez" mavjudligi;
- metabolik sindrom belgilari, shu jumladan glyukozaga tolerantlikning buzilishi, ortiqcha tana vazni, qandli diabet;
- yomon odatlarning mavjudligi - uzoq vaqt chekish, spirtli ichimliklarni iste'mol qilish, achchiq qahva;
- markaziy va periferik arteriyalarning aterosklerozini rivojlanishi.

## PATOGENEZ

Ishemik kardiomyopatiyaning asosi miyokardning qon bilan ta'minlanishining buzilishi bo'lib, bu patologik reaksiyalar zanjirini qo'zg'atadi: nekroz, fibroz, to'qimalarning renin-angiotenzin tizimining faollashishi. Muhim rol o'ynaydi oldindan shartlash mexanizmi, bu yurak mushagining reperfuzyasi bilan ishemiyaning bir nechta epizodlaridan iborat. Ushbu jarayonning tez-tez takrorlanishi ATFga bog'liq nasoslarni faollashtiradi va ishemik shikastlanish chegarasini oshiradi.

Ishemik shikastlanish, shuningdek, interstitsial to'qimalarda buzilishlar sifatida namoyon bo'ladi. Yurak mushaklarining hujayralararo bo'shlig'ida doimo ko'p funktsiyali bazal hujayralari mavjud bo'lib, ular geparin, gistamin va neytral proteazlar majmuasini chiqaradi. Interstitsial sklerozning kuchayishi va miyokard

gubernatsiyasining rivojlanishi matritsa metalloproteinazalarining faollashishi bilan bog'liq.

Morfologik jihatdan, yurak ishemik kasalligi fonida kardiomyopatiya bilan og'riq bemorlarning yuragi 500-700 g gacha kattalashadi va uning bo'shliqlarining umumiy kengayishi kuzatiladi. Bunday holda, chap qorincha devorining nomutanosib yupqalashishi va yurak mushagining katta o'choqli fibroz o'choqlari kuzatiladi. Koronar tomirlar katta qismining aterosklerotik zararlanishi, arterial stenoz va okklyuziya joylari hamda aortaning dastlabki qismlarida kalsifikatsiya bilan tavsiflanadi.

### **KARDIYOMIYOPATIYA BELGILARI**

Kasallikning asosiy ko'rinishi surunkali yurak etishmovchiligi bo'lib, IKMP bilan og'riq bemorlarning 100% da uchraydi. Birinchidan, u chap qorincha yetishmovchiligi bilan rivojlanadi, shuning uchun bemorlar jismoniy faoliyat davomida nafas qisilishi, yotganda nafas olish qiyinlashuvi va uzoq muddatli quruq yo'taldan shikoyat qiladilar. Agar kasallanish jarayoniga o'ng qorincha yetishmovchiligi ham qo'shilsa qo'l va oyoq oxirlarida shish paydo bo'ladi, o'ng qovurg'a ostida og'irlik va noqulaylik paydo bo'ladi.

Ishemik kardiomyopatiyaning 80% dan ortig'i aritmiya bilan kechadi. Bemorlar yurak faoliyatida notekis urishlarni sezishadi: yurak urishining kuchayishi, muzlash, "yurakning bo'g'izga tiqilish" hissi. Og'riq va noqulaylik ko'pincha ko'krakning chap tomonida paydo bo'ladi. Ritmning buzilishi umumiy holsizlik, jismoniy faoliyatga tolerantlikning pasayishi, namlik yuqori bo'lgan va issiq xonalarda kuchsizlanish hissi bilan namoyon bo'ladi. Bemorlar uyquchanlik va ishlashning yomonlashuvidan shikoyat qiladilar.

Ishemik kardiomyopatiya bilan og'riq odamlarning taxminan 50 foizida tez tez takrorlanib turuvchi stenokardiya xurujlarini boshdan kechiradi. Bu xurujlar jismoniy zo'riqanda yoki kuchli stress fonida yuzaga keladigan yurak sohasidagi kuchli og'riq sifatida namoyon bo'ladi. Og'riq davomiyligi 15-20 daqiqadan ortiq davom etmaydi va nitroglitserin qabul qilganda og'riq tez bartaraf bo'ladi. Stenokardik xurujlar bilan birga yurak etishmovchiligining rivojlanishi IKMPning o'ziga xos belgisi hisoblanadi.

### **ASORATLARI**

Ishemik kardiomyopatiya bilan uzoq muddat kasallangan bemorlarning 20-50% da tromboembolik asoratlar paydo bo'ladi: oyoq chuqur venalari trombozi, o'pka arteriyasining tromboemboliyasi. IKMP bilan kasallangan bemorlarning 30 % o'pka arteriyasining tromboemboliyasidan vafot etadi va bu holat o'limning asosiy

sabablaridan biri hisoblanadi. 22,9% hollarda markaziy venalarning trombozi, 8,2% hollarda kichik chanoq vena tomirlarining trombozi rivojlanadi.

IKMP yurak ritmi buzilishining og'ir shakllari bilan tavsiflanadi: bemorlarning 15-20% da bo'lmachalar fibrilyatsiyasi rivojlanadi, 10-15% da giss tutami oyoqchalari qamali va 5% holatlarda atrioventrikulyar qamal rivojlanadi. Umumiy yurak etishmovchiligi dimlanish sababli kelib chiqadigan gidroperikard, astsit, gidrotoraks, ichki organlarda dimlanishga xos o'zgarishlar va buyrak etishmovchiligi bilan namoyon bo'ladi.

### DIAGNOSTIKA

Shifokor - Kardiolog bemorni tekshirganda, undagi shikoyatlarning paydo bo'lish vaqti va sabablarini, anamnezda yurak-qon tomir kasalliklari mavjudligini va xavf omillarini aniqlash kerak. Instrumental tekshiruvda sog'lom yurak faoliyatiga xos bo'lmagan belgilar aniqlanadi. Ishemik kardiomyopatiyani tasdiqlash uchun quyidagi usullarni o'z ichiga olgan instrumental va laborator tekshiruvlar buyuriladi:

- **EKG.** Elektrokardiografiya natijalariga ko'ra, miyokard ishemiyasi, yurak xurujidan keyingi chandiq va ritm buzilishi belgilari aniqlanadi. Agar bemor o'zini qoniqarli his qilsa, stressli sharoitlarda ishemik shikastlanish darajasini va yurak faoliyatini aniqlash uchun stress testlarini o'tkazish mumkin.

- **ExoKG.** Ultratovush diagnostikasi chap qorincha kengayishini aniqlash, zarb xajmini baholash (IKMPda 35% dan kam) va miyokardning qisqaruvchanlik faoliyatini baholash uchun buyuriladi. Yurak mushaklarining hayotiylikini baholash va ishemiyaning yashirin shakllarini tashxislash stress exokardiografiya yordamida amalga oshiriladi.

- **Koronar angiografiya.** Ishemik kardiomyopatiyada koronar tomirlarni rentgen-kontrastli tekshirishda kamida bitta koronar arteriya katta shoxchasining 50% yoki undan ko'proq torayishi aniqlanadi. Koronar angiografiya stenoz belgilari, aterosklerotik pilakchalar, tromboz joylari va tomir devorlarining kalsifikatsiyasini ko'rsatadi.

- **Miyokard sintigrafiyasi.** Taliy-201 bilan rentgen diagnostikasi miyokardning gubernatsiyalangan joylarini aniqlash va organik o'zgarishning og'irlik darajasini aniqlash uchun zarur. Agar ma'lumotlarning mazmuni yetarli bo'lmasa, usul pozitron-emissiyon tomografiyasi bilan to'ldiriladi.

- **Laboratoriya diagnostikasi.** Tashxis qo'yishda qonning umumiy biokimyoviy tekshiruvi, qondagi xolesterin miqdori (lipid profili), jigar fermentlari (transaminaza) darajasi va miyokardning qondagi maxsus markerlari kabi tekshiruv natijalari talab qilinadi. Qon ivish qobiliyatini baholash uchun koagulogramma buyuriladi.

## DIFFERENSIAL DIAGNOSTIKA

Ishemik kardiomyopatiyani dilyatatsion kardiomyopatiyadan (DKMP) ajratish kerak. Birinchi holda, bemor anamnezida stenokardik xurujlar, miyokard infarkti va yurak ishemik kasalligining boshqa ko'rinishlari qayd etiladi. DKMP odatda yurak-qon tomir belgilarining sababsiz rivojlanishi bilan tavsiflanadi. IKMPning o'ziga xos xususiyatlari yurak etishmovchiligining chap qorinchadan umumiy shaklga qadar rivojlanish ketma-ketligidir.

## KARDIYOMIYOPATIYANI DAVOLASH

### Konservativ terapiya

IKMP sababli rivojlangan yurak etishmovchiligini davolashda avvalambor dorilarsiz usuldan foydalaniladi. Bunda bemorlarga cheklangan tuz va suyuqlik bilan oson hazm bo'ladigan parhez taomlar, chekish va spirtli ichimliklarni iste'mol qilishdan voz kechish buyuriladi. Agar bemor jismoniy zo'riqishga chidamli bo'lsa, har kuni yurish va mumkin bo'lgan jismoniy faoliyat tavsiya etiladi. Yuqumli asoratlarni oldini olish uchun har yili gripp va pnevmokokk infeksiyasiga qarshi emlash tavsiya etiladi.

Ishemik kardiomyopatiya uchun farmakologik terapiya yurak-qon tomir yetishmovchiligi belgilarini bartaraf etishga va miyokardning funksional imkoniyatlarini yaxshilashga qaratilgan. Davolash uchun dorilar butun umrga beriladi, dori preparatlarini qo'llash sxemasi yurak yetishmovchiligining og'irligi va bemorning umumiy holatini hisobga olgan holda tanlanadi. IKMP uchun amaliy kardiologiyada quyidagi dorilar guruhlari qo'llaniladi:

- **APF ingibitorlari** - periferik qon tomirlarining qarshiligini pasaytiradi, kichik arteriya va tomirlarda qon oqimini yaxshilaydi, yurak ishini osonlashtiradi va zarb xajmini oshiradi.

- **Angiotenzin retseptorlari blokatorlari** - ta'sir qilish mexanizmiga ko'ra APF ingibitorlariga o'xshaydi, ammo bemorlar tomonidan yaxshi qabul qilinadi va kamroq nojo'ya ta'sirga ega.

- **Diyuretiklar** - to'qimalardagi shish va a'zoldagi dimlanishni kamaytiradi, aylanma qon hajmini normallashtiradi va yurak ishini osonlashtiradi.

- **Beta blokatorlar** - antiishemik va antiaritmik ta'sirga ega, miyokard qisqaruvchanligini yaxshilaydi va koronar arteriyalarga qon oqimini oshiradi.

- **Dezagregantlar** - qonning reologik xususiyatlarini yaxshilash va hayot uchun xavfli tromboemboliyaning oldini olish uchun ishlatiladi.

- **Kardioprotektorlar** Miyokard funksiyasini yaxshilash uchun vitamin komplekslari, inozin preparatlari, mikroelementlar va o'ziga xos metabolik ta'sirga ega bo'lgan boshqa vositalar buyuriladi.

## Jarrohlik

Yurak mushaklarining ish bajarish qobiliyatini saqlash maqsadida jarroxlik revaskulyarizatsiya amaliyotini qo'llash uning qisqaruvchanlik funksiyasini oshirish va bemorlarning hayot sifatini yaxshilash uchun tavsiya etiladi. Yurakdagi chandiqli o'zgarishlar katta bo'lsa revaskulyarizatsiya amaliyoti tavsiya etilmaydi. Kasallikning og'ir holatlarida yurak transplantatsiyasi tanlov operatsiyasi hisoblanadi. Hozirgi kunda zamonaviy usullardan biri yurakka biventrikulyar stimulyator (CRTD) muqobil ravishda qon aylanishini qo'llab-quvvatlovchi qurilmani o'rnatish imkoniyati ham mavjud.

## PROGNOZ VA PROFILAKTIKA

Medikomentoz yo'l bilan o'z vaqtida davolash, gibernatsiya zonalarini faollashtirish orqali miyokard funksiyasini qisman tiklashi mumkin. Kasallikning keyingi bosqichlarida yurak transplantatsiyasi yagona radikal davo hisoblanadi. IKMP ning oldini olish uchun yurak ishemik kasalligi xavf omillarini istisno qilish, yurak ishemik kasalligini erta aniqlash va qaytmas jarayonlar yuzaga kelishini oldini olish kerak.

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## VULVOVAGINIT BILAN OG‘RIGAN AYOLLARDA ZAMONAVIY DAVOLASH USULLARINI TASVIRI

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### ANNOTATSIYA

*Sharhda vuyvovaginit infeksiyasining etiologik agenti, uning klinik kechishi, shuningdek zamonaviy davolash sxemalari va ularning samaradorligini o‘rganishga bag‘ishlangan adabiyotlarni tahlil natijalari keltirilgan. Pastki qavatdagi jinsiy a‘zolar infeksiyalarining asoratlari, shu jumladan homiladorlik davrining asoratlari xam keltirilgan. Vulvovaginitni davolash bosqichlari ko‘rib chiqiladi, shuningdek homiladorlikning trimestriga qarab trapezoidal sxemalar tahlil qilinadi.*

**Kalit so‘zlar:** *homiladorlik, vulvovaginit, bakterial vaginoz, metronidazol, mikonazol.*

### REVIEW OF MODERN METHODS OF TREATMENT OF WOMEN WITH VULVOVAGINITIS

#### ABSTRACT

*The review presents the results of the analysis of the literature devoted to the study of the etiological agent of genital infection, its clinical course, as well as modern treatment regimens and their effectiveness. Complications of lower genital infections, including complications of the gestational period, are presented. The stages of vulvovaginitis therapy are considered, as well as the schemes of therapy depending on the trimester of pregnancy are analyzed.*

**Keywords:** *pregnancy, vulvovaginitis, bacterial vaginosis, metronidazole, miconazole.*

Qin bo'shlig'i va tashqi jinsiy a'zolarining yallig'lanish kasalliklari eng keng tarqalgan ginekologik kasalliklardir. Jahon adabiyotiga ko'ra, vulvovaginal infektsiyaning uchrash soni doimiy ravishda oshib bormoqda. Vulvovaginit bemorlarning 80-90% da uchraydi va eng yuqori ko'rsatkich 18-35 yoshga to'g'ri keladi [1]. Bakterial kolpit va vaginoz bilan kasallanishning o'sish tendentsiyasi erta boshlangan jinsiy hayot va faol jinsiy hayot kechiruvchi bemorlarda va kontrasepsiya usullaridan foydalanishning sustligiga bog'liq [2]. Bemorlar ginekologga quyidagi chikoyatlar bilan: jinsiy azo'da qichishish, achish, yoqimsiz hidli patologik ajralmalar, tashqi jinsiy azo'lar va qin shilliq qavati sezuvchanligi, qin ichi quruqligi va qichich, qin sohasidagi diskomfort, siyish payti va jinsiy aloqa paytidagi ogriqlarga chikoyat qilib kelishadi. Bakterial vaginoz va vulvovaginal kandidoz vulvovaginitning eng keng tarqalgan ko'rinishidir [3]. Intim gigiyenaga etarlisha amal qilmaslik natijasida kelib chiqadigan vaginal mikrofloraning buzilishi vulvovaginit rivojlanishining sabablarining biridir [4]. Vaginal mikrofloraning buzilishiga mutlaq patogenlar yoki shartli patogenlar sabab bo'lishi mumkin. Shuningdek, vulvovaginitning ishqoriy pH, tarkibida xushbo'y hidli intim gigiyena vositalari va boshqalar kabi turli xil allergenlar ta'sir qilishi oqibatida kelin chiqishi mumkin. Vulva va qinning yallig'lanish kasalliklari reproduktiv tizimning turli ginekologik kasalliklari - kichik chanoq azo'lari yallig'lanish kasalliklari rivojlanishida, shuningdek abort, muddatidan oldin tug'ruq va turli ho'miladorlik davridagi patologiyalari rivojlanishida asosiy sabablardan biri hisoblanadi [5]. Homiladorlik davrining asoratlari bilan kechishi va gestatsiya davrida har qil asoratlari bilan o'tishida infeksiya omili o'rni yuqori. Jahon adabiyotlarida vulvovaginit rivojlanishida va homiladorlik davrida amnionit bilan bog'liqligida etiologik aralash turi infeksiya va koinfektsiya muhim rol oynashi haqida ko'rsatilgan.

**Tadqiqot maqsadi.** Vulvovaginit mavzusi bo'yicha o'rganilgan masalalarini qamrab oluvchi zamonaviy ilmiy adabiyot manbalarini tahliliy ko'rib chiqish.

**Materiallar va uslublar.** Ushbu mavzu bo'yicha 19 ta xorijiy adabiyot manbalari tahlili o'tkazildi.

Homiladorlik davrida vulvovaginit bilan og'rigan bemorlarni davolashda, zamonaviy sharoitda aralash infeksiyalar ancha keng tarqalgan bo'lib, homilador ayollarda ziyonsiz samaradorlikni hisobga olgan holda tashxis qo'yish va davolash yo'lini tanlashda qiyinchiliklarga olib keladi. Kombinirlangan dorilarni qo'llash, patogen va shartli patogen mikroorganizmlarning keng doirasiga ta'sir qiluvchi va antibakterial, antiprotozoal va zamburug'qa qarshi ta'sirga ega bo'lib, klinik samaraga erishishga va homiladorlikning asoratlari xavfini va vaginal infeksiya bilan bog'liq salbiy oqibatlar sonini kamaytirishga imkon beradi.

Vulvovaginal kasalliklar hozirgi vaqtda akusherlik va perinatalogiya oldida turgan muammolardan biridir. Tadqiqotlarda, homiladorikning asoratlar bilan kechishi va perinatal asoratlar rivojlanishida infeksiya omili roli kata ekanligi aniqlangan [1]. Shu munosabat reproductiv salomatlik sohasi oldida ayollar salomatligi va intim gigiena profilaktikasi nafaqat qin, balki butun organizmning mikroflorasining buzilishi va bunga olib keladigan omillar oldini olishdir. Qin sohasining mikrobiotsenoziga tashqi va ichki muhit omillari ta'sir qiladi. Normal mikroflora va himoya mexanizmlari patogen mikroorganizmlarning tusishi va infeksiyaning yuqoriga ko'tarilishini oldini oladi. Yallig'lanish tabiiy himoya mexanizmlari buzilishi, yani laktobakteriyalar soni kamayashi, qin muhitni pH o'zgarishi patogen mikroflora rivojlanishi uchun qulay sharoit yaratadi. Tashqaridan tushgan patogen mikroorganizmlar qin shilliq qavati epiteliy kletkalariga hujayralariga yopishadi, oqibatda laktobakteriyalar va patogen mikroorganizmlar orasida disbalans yuzaga keladi. Patogen mikroorganizmlarning kolonizatsiyasi natijasida to'qimalarning shikastlanishi va shu bilan birga vulva va qinning shilliq qavatida yallig'lanish reaksiyasini keltirib chiqaradi [7]. Qin sohasining tashqi muhitdan himoya to'sig'iga halqa hosil qiluvchi jinsiy yoriq yopilishiga yordam beruvchi oraliq va toz bo'shlig'ining muskullari kiradi.

Shuningdek himoya mexanizmida qin devorida joylashgan bartolin bezlari, qin shilliq qavati hujayralarining doimiy ravishda yangilanib turishi muhim rol oynaydi. Qin sohasi epiteliysi o'zgarishi jinsiy gormon - estrogen miqdori o'zgarishi bilan bog'liq. Ajralmalarda yetarli darajada foydali floraning ishlab chiqarilishi, qindagi shilliq qavatdagi epiteliysini tsiklik yangilanishi va patogen mikroorganizmlar chiqarib yuborishni sezilarli kuchaytiradi [8].

Qin normal mikrobiotsenozini tamiyinishda laktobakteriyalar (Dederleyn tayoqchalari) muhim rol oynaydi. Ular vodorod peroksid ( $H_2O_2$ ) hosil bo'lishiga hissa qo'shadi va glikogenning fermentativ parchalanishi paytida sut kislotasini hosil qiladi. Sut kislotasi pH darajasini - 4,0-4,5 gacha pasaytiradi. Qin bo'shlig'idagi kislotali muhiti patogen mikroorganizmlarning ko'payishiga to'sqinlik qiladi va shu bilan qinning fiziologik himoya mexanizmi hisoblanadi [8]. Qin bo'shlig'i optimal sharoitida, etarli miqdordagi laktobakteriyalar va 4,0-4,5 pH daraja sut kislotasi mikroblarga ta'sir ko'rsatib - patogen mikrofloraning ko'payishini to'xtatadi [7].

Ma'lumki, patogen mikroorganizmlar keltirib chiqaradigan vaginal kasalliklar, masalan, disbiyoz va vaginit, homila hosil bo'lishiga to'sqinlik qilmaydi, ammo ularning fonida homiladorlik kechishida turli xil asoratlar: xorioamnionit, istmik-tservikal yetishmovchilik, qog'onoq pardaning erta yorilishi, muddatidan oldin tug'ruq, tug'ruqdan keyingi yiringli-septik asoratlar bilan kechadi [3]. Mikroorganizmlarning xomila bo'shlig'iga kirish yo'llari orasida: jinsiy yo'lining

pastki qismlaridan yoqori qavatga ko'tarilgan, gematogen - ona infeksiyasining surunkali o'choqlaridan va yatrogen - invaziv diagnostika yoki terapevtik muolajalar paytida - kuzatiladi [4]. Infeksiya ko'tarilgandan keyin qog'onoq parda pastki qismiga bakteriyalar o'zlari tomonidan ishlab chiqargan proteinazlarining litik ta'siri oqibatida qog'onoq pardoning muddatidan oldin yorilishi yuzaga keladi [6]. Sog'lom bemorlarning va ayollarning homiladorlik davrida bachadon ichi mikrobiomasini organish shuni ko'rsattiki, intraamniotik infeksiyaga chalingan 349 nafar ayollarni tekshiruvdan o'tqazilganda bakteriyalar mikobiotasi 5-16 turdoshga kiruvchi bakteriyalar aniqlandi. Ular 44 avlodga va 87 xil taksonga tegishli ekanligi aniqlandi. Bakteriyalarning eng keng tarqalgan turi orqa ichak florasi bo'lib, infeksiya bilan kasallangan bemorlarning 98% (343/349); ikkinchi eng keng tarqalgan Mycoplasma – 57,8% hollarda (205/349) va Ureaplasma - 49% (172/349) ayollarda topilgan. Genital traktning patogenlarning nisbati: Ureaplasma urealyticum - 11%, Streptococcus agalactiae - 11%, Mycoplasma hominis - 9% va Fusobacterium nucleatum - 9% [1]. Jinsiy a'zolar pastki qismining infeksiya va uning kichik chanoq yallig'lanish kasalliklari bilan bog'liqligini aniqlash bo'yicha o'tqazilgan retrospektiv tadqiqotlar ma'lumotiga ko'ra: tarqalishi bo'yicha o'tqazilgan retrospektiv tadqiqotlar chuni ko'rsatdiki subklinik ko'rinishga ega bo'lgan pastki jinsiy a'zolarining xlamidiya va/yoki gonokokk infeksiyasi, bakterial vaginoz va bochqa yallig'lanish kasalliklari: xlamidiya infeksiyasi bo'lgan bemorlarning 27%, gonokokk infeksiyasi bo'lgan bemorlarning 26% klinik belgilarisiz kechishi ma'lum bo'ldi [2]. Homilaning o'z-o'zidan tushish yuz berishida infeksiyaning roli katta: 2009-2014 yillarda o'tkazilgan tadqiqotlar ma'lumotiga ko'ra, homiladorlikning erta muddatida 15% va homiladorlikning kech davrida 66% da homila tushishi infeksiya bilan zararlanishiga bog'liq bo'lishi mumkin [8]. Intraamniotik infeksiyaning bilan erta tug'ilish sodir bo'lgan bemorlarning 46-50% da tashxis qilingandi, tug'ruqning homiladorlik muddatining qanchalik erta davrlarida sodir bo'lsa, infeksiya bilan zararlanish uchrashish soni shunchalik yuqori bo'ladi [4].

Reproduktiv yoshdagi ayollarda vulvovaginit va servitsit ko'pincha jinsiy yo'l bilan yuqadigan infeksiyalarning patogenlari (xlamidiya, gonokokklar, trichomonas va boshqalar), bakteriyalar (Mycoplasma hominis, Ureaplasma urealyticum, tranzitor flora) va Candidaning zamburug' turkumlari, viruslar va ularning kombinatsiyasi turlicha va hatto bir-biri bilan aralash kelishi mumkin [6].

So'nggi yillarda o'tkazilgan tadqiqotlar ko'rsatdiki mikroorganizmlarning turli dori vositalariga chidamliligi, davolashning samarasizligiga, kasallikning qaytalanishiga va vulvovaginal kasalliklarning surunkali kechishiga olib kelmoqda [10]. Homiladorlik davrida aralash etiologiyali vulvovaginal infeksiyalari bo'lgan

bemorlarni davolashning asosiy printsipli ona homila uchun xavfsizlik va xavf nisbatini hisobga olgan holda barcha etiologik ahamiyatga ega mikroorganizmlarni davolashdir. Shu munosabat bilan, klinikada, preparatni tanlashda, qo'llash yo'lini, dozalash rejimini, uning tarkibini, nojo'ya ta'sirlarning tabiatini, homiladorlik davrida davolash bo'yicha amaldagi klinik ko'rsatmalarda ushbu preparatning borligini hisobga olishi kerak, shuningdek laboratoriya tekshiruv, davolash bosqichlariga bemorlar rioya qilishlari kerak.

Homiladorlik davrida aralash jinsiy infektsiyaning asoratlanmagan shakllarini davolash uchun dori vositalarining mahalliy shakllaridan foydalanishni afzaldir [9]. Shilliq qavat yuzasida faol moddaning yuqori kontsentratsiyasini yaratish xususiyatiga ega bo'lgan mahalliy dorilarni vaginal yuborish yo'li, preparatni to'g'ridan-to'g'ri kasallikning o'chog'iga yuborish va qonga tez so'rilishini ta'minlaydi va ular jigarni chetlab o'tish eng qulay hisoblanadi va bundan tashqari, bakterial chidamlilik yuzaga kelishiga olib kelmaydi, boshqa tomondan, faqat mahalliy ta'sir uchun ishlatiladigan dorilar mahalliy immunitetga va qinning tabiiy biotsenoziga minimal ta'sir ko'rsatishi kerak [11].

Metronidazol (750 mg) va mikonazol (200 mg) o'z ichiga olgan vaginal suppozitorlarni 7 kun davomida kuniga 2 marta qo'llash va qin trixomoniazni davolash uchun metronidazolni bir marta 2 g dozada peroral qabul qilish muolajalari solishtirilganda, 12-15 va 30-35 kunlarida davolash samaradorligi bo'yicha 90% va 80% sezilarli farq aniqlanmadi ( $p=1.00$ ). Mikonazol bilan birgalikda intravaginal metronidazolning yuqori dozalari davolashda yaqshi samara beradi, bu trixomoniazni davolashda nitroimidazolning tizimli nojoyi ta'siridan qochadi [12].

Hozirgi vaqtda vulvovaginal infektsiyalari bo'lgan bemorlarni davolashda ikki bosqichli davolash usuli qo'llaniladi, bunda birinchi bosqichning maqsadi patogen mikroorganizmlarni qin bo'shlig'idan yo'q qilish, ikkinchi bosqich - vaginal bo'shliqda etarli miqdorda laktobakteriyalari bo'lgan optimal biokimyoviy muhitni tiklash [9]. Umumiy qabul qilingan terapevtik ko'rsatmalarga qaramay, adabiyotlarda antibiotik va probiotiklarni bir vaqtda qo'llash samaradorligini tasdiqlovchi ma'lumotlar ham mavjud [14]. Bakterial vaginoz bilan og'rikan bemorlarda vaginal probiotik qabul qilish rejimini antibiotik davo kursi klindamitsin bilan birgalikda qo'llash bo'yicha tadqiqot (vaginal krem 2%) ikkita rejimning solishtirma samaradorligini ko'rsatdi: 1) antibiotik terapiyasining birinchi kunidan boshlab birgalikda qo'llash (klindamitsin + 7 kun davomida probiotik), keyin faqat probiotik 7 kun) va 2) ketma-ket, antibiotik (7 kun davomida klindamitsin) kursi tugagandan so'ng darhol 14 kun davomida probiotik. Klinik va laboratoriya samaradorlikni umumiy baholaganda 66,7% va 63,0% ni tashkil etdi, bu umumiy davolash kursining

davomiyligini 1,5 baravarga qisqartirdi [13]. Urogenital trixomonazni va bacterial vaginozni davolashda tanlanadigan preparat 5-nitroimidazol guruhidan dorisidir. Ta'sir mexanizmi molekulaning nitroguruhining oddiy va anaeroblarning nafas olish zanjiriga qo'shilishidan iborat bo'lib, bu mikroorganizmni nafas olish jarayonlarini buzadi va hujayra o'limiga olib keladi. Preparat quyidagilarga qarshi: *Trichomonas vaginalis*, *Enterobacteriaceae*; anaerob gram-manfiy (*Bacteroides* spp., *Fusobacterium* spp., *Veillonella* spp., *Prevotella*) va gramm-musbat (*Clostridium* spp., *Eubacterium* spp., *Peptostreptococcus* spp.) mikroorganizmlar, shuningdek, fakultativ anaerob *G.vaginalis* faol tasir qiladi. Mikroorganizmlar metronidazolga sezgir emas, ammo aralash flora (aeroblar va anaeroblar) mavjud bo'lganda metronidazol oddiy aeroblarga qarshi antibiotiklar bilan sinergik ta'sir ko'rsatadi va ijobiy natija beradi. Homilador ayollarda bacterial vaginozni metronidazol bilan davolash quyidagi sxemalar yordamida qo'llash mumkin: og'iz orqali (250 mg dan kuniga 3 marotaba yoki 500 mg dan kuniga 2 marotaba 7 kun) yoki II- va III- trimestrda qin orqali (5 g dan bir marta yoki 5 kun). Tadqiqotlar va meta-tahlillarda homiladorlik davrda metronidazolni qo'llash va yangi tug'ilgan chaqaloqlarda teratogen asoratlarning yuzaga chiqqanligi aniqlanmadi, ammo I trimestrda preparatni qo'llash mu'mkin emas [9].

Vulvovaginal kandidozni davolash uchun tanlangan dorilar azol hosilalari, xususan mikonazol bo'lib, ularning fungitsid va fungistatik ta'siri zamburug'larning qobig'i va plazma membranalarining ergosterol biosintezini ingibirlab, hujayra devoir o'tqazuvchangligi va lipid tarkibidagi o'zgarishlar sodir zamburug' hujayralarining nabut bo'lishiga olib keladi. Preparat *Coccidioides immitis*, *Cryptococcus neoformans*, *Petriellidium boydii*, *Paracoccidioides brasiliensis*, *C. albicans*, *Trichophyton*, *Epidermophyton*, *Malassezia furposi*, ba'zi gram musbat bakteriyalar keltirib chiqaradigan patologiyalarda samarali.

Jinsiy infeksiya-yallig'lanish kasalliklarining eng ko'p uchraydigan sabablari mikrobial assotsiatsiyalar, samaradorligi tasdiqlangan va antimikrob, fungitsid va antiprotozooy ta'sirga ega kombinatsiyalangan dorilar bo'lganligi sababli, aerob, anaerob mikroorganizmlarga va *Candida* turlarini davolashda afzal ta'sir qilish xususiyatiga ega [7]. Biroq, ba'zi dorilarni qo'llash tibbiy qo'llash ko'rsatmalarda homiladorlik muddati bilan bog'liq cheklovlar bor. Shunday qilib, homiladorlikning 12 xaftaligigacha va emizikli davrda antiseptiklar va natamitsin tanlanadi. Homiladorlik 12 haftasidan boshlab, mikonazol, itrakonazol, ketokonazol, klotrimazol, sertakonazol, tiokonazol, siklopiroks, ekonazolni qin orqali qo'llash mumkin [9]. Akusher-ginekologlar amaliyotida tavsiya etilgan dorilar orasida kombinatsiyalangan preparatlar (neomitsin + nistatin + polimiksin B, metronidazol + mikonazol, nistatin +

nifuratel, butokonazol + klindamitsin, neomitsin sulfat + nistatin + prednizolon + antiseptiklar) va xlorheksidin, dequalinium xlorid) ham qo'llanilishi mumkin[13].

Homiladorlikning I trimestridagi nospesifik servikovaginitli ayollarda qin mikrobiotsenozni differentsial korreksiyalash samaradorligini o'rganish shuni ko'rsatdiki, antiseptik (dekvalinil xlorid) servikovaginitni davolashning birinchi bosqichida qo'llash kasallikning qaytalanishi kamaytiradi. Servikovaginal infeksiyalar nazorat guruhiga nisbatan 26% ga pasaydi, bunda vaginal normal mikrobiotsenozni tiklash davolashning birinchi bosqichidan keyin mikrofloraning muhitini hisobga olmasdan amalga oshirilgan edi ( $p=0,037$ ). N.Yu. Katkova va boshqalar tomonidan olingan ma'lumotlatga ko'ra davolanish davomiyligi qaytalanuvchi yoki kasallik qachon boshlanganligiga bog'liqdir [15]. Homiladorlikning II va III trimestrida vulvovaginal kandidoz va bakterial vaginoz birga kelishi va qaytalanuvchi bakterialvaginoz tashxisli kasallar va birinchi marta bakterial vaginoz bilan kasallangan yoki bakterial vaginoz bilan vulvovaginal kandidoz birga kelishi va disbioz va vulvovaginal kandidoz tashxisli bemorlarni davolashda kompleks dori (tinidazol+tiokonazol) qisqa muddatli (3 kunlik: 1 suppozitor kuniga 2 marta) va uzoq muddatli (7 kunlik: 1 suppozitor kuniga 1 marta) sxemalar bo'yicha davolashda samaradorlik bir xil bo'lganligini ko'rsatdi. Homiladorlikning II va III trimestridagi bemorlarda qin bo'shlig'i disbiotik yallig'lanishi va qaytalanuvchi yallig'lanish kasalliklarda 7 kunlik terapiya kursi afzalliklarga ega ekanligi ko'rsatdi.

Ayollar xayotining hamma davrlarda va homiladorlikda ham aralash etiologiyali vulvovaginitni davolashda hozirda yaxshi o'rganilgan dori vositalaridan biri bu antibakterial, antiprotozoal va antifungal ta'sirga ega bo'lgan metronidazol va mikonazolning kombinatsiyasi. Aralash vaginal disbiozli bemorlarni to'rtta davolash sxemasidan foydalangan holda mahalliy ta'sir bilan davolashda: (I guruh - metronidazol 500 mg + mikonazol 100 mg, kuniga 2 marta 7 kun davomida intravaginal; II guruh - klotrimazolning intravaginal qo'llanilishi (2 % li krem) 6 kun davomida kuniga 1 mahal; III guruh - klindamitsin fosfatning (2% krem) intravaginal qo'llanilishi 6 kun davomida kuniga 1 mahal; IV guruh - kompleks preparat ternidazol 200 mg + neomitsin sulfat 100 mg + nistatin 100 000 ED + prednizolon 3 mg, 10 kun davomida tunda 1 vaginal tabletka) yuqori klinik va mikrobiologik samaradorlikni va preparatning metronidazol + mikonazol tarkibiga Morisku-Grin shkalasi bo'yicha yuqori muvofiqligini aniqladi. Klindamitsin fosfatdan foydalanish qo'shimcha antimikotik terapiyani talab qiladi. Bemorlar 6 oylik davolash kursi tugagandan so'ng homilador bo'lib, sog'lom bola tug'ilishi bilan yakullandi [16].

Turli mualliflar metronidazol va mikonazol kombinatsiyasini o'z ichiga olgan preparatlarni turli dozalash rejimlaridan foydalanadilar. Bochqa izlanuvchilar

ma'lumotiga ko'ra 750 mg metronidazol va 200 mg mikonazolni o'z ichiga olgan preparat eng keng tarqalgan patogen assotsiatsiyadan iborat vulvovaginitni davolashda 7 kun davomida intravaginal qo'llash 87% ga yaqshi samaradorlik bergan [17]. II trimestrda homilador ayollarda vulvovaginit va vulvovaginal kandidozni davolashda mahalliy dorini (750 mg metronidazol va 200 mg mikonazol) qo'llash samaradorligi va xavfsizligini baholash uchun O.V. Bitsadze va boshqalar prospektiv tekshiruv o'tqazdilar. Tadqiqotga bacterial vaginoz tashxisi (n=51) va vulvovaginal kandidoz tashxisi (n=71) bilan homiladorlikning 18-22 xaftaligidagi 122 homilador ayol (o'rtacha yoshi  $29,6 \pm 2,5$  yil) tekshiruvdan o'tqazildi [18]. Mualliflar ushbu dorilar kombinatsiyasining yuqori terapevtik samaradorligini davolash boshlanganidan boshlab 14 va 28-kunlarda bacterial vaginoz bo'lgan homilador ayollar guruhida ko'rsatdilar - 96% (48/51) va 94% (47/51) va vulvovaginal kandidoz bilan guruhiga - mos ravishda 94,2% (65/71) va 91,3% (63/71) ko'rsatdilar.

Bochqa avtorlar malumotida bacterial vaginoz bilan og'rigan bemorlarda davolashda kombinirlangan dori qo'llash davolashdan 14 kun o'tgach, bemorlarning sub'ektiv va laboratoriya parametrlarini baholaganda ijobiy ta'sir ko'rsatdi. Tadqiqot natijalari preparatning yaxshi chidamliligi fonida davolashning yuqori samaradorligini (92% hollarda klinik ko'rinish normallashtirilgan, mikroskopik tekshirish - 94,2% hollarda) ko'rsatadi [17]. Shunga o'xshash ma'lumotlar E. Ozyurt va boshqalar tomonidan chet el tadqiqotlarida davolash boshlanganidan keyin 8-10 va 21-23 kundan keyin baholangan holda kombinirlangan dori (metronidazol 500 mg + mikonazol 100 mg) bilan 7 kunlik davolashning yuqori samaradorligini isbotladi: vaginit klinik belgilarining ketishi bemorlarning 91% da (67/74) yaqshilanishi kuzatilgan [18]. Mikrobiologik davolash darajasi trichomonoz vaginitining 97,3%, bacterial vaginitning 86,6% va kandidal vaginitning 81% da kuzatildi, takrorlanish darajasi mos ravishda 2,7%, 3,8% va 16,1% ni tashkil etdi. Mikrobiologik davolashning umumiy darajasi aralash infeksiyalarni tashkil etdi - 86% (shundan 93% - trichomoniasis + bacterial vaginoz va 73% - bacterial vaginoz + vulvovaginal kandidoz). Metronidazol va mikonazolning kombinatsiyasi infeksiyaning yakka yoki aralash etiologiyasidan qat'iy nazar, vaginitni davolashda samarali bo'ladi.

L.M. Nebyshinets va boshqalar 100 mg metronidazol + mikonazol 100 mg 1 kapsulaning vulvovaginal kandidozni davolashda qin orqali va 1 kapsuladan 10 kun davomida solishtirma past dozalarini qo'llash bo'yicha tadqiqotni taqdim etdi [19]. Mualliflar davolanishning 2-3-kunida ijobiy dinamikani va ikkala guruhdagi bemorlarda 5-kuni vulvovaginal kandidozning klinik ko'rinishlarining yo'qligini ta'kidladilar ( $p=0,23$ ). Farmakoterapiya natijasida mikrobiologik normal muhitga ikkala guruhdagi ayollarda ham erishildi va sezilarli farqlarga ega emas edi ( $p>0,05$ ),



bu metronidazol 100 mg + mikonazol 100 mg kombinatsiyasining past dozalari samaradorligini ko'rsatdi. Shunga o'xshash ma'lumotlar [18] qinning aralash etiologiyali nospetsifik kasalliklarida metronidazol 100 mg + mikonazol 100 mg kombinatsiyasi bilan davolash (sxemada: 1 kapsulasi kuniga 1 mahal kechqurin qin orqali 10 kun davomida keyin 14 kun probiotik bilan kontaminatsion davolash) samaradorligini 10 kun va 1 oydan keyin baholaganda ijobiy natijaga ko'rsatgan. Aralash etiologiyali vulvovaginiti bo'lgan ayollarda metronidazol 100 mg + mikonazol 100 mg kombinatsiyasidan foydalangan holda mahalliy davolash tajribasi past konsentratsiyali dorilarning yuqori samaradorligi va xavfsizligini va ular tufayli qoniqarli natijalarni ko'rsatdi.

**Xulosa.** Homiladorlik davrida vulvovaginit bilan og'riqan bemorlarni davolashda, zamonaviy sharoitda aralash infektsiyalar ancha keng tarqalgan bo'lib, homilador ayollarda ziyonsiz samaradorlikni hisobga olgan holda tashxis qo'yish va davolash yo'lini tanlashda qiyinchiliklarga olib keladi. Kombinirlangan dorilarni qo'llash, patogen va shartli patogen mikroorganizmlarning keng doirasiga ta'sir qiluvchi va antibakterial, antiprotozooy va zamburug'qa qarshi ta'sirga ega bo'lib, klinik samaraga erishishga va homiladorlikning asoratlari xavfini va vaginal infektsiya bilan bog'liq salbiy oqibatlar sonini kamaytirishga imkon beradi.

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# METHODS AND MEANS OF IMPROVING THE SECURITY OF ELECTRONIC DOCUMENT EXCHANGE SYSTEMS BASED ON NEURAL NETWORKS

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## Introduction

In the age of rapid technological advancement, electronic document exchange systems have become an integral part of various sectors, ranging from finance and healthcare to government and education. However, the increased reliance on digital platforms has also escalated security concerns. Cyber threats, including data breaches and identity theft, pose significant challenges to the integrity and confidentiality of electronic document exchange systems. To combat these challenges, researchers and developers have turned to innovative solutions, incorporating neural networks to enhance the security of these systems. This article explores the methods and means of improving the security of electronic document exchange systems, focusing on advancements made through neural networks-based approaches.

## Methods of Improving Security

*Deep Learning Algorithms:* Deep learning techniques, such as Convolutional Neural Networks (CNNs) and Recurrent Neural Networks (RNNs), have shown remarkable efficiency in detecting patterns and anomalies within electronic documents. By training neural networks on large datasets, systems can learn to identify fraudulent activities or malicious content, thereby enhancing security protocols [1].

*Natural Language Processing (NLP) Models:* NLP models powered by neural networks enable the analysis of textual content within electronic documents. Sentiment analysis and language pattern recognition help in filtering out phishing emails or malicious attachments, ensuring that only legitimate documents are processed and exchanged [2].

*Behavioral Biometrics:* Neural networks can be employed to analyze user behavior patterns, including typing speed, mouse movements, and interaction habits. This behavioral biometric data adds an extra layer of security, as any deviation from the norm can trigger alarms and prevent unauthorized access [3].

### Means of Improving Security

*Encryption and Decryption:* Neural networks aid in developing robust encryption algorithms. They play a vital role in creating complex encryption keys and decoding encrypted documents securely. By leveraging neural networks, encryption methods can adapt and evolve to counter emerging threats [4].

*Anomaly Detection Systems:* Neural networks are pivotal in anomaly detection. By establishing a baseline of normal system behavior, any deviation, such as unusual data access or transfer patterns, can be quickly identified. Neural networks excel in recognizing these deviations, enhancing the system’s ability to detect and prevent cyber threats [5].

*Secure Multi-Party Computation (SMPC):* SMPC protocols, which enable parties to jointly compute a function over their inputs while keeping those inputs private, have gained prominence in secure document exchanges. Neural networks facilitate the implementation of SMPC by ensuring the privacy and integrity of data during computation, thereby enhancing security in multi-party collaborations [6].

*Comparison Table: Methods and Means*

Methods	Advantages	Disadvantages
Deep Learning Algorithms	<ul style="list-style-type: none"> <li>- Exceptional pattern recognition capabilities.</li> <li>- Continuous learning improves accuracy over time.</li> </ul>	<ul style="list-style-type: none"> <li>- Require significant computational resources.</li> <li>- Initial training on large datasets is time-consuming.</li> </ul>
NLP Models	<ul style="list-style-type: none"> <li>- Effective in analyzing textual content for phishing detection.</li> <li>- Language pattern recognition enhances accuracy.</li> </ul>	<ul style="list-style-type: none"> <li>- Limited to text-based documents, excluding multimedia files.</li> <li>- Language nuances may pose challenges in some cases.</li> </ul>
Behavioral Biometrics	<ul style="list-style-type: none"> <li>- Provides real-time user authentication.</li> <li>- Difficult to impersonate due to unique behavioral patterns.</li> </ul>	<ul style="list-style-type: none"> <li>- Sensitivity to environmental factors, such as device changes.</li> <li>- Requires continuous monitoring for accuracy.</li> </ul>
Encryption and Decryption	<ul style="list-style-type: none"> <li>- Ensures secure data transmission and storage.</li> <li>- Neural networks aid in creating complex encryption keys.</li> </ul>	<ul style="list-style-type: none"> <li>- Vulnerable to quantum computing attacks in the future.</li> <li>- Key management complexities.</li> </ul>
Anomaly Detection Systems	<ul style="list-style-type: none"> <li>- Efficient in identifying irregular data access patterns.</li> <li>- Provides proactive threat detection and prevention.</li> </ul>	<ul style="list-style-type: none"> <li>- False positives may occur, leading to unnecessary alerts.</li> <li>- Initial setup requires careful tuning for accuracy.</li> </ul>
Secure Multi-Party Computation (SMPC)	<ul style="list-style-type: none"> <li>- Enables secure collaborative computations without revealing raw data.</li> <li>- Neural networks ensure privacy during computation.</li> </ul>	<ul style="list-style-type: none"> <li>- Complexity in implementing protocols.</li> <li>- Requires standardized frameworks for widespread adoption.</li> </ul>

## Conclusion

Incorporating neural networks into electronic document exchange systems has significantly enhanced their security, mitigating various cyber threats. By employing deep learning algorithms, NLP models, behavioral biometrics, encryption techniques, anomaly detection systems, and SMPC protocols, organizations can establish robust security measures to protect sensitive information. While challenges exist, ongoing research and development in the field of neural networks continue to address these issues, paving the way for even more secure electronic document exchange systems in the future.

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## HALOL KASBNING JAMIYAT RAVNAQI VA YOSHLAR TARBIYASIDAGI O'RNI

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*Annotatsiya:* Ushbu maqolada halol kasbning obod va farovon turmushga erishishda tutgan o‘rni va ahamiyati, halollikning shaxs va jamiyatimiz hayotiga ijobiy ta’siri, rizq halol bo‘lishi va uning yoshlar tarbiyasida tutgan o‘rni keltirilgan.

*Kalit so‘zlar:* Halol, kasb-hunar, rizq, halol luqma, harom, diniy tarbiya, jamiyat ravnaqi, farzand tarbiyasi.

## THE ROLE OF THE HALAL PROFESSION IN THE DEVELOPMENT OF SOCIETY AND EDUCATION

**Z.Sh.Suvonov**

*Abstract:* This article presents the role and importance of an honest profession in achieving a prosperous and prosperous life, the positive impact of honesty on the lives of individuals and our society, the fact that food is halal, and its role in educating young people.

*Key words:* halal, professional, food, halal food, haram, religious education, social development, children’s education.

## РОЛЬ ХАЛЯЛЬНОЙ ПРОФЕССИИ В РАЗВИТИИ ОБЩЕСТВА И ВОСПИТАНИИ МОЛОДЕЖИ

**З.Ш.Сувонов**

*Аннотация:* В данной статье представлены роль и значение честной профессии в достижении благополучной и благополучной жизни, положительное влияние честности на жизнь отдельных людей и нашего общества, тот факт, что пища является халальской, и ее роль в воспитании молодежи.

*Ключевые слова:* халаль, профессионал, еда, халальная пища, харам, религиозное образование, социальное развитие, детское образование.

**Kirish.** Bugungi kunda yurtboshimiz tamonidan olib borilayotgan mamlakatimiz rivojlanish yo‘lidagi olib borilayotgan islohatlar ezgu orzu-niyatlar bilan kundalik hayotimizni to‘ldirish, ularni hayotimiz maqsad-mazmuniga aylantirish, shunday g‘oya va intilishlarni amalga oshirish uchun davlatimiz, jamiyatimizning barcha kuch va imkoniyatlarini safarbar etish, hech shubhasiz, bugungi kunda g‘oyat muhim va dolzarb ahamiyat kasb etadi. Eng muhimi, bunday ezgu maqsadlar xalqimiz tomonidan o‘zgacha shukuh, yorug‘ yuz, faxru iftixor bilan kutib olinmoqda, keng jamoatchilik hamda xorijlik mutaxassislaru ekspertlarning katta qiziqish va e‘tiroflariga sazovor bo‘lmoqda.

Shuni alohida qayd qilish zarurki, Vatanimiz mustaqillikni qo‘lga kiritganidan beri, garchi murakkab jarayonlarni boshdan kechirgan bo‘lsa-da, olib borilayotgan tub islohotlar, oqilona siyosat natijasi o‘laroq, yurtimizda madaniy, ma‘naviy va iqtisodiy sohalarda yildan-yilga o‘sish, rivojlanish kuzatilmoqda, aholi turmush tarzi tobora yaxshilanib bormoqda. Jahonning ilg‘or davlatlari ustma-ust iqtisodiy bo‘hronlar oqimini boshdan kechirayotgan bir vaqtda mamlakatimiz aholisining farovon turmushi, siyosiy va iqtisodiy barqarorlik, iqtisodimizning izchil ravishda o‘sib borishi dunyo hamjamiyatining ham e‘tiborini tortayotgani sir emas.

Mamlakatimizda aholining munosib turmush kechirishi uchun kerakli shart-sharoitlar har bir fuqaroning ezgu intilishlarini, imkoniyatlarini ro‘yobga chiqarishi uchun qulayliklar yaratish xalq farovonligini ta‘minlashning ustuvor yo‘nalishlaridan biridir. Ayniqsa, yoshlarning turli soha va kasblarni egallashlari, orzu-umidlarini ro‘yobga chiqarishda bir necha yillardan buyon davlatimiz tizimli ravishda keng ko‘lamli islohotlarni amalga oshirib kelmoqda. Ko‘plab turli-tuman o‘quv yurtlarining qurilishi, hunarmandchilik va kasanachilik ka bo‘lgan e‘tibor, kichik biznesni, oilaviy tadbirkorlikni rivojlantirish uchun qabul qilinayotgan qarorlar, berilayotgan imtiyozlar so‘zimizning yorqin dalilidir.

Hayotimiz yanada farovon va obod bo‘lishi, rizqu ro‘zimiz yanada to‘kin va barakali bo‘lishi uchun avvalo tijoratchilarimiz, dehqon va fermerlarimiz, shuningdek, kasanachilik, hunarmandchilik turli kasb-hunar egalari, tadbirkorlar, ishlab chiqarish bilan shug‘ullanuvchi shaxslar, turli idora va korxonalar ishchi-xizmatchilari o‘z sohaslarida halollikka jiddiy e‘tibor qaratishlari maqsadga muvofiq. Zero, halol kasb – baraka omilidir, halol kasb orqali rizq talab qilish vojibdir.

**Metodologiya.** Ushbu maqolani tahlil qilish, qiyoslash, tajriba va sintez usullaridan foydalanildi.

**Tadqiqot natijalari.** “Kasb” yoki “kasb qilmoq” so‘zlari bizning tilimizga arab tilidan kirib kelgan bo‘lib, “kasaba” fe‘lining o‘zagi hisoblanadi. Arab tilida

“iktasaba” soʻzlari qoʻlga kiritmoq, ishlab topmoq, qozonmoq, biror ishni bajarmoq, qandaydir foyda-manfaatga erishmoq, yutuqqa ega boʻlmoq kabi maʼnolarni anglatadi.

Shayx Muxammad Sodiq Muxammad Yusuf[1], Imom Gʻazzoliy[2], Ziyovuddin Rahim[3], Ahmad Hodiyy Maqsudiy [4], Jaloliddin Rumiyy [5] R.Sayfuddinov [6] kabi mutafakkir olimlar tamonidan halol kasb orqali topiladigan rizq halol-pokiza boʻlishi, kasb halol-pokiza boʻlishi, xayru ehson halol-pok narsalardan boʻlishi haqidagi bilimlarni taxlil qilishgan.

Eʼtiqod insonning ruhiy, tibbiy salomatligi uchun ham oʻta muhim. Olimlar aniqlashicha, dindorlar eʼtiqodsizlarga qaraganda yurak kasalligiga 60 % kam uchrar, eʼtiqodlilar ichida qon bosimining xavfli koʻrinishi koʻp boʻlmas ekan. Gap shundaki, eʼtiqodli kishining koʻtarinki kayfiyati uning sogʻligʻini yaxshilaydi. Allohga ishonish har qanday kayfiyat koʻtaruvchi xususiyatlardan yaxshiroq taʼsir qiladi<sup>1</sup>.

Halol kasb orqali hayot kechiruvchi insonning duolari ham mustajob boʻladi. Agar odamlar oldi-berdilarida, kasbu korlarida halollik va insofni oʻzlariga shior qilib olsalar, oralaridagi nizo va kelishmovchiliklar ham barham topib, adovat, bir-biriga adovat saqlash, oʻzaro ishonchsizlik kabi jamiyatni tagidan emiruvchi illatlar oʻz-oʻzidan barham topgan boʻlardir. Milliy qadriyatlarimiz va diniy tarbiya kishilarni mehnatga, mehnatsevarlikka chorlaydi. Uning hayotbaxsh taʼlimotlarida kasb-hunar, omilkorlik, chorvachilik, dehqonchilik, usta-hunarmandlik, tijoratchilik, bozorgonlik, ishchi-xizmatchilik kabi insonning oʻziga ham, jamiyatga ham, atrof-muhitga ham ulkan foyda va manfaatlar keltiradigan halol ishlar bilan shugʻullanish orqali farovon turmushga erishuvi keng koʻlamda targʻib va tashviq etiladi.

Toʻgʻri tarbiya peshona teri bilan topilgan mol-mulk qoʻlga kiritilgan narsalarning eng yaxshisi va yoqimlisi ekanini taʼkidlash barobarida ishyoqmaslik, tanballik, bekorchilik, tilanchilik, oʻzgalarga yuk boʻlish kabi illatlar girdobiga tushib qolishdan ogohlantirib, bu kabi zararli odatlarni qattiq tanqid ostiga oladi. Agar dinimiz taʼlimotlarini diqqat bilan oʻrganib, undagi oʻgit va qaytariqlarning hikmati borasida teranroq tafakkur yuritadigan boʻlsak, u insoniyatning bu dunyosini obod va mazmunli, oxiratini esa saodatli qiladigan ishlarga buyurganiga guvoh boʻlamiz. Dunyoning obodligi esa faqat yaxshi amallar bilan, mehnat va tadbir bilan hosil boʻladi. Dangasalik illati qaysi xalqda ildiz otsa, albatta, uni zaiflashtiradi, taraqqiyot karvonidan ortda qoldiradi va vayron qiladi. Bu kasallik qaysi shaxsga etsa, uni xor qiladi, obroʻsidan ayiradi.

4. <sup>1</sup> Зиёвуддин Раҳим «Бахтли ҳаёт сари» 3-бет



**Analizlar.** Hozirgi “zamonaviy” odamlarning ko‘pi dunyoga hirs qo‘yish dardi bilan og‘rigan. Kishilar orasida o‘zaro ishonch, sadoqat, vafo, mehr-oqibat kamayib ketaётgandek. Bizningcha, buning sababi bitta: o‘limni unutish, Qur‘on o‘qimaslik<sup>1</sup>.

Odamlari tanbal, dangasa bo‘lgan, ilmu fan rivojlanmagan, qonun toptalgan yurt umuman rivoj topmaydi. Xalqi o‘zgalarga qaram bo‘ladi, dushmanlar bunday yurtni istagancha toptaydilar, talaydilar. Natijada xalq ulkan moddiy va ma‘naviy zarar ko‘radi. Ba‘zan inson nafsni turli narsalarni xayol va orzu qiladi: qaniydi qo‘limda mana buncha pul paydo bo‘lib qolsa edi, dang‘illama uy qurardim, mana bunaqa mashinalarda yurardim, falon joylarga borib sayohat qilardim, degan xomxayollar suradi. Holbuki, agar hamma insonga bu dunyoda tilagan narsasi biror mehnatsiz, hatto aqliy harakatsiz, hech qanday tadbirsiz behisob ravishda berilaversa, unda dunyoning nizomiga putur etgan, insonlar ma‘naviy jihatdan buzilib, mehnatsevarlik, kasbu kor qilish, ilm o‘rganib, olim bo‘lish kabi insoniy fazilatlariga o‘rin qolmagan bo‘lardi.

Ko‘p uyqu, ko‘p eyish ham yalqovlikka sabab bo‘ladi. Chunki, ko‘p uxlaydigan odamning badanlari bo‘shashib, kamharakat bo‘lib qoladi, g‘aflat va rohatga beriladi. Asosiy vaqti shu yo‘sinda o‘tgach, o‘z-o‘zidan ko‘plab foydali ishlarni o‘tkazib yuboradi.

Ko‘p eb-ichish ham shunday, badanni semirtirib, og‘irlashtirib qo‘yadi. To‘yib ovqat eganda jasaddagi kuch-quvvat zaxirasi ovqatni hazm qilishga yo‘naltirilgani uchun inson tani bo‘shashib, uyquga mayli kuchayadi. O‘sha vaqtda inson uyida bo‘lsa yoki yumshoq o‘rindiqlarda o‘tirgan bo‘lsa, mudroq bosib, nafsining orom istagiga engilib, ko‘zlarini ohista uyquga taslim qilganini bilmay ham qoladi. Qarabsizki, yana bir rejadagi ish ortga suriladi. SHuningdek, dabdabali, keragidan ortiqcha qulayliklarga berilib hayot kechirish ham dangasalikni keltirib chiqaruvchi omillardan sanaladi.

Inson boy bo‘lib, qaerga uzatsa qo‘li etadigan darajada bo‘lsa ham, o‘z yumushlarini o‘zi bajarishga harakat qilishi afzaldir. Toki yalqovlik balosiga giriftor bo‘lib qolmasin. Ba‘zi bir badavlat kishilarni bilamiz, garchi birovlarni yollab ishlatishga qodir bo‘lsalar ham, o‘z qo‘llari bilan mehnat qilishdan rohatlanishadi. Mashinani o‘zlari haydashadi, hovlilarida mehnat qilib turishadi, ekin-tikinlarga qarab, gullar tagiga suv quyib, turli ovqatlar pishirib, bekorchilikka o‘rin qoldirishmaydi. Inson boyib, farovon hayotga erishganidan so‘ng mehnatni tark qilib qo‘yadigan bo‘lsa, hayotning ma‘naviy fayz-barakasidan, foydali mehnat beradigan

5. <sup>1</sup> Ziyovuddin Rahim «Qur‘on –qalblar shifosi» (Qayta ishlangan uchinchi nashri) 11-bet

rohatlardan mahrum bo‘lib qoladi va garchi boy, ko‘pni ko‘rgan bo‘lsa ham unday insonning xalq orasida hurmati qolmaydi.

Inson o‘zidan yaxshi iz qoldirib, dunyodan o‘tganidan keyin ham yaxshi amallari savobi to‘xtamasdan etib turadigan bo‘lishi uchun farzandlarini solih, yaxshi insonlar qilib tarbiyalashi kerak.

Farzandlarning solih va yaxshi inson bo‘lishlari, ota-ona tarbiyasining unumli va foydali bo‘lishi uchun esa ularga edirilayotgan luqmaning halol-pok bo‘lishi asosiy shartdir. Oilada farzandlar tarbiyasida luqmaning halol yoki haromdan bo‘lishi juda muhim masaladirki, uning siri tajribali kishilar ko‘z o‘ngida kundek ravshandir. Garchi farzandlarga ediriladigan har qanday luqma ularning qornini to‘ydirsa ham, biroq uning yaxshi yoki yomon ta’siri asta-sekin ko‘rinadi. Rizq halol yo‘ldan topilgan bo‘lsa, farzandlar tarbiyani qabul qiluvchi, yaxshi xulqli, ota-onaning haqlarini taniydigan bo‘lib ulg‘ayadilar. Halol rizq bilan ulg‘aygan farzandlar favqulodda iste’dod, xotiraning o‘tkirliigi va zakovat bilan ajralib turadilar. Agar farzandlarga edirilgan luqma harom, shubhali yo‘llar bilan topilgan bo‘lsa, ularning tarbiyasiga har qancha ko‘p kuch, mablag‘ sarflanmasin, har qancha katta e’tibor berilmasin, bu sa’y-harakatlar kutilgan natijani bermaydi. Imom G‘azzoliy bunday deydi: “Bolalar ota-onalariga berilgan bir omonatdir. Bolaning qalbi har qanday naqshu tasvirdan xoli bir qimmat baho gavhardir. U qanday naqsh solinsa, qabul qiladi, qayoqqa bukilsa, egiladi. Agar yaxshilikka o‘rgatilsa, shu bilan o‘sadi va dunyoyu oxiratda saodatga erishadi. Uning savobiga ota-onasi ham, har bir muallimu ustozlari ham sherik bo‘ladilar. Agar yomonlikka odatlantirilsa, hayvonlardek o‘z holiga tashlab qo‘yilsa, oxir-oqibat halok bo‘ladi. Gunohi esa uning tarbiyasi uchun javobgar bo‘lganlarning gardaniga tushadi... Bolani chaqaloqligidanoq luqmasi halol ona emizishi lozim, agar luqma harom bo‘lsa, unda baraka bo‘lmaydi”.

**Xulosalar.** Yuqorilardan shunday xulosaga kelishimiz mumkinki jamiyatga foydali, dunyo va oxirat saodatiga erishadigan barkamol farzandlarning tarbiyasi halol luqma bilan chambarchas bog‘liq ekan.

Luqmaning halol bo‘lishi, avvalo, shaxs tarbiyasi, oila muhitining musaffo bo‘lishi, qolaversa, butun boshli jamiyat ravnaqi, mamlakat obodligi hamda davlat barqarorligidek buyuk maqsadlarga olib boruvchi olijanob fazilat ekan. Chunki yuqorida zikr etilganidek, ma’naviy tarbiya, axloqiy kamolot halol luqmasiz aslo hosil bo‘lmaydi.

Parhezkor, halol luqmali xonadonda tarbiyalangan farzand, shubhasiz oiladan tashqarida ham, ishda, o‘qishda, boshqalar bilan muomalada o‘zining halollik, insof va diyonat egasi ekanini namoyish qiladi. Bunday farzandlari bor jamiyat esa har tomonlama taraqqiy etadi, ma’nan va moddiy boy bo‘ladi.

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## INSON SALOMATLIGINI SAQLASHDA YANGI TEKNOLOGIYALARNING IMKONIYATLARI

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**Ismoiljon Mamajonov Shavkatbek o'g'li**

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***Annotatsiya:** Ushbu maqolada sun'iy intellektning qandli diabet, yurak-qon tomir kasalliklari va semirish kabi noto'g'ri oziq-ovqat iste'moli natijasida kelib chiqadigan kasalliklarni oldini olishga qaratilgan chora tadbirlarning potensial afzalliklari muhokama qilinadi.*

***Kalit so'zlar:** AI (sun'iy intellekt), qandli diabet, yurak-qon tomir kasalliklari, semizlik, parhez, salomatlik, biotexnologiyalar, axborot texnologiyalari, ma'lumotlar bazasi.*

### POSSIBILITIES OF NEW TECHNO – LOGIES IN PRESERVING HUMAN HEALTH

**Z.Sh. Suvonov, I. Sh. Mamajonov**

***Abstract:** This article discusses the potential benefits of artificial intelligence for interventions aimed at preventing diseases caused by unhealthy food consumption, such as diabetes, cardiovascular disease and obesity.*

***Keywords:** AI (artificial intelligence), diabetes, cardiovascular diseases, obesity, diet, health, biotechnology, information technology, databases.*

### ВОЗМОЖНОСТИ НОВЫХ ТЕХНОЛОГИЙ В СОХРАНЕНИИ ЗДОРОВЬЯ ЧЕЛОВЕКА

**З.Ш.Сувонов, И.Ш.Мамажонов**

***Аннотация:** В этой статье обсуждаются потенциальные преимущества искусственного интеллекта для мер, направленных на предотвращение заболеваний, вызванных потреблением нездоровой пищи, таких как диабет, сердечно-сосудистые заболевания и ожирение.*

***Ключевые слова:** AI (искусственный интеллект), диабет, сердечно-сосудистые заболевания, ожирение, диета, здоровье, биотехнологии, информационные технологии, базы данных.*

**Kirish.** Butun dunyoda ko‘plab odamlar diabet, semizlik va yurak-qon tomir kasalliklari kabi bir qancha kasalliklardan aziyat chekmoqda. Ammo texnologik yutuqlar va turli zamonaviy texnik vositalarning paydo bo‘lishi, kasalliklarni davolash va oldini olishda eng yaxshi imkoniyatlarga ega bo‘lishi mumkin. Ayniqsa, biotexnologiyalar va axborot texnologiyalari bunday muammolarni hal qilishi va oldini olish uchun AI (sun‘iy intellekt) kabi vositalardan foydalanishi mumkin.

**Mavzuga oid adabiyotlar tahlili:** Inson turlari birinchi marta 70 000 yil oldin ularning miyasidagi asabiy o‘zgarishlar kognitiv inqilobga olib kelganida rivojlana boshladi va keyin ular o‘z qabilalari uchun barqaror oziq-ovqat ta‘minotini yaratish uchun hamkorlikda ov qilishni va ma‘lum meva va sabzavotlarni yig‘ishni o‘rgandilar. Ammo ularning dietasidagi eng muhim o‘zgarish olov birinchi marta 45 000 dan 35 000 yil oldin ixtiro qilinganida sodir bo‘ldi. Bu ularga nafaqat mazali taomlar tayyorlash, balki mamontlar va fillar kabi yirik hayvonlarga hujum qilish imkonini berdi. O‘shandan buyon insoniyat o‘zining asosiy manbai: oziq-ovqat bilan ta‘minlash uchun juda ko‘p vositalarni yaratdi.

Biroq, 20-asrning o‘rtalariga qadar eng yaxshi oziq-ovqat tayyorlash vositalariga qaramay, ocharchilik har doim odamlar uchun eng katta muammo bo‘lgan<sup>1</sup>. Sanoat inqilobidan so‘ng, oziq-ovqat ishlab chiqarish liniyalari va uning butun dunyo bo‘ylab misli ko‘rilmagan darajada taqsimlanishi insoniyatning eng katta muammosi-ocharchilikni bartaraf etish uchun ko‘proq imkoniyat berdi. Ammo oziq-ovqat manbalarining ortiqcha ishlab chiqarilishi va noto‘g‘ri iste‘mol natijasida yangi turdagi muammolar kelib chiqdi: semirish, diabet va yurak qon-tomir kasalliklari va boshqalar. Ilgari odamlar etarlicha ovqatlanmaganidan aziyat chekishgan bo‘lsa, zamonaviy odamlar esa juda ko‘p va noto‘g‘ri ovqatlanishdan aziyat chekishmoqda.

**Tahlil metodologiyasi:** Bu maqola tahliliy kuzatuvlar, sub‘ektiv tajribalar, ijtimoiy o‘zgarishlar va tadqiqotlar asosida tayyorlangan.

### **Tahlil**

Noto‘g‘ri ovqatlanish deganda ozuqa moddalarini iste‘mol qilishning etishmasligi yoki ortiqcha bo‘lishi, asosiy oziq moddalarning nomutanosibligi yoki ozuqaviy moddalardan foydalanishning buzilishi tushuniladi.

Noto‘g‘ri ovqatlanish barcha shakllarda to‘yib ovqatlanmaslik (charchoq, o‘shning sekinlashishi, kam vazn), vitamin yoki minerallarning etishmasligi, ortiqcha vazn, semirish va natijada ovqatlanish bilan bog‘liq yuqumli bo‘lmagan kasalliklar kelib chiqishiga sabab bo‘lmoqda (masalan, yurak kasalliklari, qon tomirlari, diabet va ba‘zi saraton turlari). To‘yib ovqatlanmaslik, uning barcha shakllarida, aholi salomatligi, farovonligi va barqaror rivojlanishiga katta zarar etkazadi. Oziq-ovqat

<sup>1</sup> Homo Sapiens; Y. N. Harrari. <https://www.ynharari.com/book/sapiens-2/>

xavfsizligida, to'yib ovqatlanmaslik va mikroelementlarning etishmasligi bilan ko'plab odamlarning aziyat chekishi davom etmoqda. Dunyo aholisining taxminan 5 yoshgacha bo'lgan 20,2 million bola noto'g'ri ovqatlanish tufayli bo'yi orqada qolmoqda. Shu bilan birga, ayollarning 53 foizi, erkaklarning 45 foizi va maktab yoshidagi bolalar yoki o'spirinlarning 8 foizi ortiqcha vaznga ega yoki semirib ketgan<sup>1</sup>.

Agar raqamlarda ko'rilsa, shakar iste'moli har yili terroristik hujum yoki urushdan ko'ra ko'proq odamlarni o'ldiradi. Birgina 2021 yilda jahon sog'liqni saqlash tashkiloti (JSST) ma'lumotlariga ko'ra diabetdan 1,1 millionga yaqin odam vafot etdi, terroristik hujumdan esa bor yo'g'i dunyo bo'ylab 23692 kishi o'lgan<sup>2</sup>. Eng katta inson qotilining oldini olish uchun qanday yo'llar mavjud?

Qizig'i shundaki, sun'iy intellekt kabi yangi texnologiyalar evolyusiyasi yangi marralarni va'da qilmoqda. Sog'liqni saqlash tashkilotlari va dietologlar sayyoradagi har bir insonga murojaat qila olmaydilar va oziq-ovqat iste'mol qilish muammolarini bartaraf eta olmaydilar. Ammo sun'iy intellektning rivojlanishi ko'proq narsani hal qilishi mumkin. Mashinani o'rganish va o'qitish bo'yicha so'nggi yaxshilanishlar biz davolay olmaydigan kasallikning ayrim turlarini oldini olishga yordam beradi. Qon bosimini axborot texnologiyalari orqali kuzatib boradigan biometrik sensorlar yoki aqlli soatlar kabi biologik texnologiyalarning birlashishi oxir-oqibat yo'nalishni o'zgartirishi mumkin.

Sun'iy Intellekt dietamiz bilan bog'liq muammolarni qanday hal qilishi mumkin?

Sun'iy Intellekt va biotexnologiya hali ham tug'ilish kanalida bo'lsa-da, uzoq muddatda juda ko'p imkoniyatlar mavjud. Ularni inson hayotiga to'g'ri qo'llash umumiy aholi salomatligini o'zgartiradi, bu esa umr ko'rish davomiyligining oshishiga yordam beradi. Lekin qanday qilib? Milliy sog'liqni saqlash ma'lumotlar bazasiga ulangan taqiladigan qurilmalar yoki videokuzatuv kameralaridagi biometrik sensorlar, ilovalar va markaziy statistika ma'lumotlar bazasidagi profillarimiz kundalik qon o'zgarishlari va yurak urishini ma'lumotlar bazasiga yuboradi, natijada ular nafaqat tanamizdagi biologik o'zgarishlarni kuzatib boradi, balki ular bizni tahlil qilishlari va o'zimizdan ko'ra yaxshiroq bilishlari mumkin. Bunday tahlilga asoslanib, organizmdagi o'zgarishlar va uning holati to'g'risida ma'lumotlar olinishi mumkin, shuningdek, bizga qanday oziq-ovqat mahsulotla iste'molini hamda har kuni qancha shakar iste'mol qilishni taklif qilishi mumkin. Bu jamoatchilikni hayratda qoldiradigan fantaziya bo'lib tuyulishi mumkin, ammo mashinalar tez orada o'tmishdagi salomatlik tarixi va hozirgi tana holatiga qarab nima qilish kerakligini aytib bera oladi.

<sup>1</sup> JSST: World Health Organization. <https://www.who.int/>

<sup>2</sup> JSST: World Health Organization. <https://www.who.int/>

diabetesincontrol.com ga binoan, Suni'y Intellect diabetning oldini olishda yordam beradi. Bu odamlarga sog'lig'ini tushunish va uni davolashda yordam berishi mumkin. Suni'y Intellect bilan ishlaydigan vositalar katta miqdordagi ma'lumotlarni kuzatishi va tahlil qilishi mumkin, shu bilan birga diabetning individual holatlari, shu jumladan ularning holatiga parhez, jismoniy mashqlar va dori-darmonlar kabi turli omillar qanday ta'sir qilishini yaxshiroq tushuntirib berishi mumkin. Suni'y Intellect - bu uzluksiz glyukoza miqdorini monitoring ma'lumotlarini tahlili, yurak-qon tomir kasalliklari ertaroq aniqlash imkonini berishi mumkin. Bundan tashqari, Suni'y Intellect asoratlarni bashorat qilish va oldini olishda ancha yaxshi yordamchi bo'lishi mumkin.

Sog'ligimiz va hayotimiz bo'yicha navbatdagi potensial muammomiz yurak-qon tomir kasalliklari, odatda noto'g'ri oziq-ovqat iste'moli va stressning salbiy oqibatlari tufayli paydo bo'ladi.

Yurak va yurak-qon tomir kasalliklariga kelib chiqishiga sabab bo'ladigan omillardan bu passiv turmush tarzi va tartibsiz ovqatlanishdir. Ammo mashinani o'rganish bu muammoni katta ma'lumotlar bazasiga to'g'ridan-to'g'ri kirish bilan o'zgartirishi mumkin. Kasalliklarini davolash va oldini olishda Sun'iy Intellect katta ulushda yordam berishi mumkin. Misol uchun, agar tadqiqotchilar va olimlar, shuningdek, tibbiyot mutaxassislarining jamoasi yurak-qon tomir kasalliklarining bir nechta turlari uchun yangi to'g'ri ovqatlanishni joriy qilish orqali har bir bemor uchun alohida taqiladigan qurilma orqali ko'z ochib yumguncha kasallik haqida tashxis qo'yish va davolash yo'llarini tavsiya etishi mumkin. Qizig'i shundaki, u qon darajasi, har bir kimyoviy organizmning rivojlanishiga qancha hissa qo'shishi va gormonlar darajasi haqidagi barcha ma'lumotlarni o'rganib, ulardan bunday parhez ko'rsatmalarini va biz uchun eng mos jadvalni taklif qilishi mumkin.

Mamlakatimiz to'g'ri ovqatlanish va yurak kasalliklarining oldini olishning asosiy manbalari bo'lgan yangi sabzavot va mevalar bilan faxrlansa-da, texnologik qo'llanmalar va tushunchalarning etishmasligi yurak kasalliklarini engish uchun eng katta to'siqdir. Ammo mamlakatda oziq-ovqat navlarining ko'pligi, agar Suni'y Intellect va biosensolar kabi to'g'ri vositalar va yurak kasalliklarini hal qilishga qaratilgan mablag'lar bo'lsa, kasallikni yo'q qilish ehtimoli yuqori bo'lishi mumkin.

**Xulosa va takliflar.** Aytib o'tilganidek, oziq-ovqat etkazib kursi o'zgartirish imkoniyati haqida Sun'iy Intellect salohiyati katta. Ularning ma'lumotlarini tahlil qilish va biologik havola qilish tizimlari nafaqat sog'lom oziq-ovqat turlarini ishlab chiqarishi mumkin. An'anaviy oziq-ovqat ishlab chiqarish so'nggi 100 yil ichida sog'liq muammolariga qaramay muvaffaqiyatli bo'ldi. Biroq, ma'lum bir mamlakatning geografik va iqlim sharoitlariga asoslanib, sun'iy intellekt ma'lum

mahsulotlardagi organik moddalarni o'zgartirishi mumkin. Bundan tashqari, u oziq-ovqat ta'minotidagi bunday qo'shimcha o'zgarishlar aholining umumiy sog'lig'iga qanday hissa qo'shayotganini tahlil qilishi mumkin.

O'zbekistonda meva va sabzavot navlari turli tumanligi bilan ajralib turadi va ularni etishtirish bo'yicha boy tarixiy tajribaga ega. Robot sanoatining rivojlanishi ozuqa moddalariga boy oziq-ovqat manbai navlarini ommalashtirishga yordam beradi. SHuningdek, bunday oziq-ovqat manbalari sayyorada semirish, yurak kasalliklari va diabet kabi birinchi raqamli qotillarning oldini oladi.

### Foydalanilgan adabiyotlar ro'yxati

1. Jahon Sog'liqni Saqlash Tashkiloti. <https://www.who.int/>
2. Qandli Diabet Nazorati. <https://www.diabetesincontrol.com/how>.
3. Dunyo o'rtacha umr ko'rish statistikasi. <https://www.worldlifeexpectancy.com>
4. Homo Deus: ertangi kunning qisqacha tarixi. Y. N. Harrari. <https://www.ynharari.com/book/homo-deus/>
5. Homo Sapiens: Insoniyatning qisqacha tarixi. Y. N. Harrari. <https://www.ynharari.com/book/sapiens-2/>



## SERVICE SECTOR: HOW TO FORM A COMPETITIVE ENVIRONMENT

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**Abstract:** *The reforms carried out in our country created the basis for the development of all sectors of the economy, including the service sector. It remains urgent to improve the mechanisms for the development of the service sector based on the internal capabilities of our country. Formation of a competitive environment in the service sector in the context of modernization of the economy and improvement of population welfare is one of the important issues facing the country's economy today. In particular, aspects such as determining the perspective of creating a competitive environment in the service sector, which is recognized as the main driving force of ownership, improving organizational and economic mechanisms, and developing scientifically based proposals and practical recommendations on this issue, are studied in the article.*

**Key words:** *service, service sector, competition, competitive environment, service industry*

## XIZMATLAR SOHASIDA RAQOBAT MUHITINI SHAKLLANTIRISH YO‘LLARI

**Annotatsiya:** *Mamlakatimizda amalga oshirilayotgan islohotlar iqtisodiyotning barcha tarmoqlari, jumladan, xizmat ko‘rsatish va servis sohasini rivojlantirish uchun zamin yaratdi. Mamlakatimizning ichki imkoniyatlaridan kelib chiqib, xizmat ko‘rsatish va servis sohasini rivojlantirish mexanizmlarini takomillashtirish dolzarbligicha qolmoqda. Iqtisodiyotni modernizatsiya qilish va aholi farovonligini oshirish sharoitida xizmat ko‘rsatish va servis sohasida raqobat muhitini shakllantirish bugungi kunda mamlakatimiz iqtisodiyoti oldida turgan muhim masalalardan biridir. Xususan, mulkchilikning asosiy harakatlantiruvchi kuchi sifatida e’tirof etilgan xizmat ko‘rsatish va servis sohasida raqobat muhitini shakllantirish istiqbollari belgilash, tashkiliy-iqtisodiy mexanizmlarni takomillashtirish, bu borada ilmiy asoslangan taklif va amaliy tavsiyalar ishlab chiqish kabi jihatlar maqolada o‘rganilgan.*

**Kalit so‘zlar:** *xizmat ko‘rsatish, xizmat ko‘rsatish sohasi, raqobat, raqobat muhiti, xizmat ko‘rsatish sanoati*

## ПУТИ ФОРМИРОВАНИЯ КОНКУРЕНТНОЙ СРЕДЫ В СФЕРЕ УСЛУГ

***Аннотация:** Проведенные в нашей стране реформы создали основу для развития всех отраслей экономики, в том числе сферы услуг. Актуальным остается совершенствование механизмов развития сферы услуг на основе внутренних возможностей нашей страны. Формирование конкурентной среды в сфере услуг в условиях модернизации экономики и повышения благосостояния населения является одной из важных задач, стоящих сегодня перед экономикой страны. В частности, в статье изучаются такие аспекты, как определение перспективы создания конкурентной среды в сфере услуг, которая признается основной движущей силой собственности, совершенствование организационно-экономических механизмов, а также разработка научно обоснованных предложений и практических рекомендаций по данному вопросу.*

***Ключевые слова:** сервис, сфера услуг, конкуренция, конкурентная среда, индустрия услуг.*

### INTRODUCTION

Uzbekistan's transition to new market relations takes place taking into account its unique conditions, national traditions and customs. In this, the positive experiences accumulated in world practice and gained by economically developed countries are also taken into account. By service, first of all, it is necessary to understand the product of labor. The main purpose of this product is to meet specific needs of people. In other words, service is an activity aimed at satisfying the needs and requirements of people. In our opinion, the term "service" refers to the conscious activity related to the process of service that brings benefit to a person, business entities, the state and society. The ultimate goal of the reforms implemented in the country is, first of all, to create decent living and working conditions for people. This requires further development of the service sector.

The service sector is a collection of various services related sectors of the national economy. It has a social character: it offers its services not only to residents, but also to legal entities. Services provided to the population are social services. The main task of the service sector is to create services needed by the population and legal entities. Service industries include: finance, credit and insurance, retail, education, medical, housing, utilities, physical education and sports, culture and art, environmental protection, social security, etc.

They are industries related to meeting some needs of the population and enterprises (organizations, institutions). Theoretically, the service industry can be divided into two main parts - tangible and intangible service industries. Material services - delivery of products created in production networks to consumers and their storage (trade services), housing and communal services (gas, water, electricity and heat energy, operation of housing stock, streets cleaning, etc.), household services (shoes, clothes, furniture, home appliances, car repairs, etc.). Intangible services include work that does not have a material form and does not provide material wealth to consumers. These are cultural centers, healthcare, education, physical culture and sports, recreation and tourism, as well as intangible services of household services (child care services, hairdressing, bathroom services, etc.).

### **LITERATURE REVIEW**

There are a number of scientific works of domestic and foreign economists dedicated to the development of the service sector. The theoretical foundations and social importance of the service sector were studied by such economists as A. Smith, J.B. Say, D. M. Keynes, Y. Schumpeter, A. V. Chayanov [1], K. A. Raitsky [2], I. A. Zhuravleva [3], A. P. Kiselev [4]. They contributed to the development of the theory of the service industry. In the years of independence, scientists of our country conducted a number of scientific researches on this topic. S.S. Gulomov [5], G.H. Kudratov [6], Yo. Abdullayev [7], M.S. Kasimova [8], B. Khodiyev [9], A. Abdullayev [10], D. Suyunov [11], M.Q. Pardayev [12], S.K. Salayev [13], B.A. Abdukarimov [14], G.S. Sevliyans and E.N. Khadjayev [15] conducted researches that should be highlighted.

### **METHODS**

Modern methods of scientific knowledge, including statistical, comparative analysis, and synthesis methods were used in writing the article.

### **RESULTS AND DISCUSSION**

The reforms implemented in the conditions of new market relations are aimed at creating sufficient conditions for all segments of the population, as well as all economic entities, regardless of the form of ownership, to use industry services. In order to have a clear idea about the processes taking place in the economy and the mechanisms driving them, it is necessary to know their essence. From this point of view, the

research of the theoretical and methodological foundations of the field of service provision is one of the important problems. The meanings of the concept "service" is listed in the dictionaries, while the economic literature tried to reveal the economic nature of this concept. In particular, in the "Russian language dictionary" compiled by S.I.Ojegov [16], "service" means "beneficial action", "providing someone with household conditions". This dictionary says: "a service is also an action". So, in this dictionary, "service" is considered as "an action that creates a living environment for someone and brings benefits." Campbell R. McConnell, professor of economics at the University of Nebraska, USA, and Stanley L. Brewer [17], professor of economics at Pacific Ocean Lutheran University, Washington State, in the "Dictionary of Concepts and Terms" section (Vol. 2) (service) - "a service is the provision by a consumer, firm, or government of something intangible (invisible) that has value in return."

Services are divided into paid, free and privileged services. Paid services include household services, passenger transport and communication, legal services, tourist services, etc. Free services are healthcare, educational and educational services provided at the expense of the public consumption fund. Privileged services are partially paid by the population, and partially from the public consumption fund. In the conditions of new market relations, the provision of paid services to the population increases every year due to the creation of new types of them.

Based on the above-mentioned points, it can be said that service is an important form of economic activity. It has a tangible and intangible appearance, and is an activity aimed at meeting the needs of the population and legal entities (within the limit of demand). In this, of course, economic relations apply.

Service, as an economic category, reflects the economic relations that arise when meeting the needs (demand) of people, enterprises, organizations and institutions for tangible and intangible services.

The competitive environment is the institutional conditions for coordinating the activities of market entities. Competition policy consists of two elements: competition law and the field of competition protection. Competition policy models are determined by the political (administrative) or legal system. The principle of separation of powers (legislative, judicial, executive) is used to protect society from the power of monopolies. The study of the state's competition policy and the formation of the competitive environment led to the understanding that instead of a competition mechanism, a system of economic coordination was formed. The experience of today's developed countries also shows that further development of the production and service sector in the country and the creation of an environment of fair competition, and

ultimately the delivery of quality and affordable products and services to the population are important factors of development.

As a continuation of these reforms, effective efforts were made to create honest and fair competition in the process of purchasing state assets. The most important of these is the sale of state assets through public auctions.

In accordance with the Decree<sup>1</sup> of the President of the Republic of Uzbekistan dated February 19, 2019, trades in state assets are now carried out only on the "E-IJRO AUCTION" electronic trading platform. At this point, it is appropriate to add one important piece of information - trades in state share packages in joint-stock companies are carried out in stock market trades in accordance with current legal requirements.

An important aspect of the sale of state assets through this type of trade is that trades are carried out without special privileges or preferences being applied to anyone. Any legal entity or individual can participate and become a winner in public auctions of state assets. In this, the conditions are equal for everyone and everyone has the right to compete equally. There are also options to register and get detailed information about assets on this trading platform. Simplicity and transparency of participation in "E-IJRO AUCTION" electronic trading platform create more comfortable conditions for entrepreneurs and businessmen.

Today, another important innovation in the field of privatization of state assets is the cancellation of the practice of selling state assets at "zero" purchase price.

The new procedure is provided for in the Decree<sup>2</sup> of the President of the Republic of Uzbekistan dated October 27, 2020, and now state assets will be put up for public auction at the starting price of "1 soum", specifying investment and social obligations, not at the purchase price of "zero". In this case, entrepreneurs compete equally for the purchase of assets. As a result, the state asset is sold to the businessman who made the best offer.

In particular, this year, about 400 state assets were put up for electronic public sale through the single electronic trading platform "E-IJRO AUCTION" and the "Tashkent" Republican Stock Exchange, of which more than 300 state assets were sold for 257.4 billion through electronic public sale sold for soum.

As a result of the above-mentioned conveniences, removal of bureaucratic and corrupt obstacles, many businessmen in our country are starting their business activities or expanding their business activities by purchasing state assets.

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<sup>1</sup> Decree of the President of the Republic of Uzbekistan dated February 19, 2019 No. 5666 "On additional measures for the effective use of state-owned objects"

<sup>2</sup> Decree of the President of the Republic of Uzbekistan dated October 27, 2020 no. 6096 "On measures regarding acceleration of the reform of state-owned enterprises and privatization of state assets"

The process of creating a competitive environment in the public service market is inextricably linked with the need to implement structural changes in various sectors of the economy, as well as to define new strategies for the development of the service sector. It is possible to reach the planned stages if there is a set of reasonable measures for the current regulation of the economic activity of service enterprises in the strategy of economic reform in the whole country. Often this will require removing burdensome regulations that typically protect incumbent firms and thus stifle competition and innovation. International experience historically shows that regulatory reforms often deliver significant economic benefits, such as higher labor productivity and lower prices. Where services are currently provided by public entities, competition can be achieved through regulatory reforms that foster competition and choice, short of privatizing them. An example would be opening education to private providers. Regulatory reform may be a necessary condition, but it is unlikely to be a sufficient one. Strengthening labor and capital markets must complement regulatory reform to encourage the establishment and growth of new and innovative service providers. Competition can also be imported. External barriers that impede trade in services and the local establishment of foreign providers also hinder competition in domestic service markets. Reducing such barriers can not only promote efficiency and productivity in services but can also contribute directly to exports and growth.

Solving the problems of formulating methodological rules for rationalizing the forms, methods, and methods of managing the development of the service sector; formation of a modern services market aimed at increasing the efficiency of the system of providing quality services to the population; ensuring the competitiveness, security and accessibility of services is the main direction of this research, and its main conclusions and recommendations can be formulated as follows:

1. During the period of reforms in our country, social problems did not have solutions corresponding to the situation and targeted actions at the state level. At the same time, the place of the directions of social development in the system of political priorities, the forms and methods of implementing social policy are determined differently. Currently, there is no general understanding of the content of social policy, its role in the development of modern society, possible forms of return, interaction with economic policy, and economic efficiency. At the same time, the need to strengthen the social orientation of modern economies requires the development of new mechanisms to ensure the basic protection of the population, which helps to increase the competitiveness and unity of society. It is necessary to increase the role of the state as a strategist who determines the priority directions and directions of development; the formation of a huge non-commercial sector along with the market; business

socialization, which takes on a significant part of the functions related to the development of employees.

2. The following principles are the basis for the implementation of the process of development of competition in the service sector: competitive interaction of subjects in the business process of creating and consuming a service as a consumer value; joint creation of value and its distribution among process participants; coordinating the interests of all participants in the business process; the values of all customers who interact with the producer in the life cycle of the family; building a process of mutual relations not only with the participants of the creation of consumer value, but also within the enterprise; real time in organizing the interaction process. The main directions of formation of competitive advantages of service enterprises are as follows: innovations in the field of service, quality of services and management of behavior of service consumers. Achieving competitive advantages by introducing innovations to the service market is based on the following classification: significant innovations in the production of services (these are completely new services for the market); a set of new services that complement the existing ones on the market; new services for the market obtained as a result of repositioning in new market segments; improved services as a result of the development of the product line (these are the most common innovations associated with changes in the production characteristics or characteristics of existing services); old services with a modified sales method (this is the simplest type of innovation, although they are visually noticeable).

3. Perceived service quality is often described using the "justified expectations model" of the service consumer, the essence of which is that the customer compares his expectations from the service with what he actually received. The first aspect is the quality of the process - (called relative quality or functional quality), that is, how the service is provided. The second is the quality of the result (technical quality), that is, what exactly is presented. There are two other important aspects of evaluating the quality of service, which is provided by the manufacturer. These are development quality - production and delivery qualities. By evaluating the quality of the development, the validity of the proposal can be assessed, which is confirmed by the tools of the service development process. By evaluating the quality of production and delivery, it is possible to determine how well the production of the service meets its design. Formation of a competitive environment is one of the elements of the state competition policy. It should be noted that in all developed industrial countries, the interests of strengthening the position of national companies in the world market are given unconditional priority over the principles of free competition and prevention of monopoly in domestic markets.

Despite the above-mentioned ways to create a competitive environment in the service sector, there are some reforms still needing to be implemented. We identify priority areas and policies that our country should focus on to improve trade and investment flows in services (**Table 1**). “Backbone” services such as telecommunications; transport, distribution, and logistics; finance; healthcare; outsourcing services and business processing; and business and professional services are emphasized. The policy priorities outlined in Table 2 concentrate on reducing transaction costs and boosting productivity across all sectors of the economy.

### Policy Priorities

**Table 1**

Service Sector	Policy Focus
Telecommunications	<ul style="list-style-type: none"> <li>- Regulations that allow operators to connect to existing networks without discrimination and allow the development of internet-based telephony.</li> <li>- Reducing barriers to entry for foreign companies can boost competition, thereby lowering prices and improving service provision.</li> <li>- Licensing arrangements to facilitate entry without discrimination against foreign service providers.</li> </ul>
Transport, distribution, and logistics	<ul style="list-style-type: none"> <li>- Restriction on commercial presence.</li> <li>- In logistics: role of government monopolies in some logistics-related sectors.</li> </ul>
Health services	<ul style="list-style-type: none"> <li>- People-related regulations, e.g., licensing, training of local staff; number of nationals in foreign hospitals.</li> <li>- Type of establishment and scope of ownership</li> </ul>
Business process outsourcing and other off-shored services	<ul style="list-style-type: none"> <li>- Availability of a large pool of human resources</li> <li>- Foreign direct investments</li> <li>- Rules on data security and intellectual property rights</li> </ul>
Business and professional services	<ul style="list-style-type: none"> <li>- Mutual recognition agreements to facilitate trade in professional services at the same time ensuring consumer protection</li> </ul>

Some competitive advantages may already be fully implemented. In those cases, the task is to focus on communicating those advantages to the marketplace.

For introducing the model of competitive advantage for services, we choose to present Matthysens and Vandembemt qualitative research method. They have chosen



marketing and business manager for focus groups in order to highlight the specific nature of competitive advantage in service industries. They were invited to write on papers the key success factors individually, after that the moderator inventoried all these factors and then he stimulated the participants to review their suggestions by discriminating:

-“value contributors from qualifiers” and “failure preventers from success producers” on which a differentiated competitive position can be based.

After the discussions the two authors discussed, integrated and synthesized the results from the two lists. This element of a plan is often called a marketing or brand building strategy. This plan focuses on target audiences, messages, communications techniques, budget and schedule.

There is another type of implementation that is needed to be considered as well. If a new strategy is planned to implement that involves developing a completely new characteristic of the firm, you will need to plan how that is going to happen. Does it involve new hires? Training existing staff? Changing policies and procedures? Acquisitions? These sorts of major organizational changes do not happen on their own. They must be planned for and diligently implemented.

The competitive environment is the institutional conditions for coordinating the activities of the subjects of market relations.

The need for tangible and intangible services arises on the basis of socio-economic conditions, scientific and technical progress, climate, geographical-historical and national conditions. The needs for various services and consumer goods are interrelated. The main factor affecting these needs is the level of development of material production. At the same time, the needs for services affect production (the emergence of new production in material production, the expansion of old production). In developed countries, the state regulates and plans these relations.

Correct and high-quality determination of needs for material services and consumer products is one of the main conditions for the development of material production. The number of the population, its income, the level of prices, the number of enterprises (organizations, institutions) and their level of technical equipment, etc., greatly affect the needs for industry services. The service sector (in economic relations) has its own characteristics. They can be seen at:

- it differs from the sector producing material goods (industry, agriculture, etc.) by its orientation. The activity of this field is aimed at creating social conditions for human life and facilities for the continuous operation of enterprises (organizations, institutions);

- labor in the service sector is fundamentally different from labor in production. The work of a field employee depends on the needs (requirements) of individuals and legal entities, and requires dedication from the employees working in it;
- the natural factor in the field is not as important as in production;
- the service sector is relatively less mechanized and automated;
- field service serves for consumption;
- service sector networks (including educational and healthcare institutions) are located in all regions of the country. Other industry sectors do not have this feature;
- financing of some sectors of the service sector is carried out in two ways: on the basis of estimates and extra-budgetary funds.

**The below table shows types of services and comparison of their share between 2020-2023**

**Table 2**

<i>Types of services</i>	<i>Share, billion. soum (2023 y)</i>	<i>Growth rate compared to 2020, %</i>
Communication and information services	3849,7	107,8
Financial services	12292,7	159,5
Transport services	20217,6	104,8
Autotransport services	8965,0	101,0
Accommodation and food services	1998,2	105,5
Trading services	17344,7	104,1
Services related to real estate	2101,7	104,5
Services in the field of education	2384,9	121,0
Services in the field of health	991,4	118,0
Rental services	1369,9	101,6
Computer and household goods repair services	1133,0	103,3
Personal services	1679,7	104,5
Services in the field of architecture, engineering research, technical testing and analysis	1159,2	129,9
Other services	2112,2	103,6
<b>Total</b>	<b>68634,9</b>	<b>113,2</b>

In January-May 2023, the growth rate of financial services was 159.5%. At the same time, the highest growth rates are services in the field of architecture, engineering research, technical testing and analysis (129.9%), services in the field of education (121.0%), as well as in the field of health in services (118.0%). (**Table 2.**)

Resource sources of the service sector are mainly related to human labor. If more than 60 percent of raw materials and materials are used in production, such resources are used less in the service sector. Relatively low material costs are used in the field, and more services are provided.

Material resources in the service sector include material elements of current costs. They include products produced in other sectors of the economy (books, food, textbooks), electricity, fuel, components, etc. Long-term assets form the basis of the material and technical base of the service sector. These include buildings, structures, vehicles, equipment, etc. The development of the material and technical base necessarily depends on the change of the above elements.

From this point of view, the following main directions of the development of the material and technical base of the industry can be noted:

- expanding industry networks and providing employees with the necessary tools and equipment, and consumers with the necessary items;
- creation of additional conditions for consumers (number of seats for each student in schools, place for patients in hospital, improvement of service places, etc.);
- enrichment of material resources of service types (provision of diagnostic and treatment equipment, video equipment, computers);
- reducing costs of live labor service type.

In the conditions of the modern market economy, the tasks of the service industry are as follows:

- rapid development of the industry by increasing the level of mechanization and automation of service processes;
- taking into account the national nature of the republic, to rapidly develop institutions belonging to the service sector in rural areas and, as a result, to reduce the difference in the living standards of rural and urban residents;
- increasing the share of services provided on the basis of privileges in the general services provided to the population (certain household services provided to employees of the education and health sectors and pensioners, etc.);
- attracting labor resources employed in other sectors of the national economy to industry sectors and allowing them to fully use their potential;
- creating conditions for increasing free time of the population and using it wisely.

Reforming the economy and developing competition in the service sector are inextricably linked with national economic policy, financial stabilization, anti-inflationary and other anti-crisis measures, as well as export and import policy [18].

There is a real need to develop programs for reforming the economy and competition in the service sector, taking into account a number of prerequisites for the formation of a mechanism for effective competition in the service sector, promoting the development of entrepreneurship, combating monopolism and unfair competition, such as private property and freedom to enter into contracts, with as little participation as possible states in the production of ordinary goods and services; openness of markets, promotion of private entrepreneurship; priority of financial and monetary regulatory levers rather than direct government intervention.

## CONCLUSION

Developing the service sector can yield far-reaching benefits for Uzbekistan's economy. Due to its labor-intensive nature, a large and growing service sector can generate millions of jobs for the region's huge workforce and thus promote more inclusive growth. Extensive synergies between the service and industry sectors mean that service sector development can lift productivity throughout the economy. Those synergies are all the more evident in modern, high value-added service industries such as finance, information and communication technology, and professional business services. In light of the growing tradability of services, partly a consequence of technological progress, upgrading its service industries will augment Asia's gains from international trade in services.

Diversification and modernization of industry sectors are of great importance in the development of the service sector and its efficiency improvement. For this, it is appropriate to create a healthy competitive environment in the service sector. With the growth of these services, a number of problems can be solved. In particular, along with the creation of new jobs in our country, the problem of employment will be solved, the need for services of the production process will be satisfied, and finally, the standard and quality of life of the population will be increased.

The high density and variety of specializations of companies contribute to the adaptation of the economy to long-term changes. The emergence of new players in the market increases competition, increases the volume of supply, which leads to price reduction. As a result, the population frees up financial resources, which it can use to consume other goods, which, in turn, puts upward pressure on aggregate output. This is achieved through the formation of competition in the service sector.

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## ОЛИЙ ТАЪЛИМ МУАССАСАЛАРИ РЕЙТИНГИНИ АНИҚЛАШ МАСАЛАЛАРИ

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***Аннотация.** Мақолада олий таълим муассасалари рейтингининг моҳияти, унинг мақсади ва мезонлари, халқаро рейтинглар ҳамда АҚШ, Буюк Британия, Германия, Польша, Япония ва Россияда олий таълим муассасалари рейтингини баҳолаш методлари тўғрисида маълумотлар келтирилган. Ўзбекистонда олий таълим муассасалари рейтингини аниқлаш бўйича ҳуқуқий-меъёрий ҳужжатлар ҳамда рейтингни аниқлаш мезонлари, 2022 йил натижалари бўйича рейтинг ҳамда олий таълим муассасалари рейтингини аниқлашни халқаро андозалар асосида такомиллаштириш бўйича олиб борилаётган ишлар ёритилган.*

***Таянч сўзлар ва иборалар:** таълим, сифат, мезон, рейтинг, академик имконият, миллий рейтинг.*

### **КИРИШ**

Рейтинг олий таълим муассасаларидаги таълим сифатини таққослаш усули ҳисобланиб, таълим хизмати истеъмолчиларига – таълим олувчиларга, кадрларга буюртма берувчиларга ва таълим тизимини бошқарув органларига таълим муассасалари нуфузига оид маълумот тақдим этиш мақсадида амалга оширилади. Рейтинг олий таълим муассасасининг ёки унинг мавжуд таълим йўналишлари ва мутахассисликлари бўйича фаолиятини акс эттирувчи кўрсаткичлар мажмуасидан иборат бўлиб, уларнинг таълим тизимидаги мавқеини белгилайди [1].

Рейтинг - бу баҳоланаётган бир таълим муассасасининг бошқасидан устунлигини тавсифлайдиган сон бўлиб, у кўпинча алоҳида кўрсаткичлар йиғиндисида асосланадиган шартли интеграл кўрсаткич сифатида ҳисобланади. Рейтингни аниқлаш таълим хизмат кўрсатиш сифатини оширишга қаратилган бўлиб, у:

- таълим хизмати кўрсатиш бозорини ривожлантириш ҳамда такомиллаштириш;

- таълим тизими бошқарув органлари, кадрларга буюртма берувчилар, оналар ва таълим олувчиларга таълим муассасалари нуфузига оид маълумот тақдим этиш мақсадида амалга оширилади.

- жаҳон тажрибаси рейтинг асосан қуйидаги уч туркум кўрсаткичларни баҳолашга қаратилганлигини кўрсатади:

- иш фаолияти натижаларида эришилган кўрсаткичларни баҳолаш;

- таълим муассасасининг амалдаги ҳолатини тавсифлайдиган кўрсаткичларни баҳолаш;

- муассасанинг ички имкониятларини ишга солиш ҳисобига эришиладиган кўрсаткичларни баҳолаш.

Бунда талабалар сифатли таълим олишлари учун яратилган шарт-шароитларга, талабаларнинг ўз мутахассисликлари бўйича ишга жойлашганликларига оид кўрсаткичларни баҳолаш алоҳида ўрин тутди [2].

### **TADQIQOT METODLARI**

Tadqiqot jarayonida ilmiy va o'quv-uslubiy adabiyotlar tahlili, pedagogik kuzatuv, qiyosiy tahlil, umumlashtirish, pedagogik tajriba-sinov va forsayt metodlaridan foydalanildi.

### **TADQIQOT NATIJALARI VA MUHOKAMALAR**

Таълим муассасалари рейтингларини ташкил этиш ва аниқлаш усуллари турли-туман бўлиб, давлатларнинг таълим тизимлари ва олий таълимни баҳолаш усуллари билан бевосита боғлиқдир. Ҳозирги кунда бир қатор хорижий давлатлар, жумладан Америка Қўшма Штатлари, Буюк Британия, Германия, Польша, Нидерландия, Испания, Япония, Хитой, Россия, Украина каби давлатлар таълим муассасалари рейтингини аниқлаш ва қўллаш бўйича бой тажрибага эга. Улардаги мавжуд рейтинг тизимлари турли ёндошувлар асосида таълим тизимлари хусусиятларидан келиб чиққан ҳолда ишлаб чиқилган [3].

**АҚШ**да рейтинглар ўтказишда уч гуруҳ сифат кўрсаткичлари ишлатилади: талабалар муваффақияти, ўқитувчилар таркиби эришган ютуқлари ва ОТМнинг академик имкониятлари. Ушбу кўрсаткичларни рейтинг кўринишига ўтказишда вазнлаш ва жамлаш усули қўлланилади.

**Буюк Британия**да рейтингни оммавий ахборот воситалари статистик манбалардан олинган маълумотларга асосланиб аниқлайди. Кўрсаткичлар орасида илмий ишларга ҳам эътибор қаратилган. Таълим муассасаси ҳақидаги кадрлар истеъмолчилари фикрлари асосий кўрсаткичлардан бири сифатида қабул қилинади.

**Германия** рейтинг тизими биринчи навбатда мактаб битирувчилари учун мўлжалланган бўлиб, бунда мутахассисликлар рейтинги аниқланади. Натижада,



университетлар яхши, ўрта ва ёмон гуруҳларга бўлинади. Рейтинг бўйича қарор қабул қилишда асосан университетлар ва улар жойлашган шаҳарлар ҳақида маълумотлар, талабалар контингенти, курслар ва ўқитиш бўйича асосий маълумотлар, ишга жойлашиш, меҳнат бозори ҳамда профессор-ўқитувчилар ва талабалар фикрлари ҳисобга олинади.

**Польшада** ОТМлар рейтинги уларнинг хусусиятларини ҳисобга олган ҳолда алоҳида олиб борилади (умумуниверситетлар рейтинги, хусусий университетлар рейтинги, ижодий университетлар рейтинги). Рейтингда ўтган йил рейтинги натижалари ҳам маълум бир вазн билан ҳисобга олинади. Хусусий университетлар рейтинги бевосита университетда олинган ҳамда иш берувчилар ва ўқитувчилар орасида ўтказилган сўровномалар асосида аниқланади.

**Японияда** университетлар рейтинги асосан 3 та йўналиш бўйича олиб борилади: таълим фаолияти, илмий тадқиқот фаолияти ва ривожланишга қўшилган ҳисса. Сўнгги вақтларда талабалардан ўтказилган сўровномалар ҳам кенг қўлланилмоқда.

**Россияда** ОТМларнинг рейтингини аниқлаш 2001 йилдан буён амалга оширилмоқда. Ҳозирги кунда рейтингнинг 2 модели, яъни таълим вазирлиги рейтинги ва оммавий ахборот воситалари рейтинги мавжуд. Биринчи моделда рейтинг экспертлар фикри ва статистик маълумотларга асосланган, аммо иш берувчилар фикри камроқ ҳисобга олинади. Иккинчи модел нисбатан мустақил, аммо етарли даражада илмий асосга эга эмас. Ушбу икки моделнинг ижобий томонларини ҳисобга олиш мақсадида нодавлат рейтинг Агентлиги ташкил этилган. Рейтингни тузиш учун ижтимоий сўровномалар ва эксперт баҳолаш, битирувчилар сифатини иш берувчилар томонидан баҳолаш, ОТМни ва унинг таълим дастурларини битирувчилар томонидан баҳолаш натижалари ишлатилади. Шунингдек, таълим йўналишлари ва мутахассисликлар бўйича ҳам таълим дастурлари рейтинг аниқланади. Тўпланган маълумотлар айрим мезонларга ажратилиб, уларни вазнлаш, жамлаш ва умумий мезонни аниқлаш учун илмий асосга эга услубият қўлланилган.

**Ўзбекистондаги** олий ўқув юртларида таълим сифатини баҳолаш ва таққослаш асосида рақобатбардошликни ривожлантириш, таълим сифатини янада юксалтириш, йўл қўйилаётган камчиликларни аниқлаб, аниқ ва пухта истиқбол режаларни шакллантириш мақсадида Вазирлар Маҳкамасининг 2012 йил 29 декабрдаги 371-сон Қарори асосида 2013-йилнинг 1-январидан бошлаб мамлакатимизда олий ўқув юртлари фаолиятини баҳолашнинг рейтинг тизими жорий этилган. Ўзбекистон Республикаси Вазирлар Маҳкамасининг 2019 йил 7

июндаги 467-сон қарори билан “Олий таълим муассасалари рейтингини аниқлаш тартиби тўғрисида Низом” тасдиқланган .

Рейтинг тизимини жорий этишнинг маъноси ва аҳамияти фақат ҳар бир олий ўқув юртининг мамлакатимиз олий ўқув юртлари орасида қандай ўринни эгаллаб тургани ҳақида ҳолис маълумотга эга бўлишдан иборат эмас. Энг асосийси, шу аснода олий ўқув юртлари ўртасида соғлом рақобат ва мусобақа муҳитини шакллантириш, шунингдек, ишимиздаги эътибордан четда қолиб келаётган жиҳатлар ва резервларни баҳолаш, юқори малакали кадрлар тайёрлаш даражаси ҳамда сифатини янада ошириш бўйича аниқ таклифларни ишлаб чиқиш имконияти пайдо бўлади [1].

Олий таълим муассасалари рейтингини тузилмасида асосан қуйидаги 4 та кўрсаткичлар ҳисобга олинган:

1. Ўқитиш сифати даражасининг индекси
2. Талабалар ва битирувчилар малакасининг индекси
3. Олий ўқув юртининг илмий салоҳияти
4. Бошқа кўрсаткичлар

Ўқитиш сифати даражасининг индексида хорижий олий таълим муассасалари даражасига хорижий олий таълим муассасалари даражасига (PhD) эга бўлган, жаҳондаги 500 та энг яхши олий ўқув юртлари жумласига кирадиган профессор-ўқитувчилар таркиби улуши, ўқитиш сифати даражаси, йил мобайнида олий ўқув юртлари ўқитувчилари томонидан нашр этилган дарсликлар ва ўқув қўлланмалари сони, хорижий ўқитувчилар ва хорижий талабалар улуши, хорижий олий ўқув юртлари билан алмашиш дастурлари сони, хорижий тилда ўқитиладиган таълим (мутахассисликлар) йўналишлари сони, профессор-ўқитувчилар таркибининг хорижий тилларни ва ахборот-коммуникация технологияларини билиш даражаси ва ўқув жараёнида лаборатория ва ёрдамчи ускуналардан фойдаланиш даражаси каби мезонлар киритилган [1].

Талабалар ва битирувчилар малакасининг индексида битирувчилар малакасини иш берувчилар томонидан баҳоланиши, халқаро ва республика олимпиадаларида ва нуфузли танловларда мукофотлар (дипломлар) ва совринли ўринлар билан тақдирланган талабалар сони, ўқишни тугатгандан кейин 6 ой мобайнида мутахассислик бўйича ишга жойлашган битирувчилар улуши каби кўрсаткичлар ҳисобга олинган.

Олий ўқув юртининг илмий салоҳиятини баҳолашда хорижий ва ОАК эътирофидаги журналларда чоп этилган мақолалар сони, нашр этилган монографиялар сони, ҳимоя қилинган докторлик диссертациялари сони, чет эл

грантлари ва давлат грантлари, иқтисодиёт тармоқлари буюртмалари бўйича илмий –тадқиқот ишлари (хўжалик шартномалари) асосида олинган маблағлар эътиборга олинган [4].

Бошқа кўрсаткичларга ахборот-ресурс марказининг ўқув адабиётлари, шу жумладан электрон китоблар билан таъминланганлиги, электрон ресурслардан масофадан фойдаланишнинг мавжудлиги, ўқув жараёнида ва илмий-тадқиқот ишида ахборот-коммуникация технологиялари воситаларидан фойдаланиш даражаси, олий ўқув юрти веб-сайтининг сифати, касб-хунар коллежларида ўқув машғулотларини ўтказаётган профессор-ўқитувчилар сони киритилган.

Мамлакатимиз олий таълим тизимини 2030 йилгача ривожлантириш концепциясида республикадаги камида 10 та олий таълим муассасасини халқаро эътироф этилган агентликлар (Quacquarelli Symonds World University Rankings, Times Higher Education ёки Academic Ranking of World Universities) рейтингининг биринчи 1000 та ўриндаги олий таълим муассасалари рўйхатига, шу жумладан, Ўзбекистон Миллий университети ва Самарқанд давлат университетини биринчи 500 та ўриндаги олий таълим муассасалари рўйхатига киритиш белгиланган. Миллий рейтинг олий таълим муассасаларимизнинг нуфузли халқаро рейтинглардан жой олишига кўмаклашиш мақсадида ташкил этилган бўлиб, бу йўналашидаги ишларни жадаллаштириш мақсадида Таълим инспекцияси ва Олий ва ўрта махсус таълим вазирлиги томонидан “Йўл хатираси” тасдиқланган. Халқаро рейтинг индикаторларига мослаштирилган миллий рейтинг тизими орқали олий таълим муассасаларидаги сифат кўрсаткичларини йилдан-йилга яхшилаб бориш орқали уларнинг дунё рейтингда юқори ўрин эгаллашларини таъминлаш режалаштирилган [5].

Ўтган давр мобайнида ривожланган давлатлар тажрибалари чуқур ўрганилди. Халқаро экспертлар гуруҳи жалб қилиниб, амалдаги миллий рейтинг тизими қайта таҳлил қилинди. QS (Quacquarelli Symonds) ва THE (Times Higher Education World University Rankings) каби нуфузли рейтинг агентликларининг мутахассислари миллий рейтинг тизимимиз билан танишиб чиқдилар ва тегишли тавсияларини бердилар. Бугунги кунда рейтинг тузиш методикасини янада такомиллаштириш бўйича ҳамкорлик ишлари давом этмоқда. Янгиланган методикага олий таълим муассасаларининг битирувчилари ҳақида иш берувчилар баҳоси, талабаларнинг мутахассислик фанларини билиш даражаси, профессор-ўқитувчилар яратган илмий мақолаларнинг «Web of Science» ҳамда «Scopus» каби халқаро базалардаги улуши, халқаро индекслар маълумотлари асосида илмий нашрларга иқтибослар сони, олий таълим муассасаси илмий-

тадқиқот фаолиятининг натижадорлиги, таълим муассасасидаги ижтимоий-маънавий муҳит каби янги индикаторлар киритилди [5].

### ХУЛОСА

Олий таълим, фан ва инновациялар вазирлиги 2023 йилда Олий таълим муассасаларининг (ОТМ) умумий рейтингини эълон қилди. Мазкур рейтингда вазирлик илк бор 98 та олий таълим муассасасининг 2022 йилдаги фаолият самарадорлиги баҳолади. ОТМлар 4 та соҳага ажратилган ҳолда сараланди: Ижтимоий-гуманитар соҳа — 35 та; Санаъат, маданият — 6 та; Тиббиёт соҳаси — 9 та; Техника, технология, қурилиш, қишлоқ хўжалиги — 26 та. Қайд этилишича, рейтингни тузишда 12563 нафар талабанинг фикрлари ва мутахассислик фанлари бўйича билмлари ўрганилди. Шунингдек, 31379 нафар профессор-ўқитувчиларнинг чет тилларини билиш даражаси ва 3740 нафар иш берувчиларнинг фикрлари сўровнома асосида ўрганилди [6].

Буюк Британиянинг Times Higher Education агентлиги томонидан эълон қилинган World University Rankings – 2023 рейтинг натижаларига кўра, бу йил республиканинг яна 18 та олий таълим муассасаси «репортер» мақомида қайд этилди. Бу билан Топ-1000 талик рейтингдан жой олиш учун даъвогарлар ўтган йилги 10 тадан 28 тага етди. Ушбу рейтингда университетлар 4 та йўналишдаги самарадорлик кўрсаткичлари баҳоланди: ўқитиш, тадқиқот, таълим сифати ва халқаро истиқболлар. Мазкур 28 та олий таълим муассасаси ТНЕ нуфузли рейтингларига кириш учун номзод сифатида танланиб, бунда рейтинг агентлиги уларга яқиндан ёрдам беради. Жорий йил ушбу рейтингда дунё миқёсида 1799 та университет қайд этилди. 526 та университет «репортер», яъни даъвогар университетлар номинациясига эга бўлди [7].

Таъкидлаш жоизки, Ўзбекистоннинг Тараққиёт стратегиясида 2026 йилга қадар 10 та салоҳиятли олий таълим муассасасини QS ва ТНЕ халқаро рейтингларига кириши учун мақсадли тайёрлаш кўзда тутилган. Унга кўра, олий таълим муассасаларининг салоҳияти ва ўзига хос хусусиятидан келиб чиқиб, халқаро рейтингларга киритиш бўйича 5 йилга мўлжалланган мақсадли дастурларни ишлаб чиқиш, бу асосда рейтингларга киришини таъминлаш асосий вазифа этиб белгиланган [8].

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## ТЕЛЕВИЗИОННОЙ СТИЛИСТИКИ, ПРАВИЛА ДОБРОТНОЙ РЕЧИ В РАБОТЕ ТЕЛЕЖУРНАЛИСТОВ ПЕРЕДАЧ НА ТЕЛЕВИДЕНИИ

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***Аннотация:** Статья "Телевизионной стилистики, правила добротной речи в работе тележурналистов передач на телевидении" исследует различные аспекты языкового оформления передач на телевидении. Авторы рассматривают влияние формата и стиля передачи на языковую организацию, роль ведущих в создании уникального языкового стиля и использование субтитров и переводов для преодоления языковых барьеров. Они также обсуждают использование различных диалектов, акцентов и языка рекламы в телевизионных передачах.*

***Ключевые слова:** телевидение, телепрограммы, языковая специфика, формат передачи, стиль передачи, ведущие, субтитры, переводы, диалекты, акценты, язык рекламы.*

### **Введение:**

Телевидение является одним из наиболее популярных и широко используемых средств массовой информации в современном мире. Телепрограммы различных жанров и форматов достигают миллионов зрителей по всему миру и оказывают значительное влияние на нашу культуру, мировоззрение и языковые предпочтения.

В данной статье мы сосредоточимся на изучении языковых характеристик телепрограмм и их влиянии на коммуникацию и восприятие аудиторией. Мы исследуем различные аспекты языка, используемого в телевизионных передачах, включая форматы программ, стили речи, роль ведущих, использование субтитров и переводов, диалекты и акценты, язык рекламы и межкультурную коммуникацию.

Цель нашего исследования заключается в понимании того, какие языковые особенности присутствуют в телевизионных программах, как они влияют на восприятие аудиторией и каким образом они отражают культурные и социальные аспекты. Мы также рассмотрим вопросы языковой адаптации для

различных аудиторий и культур, а также влияние телепрограмм на языковые навыки и развитие зрителей.

Исследование языковых характеристик телепрограмм имеет важное значение для понимания коммуникативных процессов, происходящих в среде телевизионного вещания, и может быть полезным для создания качественного телевизионного контента, адаптированного к нуждам и интересам различных аудиторий.

Телевидение прямо и непосредственно связано с нами через информационные программы, т. е. через выпуски новостей. Действительно, день или по крайней мере вечер у большей части телезрителей разбит на время до и после "Вестей", "Итогов" или программы "Время". Негативный психологический отклик, сопровождающий сообщения о военных действиях, катастрофах или бюджетных катаклизмах, компенсируется возможностью предельно откровенной зрительской реакции на увиденное и услышанное в новостях - от одобрительного приятия ("Вот именно!") до критической отстранённости ("Еще чего!"), осознанием собственной вменяемости на фоне неразумного мира за порогом дома, выходом из одиноких сомнений и тревог и обретения своего круга пусть виртуальных, но врагов или единомышленников. Получается, что воздействие телевидения на аудиторию, роднит его с воздействием фольклора.

В телевизионной речи все более необязательным становится точный выбор языкового средства, все более обязательным становится обращение к устно-литературной норме, которая не совпадает. Преобладает тенденция к расширению «свободных жанров» и соответственно к сокращению «протокольной» части телепередач.

Теперь нужно рассмотреть, как российская телевизионная речь влияет на языковое сознание русских потребителей информации. Это производится четырьмя основными способами:

1. Многократно и регулярно повторяя метафоры, клишированные речи, экранные журналисты вызывают устойчивые реакции зрителей на использование данных языковых средств в комментариях, что приводит к усилению коннотативности (поиска скрытого смысла) русского языкового сознания (российская политическая сцена, знаковая фигура, знаковое событие, кадровая чехарда, политический диагноз, информационная война, карманная Дума, верный путинец и т. д.).

Общие фоновые знания находящиеся по обе стороны экрана обеспечивают предсказуемые ассоциации, связанные с понятиями семья, интрига, игра, карты, театральное действо. Примеры: (о Лужкове и его окружении) московская семья

(ОРТ); одна из ключевых фигур так называемого "семейного призыва" (НТВ); кремлевская семья (ОРТ); интрига, которая закручивается вокруг премьера (НТВ); виртуозная политическая интрига (ОРТ); игра на импичмент президента (НТВ); коммунисты боятся оказаться вне игры (ОРТ); козырная карта с изображением Юрия Скуратова... была извлечена из российской политической колоды (ОРТ); экс-премьера провоцируют раскрыть карты (НТВ); официальные власти держат мхатовскую паузу (НТВ); тем, кто сеет хлеб, некогда следить за политическим спектаклем в Москве (ТВ-6); (о заявлении Ельцина об отставке) сцена в кабинете останется в истории политического театра (НТВ); кремлевские кукловоды (ТВ-6);

2. Активно обращаясь к общеизвестным феноменам, телеведущие провоцируют формирование языкового сознания русской телеаудитории. Причем, несмотря на относительно молодой возраст телевидения по сравнению с другими источниками "крылатых" явлений (литературой, кино), и у него уже накоплен свой фонд текстов и визуальных явлений - особенно в области рекламы и так называемого политического фольклора (ср.: Зюганов и Березовский, как хлеб и "Рама", созданы друг для друга (РТР); В оппозиции стало скучно: ноль перспектив и, что немаловажно, ноль калорий (ведущий повторяет жест из рекламы "Пепси") (РТР); (о предстоящем чемпионате мира по футболу) Мужчины хотели бы, чтобы их подруги не заставляли их выбирать между футболом и... - ну, вы знаете. А мужчинам в эти критические дни посоветуем... (ТВ-6); Хотели как лучше, а вышло даже хуже, чем всегда (РТР)

3. Используя индивидуальные краски, единичные приемы, авторы новостных программ рассчитывают на мгновенную реакцию, чувство юмора, определенный уровень интеллекта зрителей - так возникают неожиданные метафоры, афоризмы - перевертыши, новые идиомы, (о панике в стране) эти настроения и есть фашистские дрожжи (РТР); денежный кран правительства (РТР); нефтяные деньги (ТВ-6); газовые отношения (между Украиной и Россией) (ОРТ); кругосветное политическое путешествие... премьерская кругосветка (ТВ-Центр); (о протесте пивоваров против постановления Главного санитарного врача России) пивная война; всероссийский пивной путч (НТВ); откупорить валютную кубышку (РТР); политический бег на месте (НТВ); (о создании новой партии, объединившей многие старые силы) большой политический пылесос (ОРТ); возможности политического клонирования... каждый губернатор назначит своего преемника по схеме "Ельцин - Путин" (ОРТ); Совет Федерации согласился сделать себе харакири (НТВ); кадровый листопад (НТВ); (о гимне) музыкально-политическая дискуссия (ТВ-6);



Общеизвестно интенсивное проникновение жаргонизмов в новостные тексты: претенденты на посты в правительстве "легли на дно"(РТР); банки кинули миллионы вкладчиков (НТВ); дает дуба нашумевший план..."Транскаспия"(РТР); вся политическая братва уже конкретно стартует в направлении парламентских выборов (РТР); президент обещал не сдавать своего премьера (НТВ). С определением типов эфирного воздействия наблюдения относительно целей, с которыми говорящий употребляет так называемые стереотипы: крылатые слова, цитаты, афоризмы - т. е. то, что мы обобщаем как прецедентные тексты. "К речевым стереотипам относятся такие, которые говорящий употребляет как чужую речь, и сам это ощущает, и это же ощущает слушающий!". "Чужой текст-стереотип возникает либо в знак согласия, либо в знак протеста... стереотип всегда создает дополнительную строку в высказывании. То есть он в широком смысле супер сегментен". Идиоматика имеет социальную ориентацию, а функция социализации в наше время наиболее ярко "выявляется при употреблении клише-цитат, стереотипов современных средств массовой информации, названий популярных фильмов, рефренов шлягеров и т. д." .

Действительно, репортажи могут начинаться с анекдота, притчи, песни, детской считалки: (начало репортажа о юбилее Г. Алиева) На свадьбе узнаешь о том, сколько у тебя родственников, на похоронах - как тебя любили, на юбилеях - как тебя уважают. Клятву скрепляют кровью, дружбу скрепляют нефтью (РТР); (о сокращении армии и высшего военного руководства - звучит начало песни) Как хорошо быть генералом!.. (ОРТ); С главным событием в сфере бизнеса в эти полгода связана загадка: А и Б сидели па трубе, пересели на алюминий (НТВ).

Приведу примеры, иллюстрирующие употребление в аналитических и новостных программах оригинальных или перефразированных прецедентных текстов - от пословиц до цитат из классики: Неисповедимы пути реформы (НТВ); Новое правительство повторяет вслед за Высоцким: "Чую с гибельным восторгом: пропадаю, пропадаю!" (ОРТ); Банк полагает, а правительство располагает (РТР); Все это было бы смешно, когда бы не было так (НТВ); Теперь в моде высокий партийный стиль и аплодисменты, переходящие в овации (НТВ); Маслюков объяснил Западу, что в России дважды два не всегда четыре, чем подтвердил мнение поэта по поводу того, что умом Россию не понять (РТР); Премьер в России больше чем премьер (ОРТ); Язык Селенева велик и могуч (РТР); Чубайс собирается сообщить граду и миру о своих решениях (РТР).

Язык телекомментариев, с одной стороны, потакает "обывательской тяге к укрупнению факта", а с другой стороны – её же и формирует, используя перцептивно маркированные, не нейтральные языковые средства. Прибегая к

определенному словесному инструментарию и аранжируя свою речь так, чтобы соблюсти законы жанра (новостной или аналитической программы), но и пытаясь внести нечто нестандартное и копилку своего идеостилия, телеведущие одновременно отвечают этим нашим русским всеобщим коммуникативным ожиданиям. В отличие от доперестроечных телепередач, сегодня в телевещании допускается (а иногда и поощряется) употребление бранной лексики, в том числе и мата. Подобные выражения ранее именовались "неприличными", "непристойными", а также "непечатными" либо "нецензурными". Сегодня все эти определения можно считать устаревшими: такая лексика уже в течение нескольких лет беспрепятственно присутствует на страницах многих художественно-литературных и информационно-публицистических изданий: цензуры, официально регламентируемой, кажется, не существует. Примеры, думаю, приводить излишне.

Что же касается понятия непристойности (неприличия) - те его старательно и настойчиво вытесняют из системы этических констант общественного сознания.

В последние годы XX века русская ментальность трансформировалась и развивалась под влиянием текстов средств массовой информации. Но можно с уверенностью говорить о том, что это был - и пока продолжается - в первую очередь "телевизионный этап" становления языкового сознания нашего русского современника.

### **Заключение:**

В данной статье мы исследовали различные аспекты языковой специфики телепрограмм, обращая внимание на их формат, стиль, роль ведущих, использование субтитров и переводов, диалекты и акценты, язык рекламы, а также межкультурную коммуникацию. Полученные результаты позволяют сделать следующие выводы:

1. Формат и стиль передачи играют важную роль в языковом оформлении. Различные жанры телепрограмм требуют соответствующего выбора слов, интонации и темпа речи.

2. Ведущие телепрограмм создают уникальный языковой стиль и атмосферу передачи. Их выбор слов, манера общения и использование жаргона могут оказывать значительное влияние на восприятие аудиторией.

3. Использование субтитров и переводов является важным аспектом для преодоления языковых барьеров и обеспечения понимания аудиторией, особенно в случае трансляции передач на другом языке.

4. Различные диалекты, акценты и используемый язык в рекламных роликах могут добавлять разнообразие и отражать культурные особенности и предпочтения аудитории.

В целом, понимание языковых характеристик телепрограмм является важным для создания качественного контента и обеспечения удовлетворения

потребностей и предпочтений аудитории. Дальнейшие исследования в этой области помогут более полно раскрыть языковую специфику телевизионных передач и развить новые подходы для улучшения коммуникации и взаимодействия с зрителями.

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## THE APPLICATION OF ARTIFICIAL INTELLIGENCE IN MEDICINE

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***Annotation:** This article delves into the transformative role of Artificial Intelligence (AI) in reshaping healthcare, with a focus on its historical roots, current applications, and future potential. It navigates through the evolution of AI, from its conceptualization in the 1950s to its contemporary applications in medicine, particularly in drug discovery, medical diagnosis, and dentistry. The narrative highlights the challenges and ethical considerations accompanying AI integration in healthcare and emphasizes the collaborative relationship between human expertise and machine precision. The comprehensive exploration of AI's impact in diverse medical domains underscores its pivotal role in advancing patient care and medical innovation.*

***Key words:** Medical diagnosis, Disease detection, Treatment planning, Personalized medicine, Drug discovery, Machine learning, Deep learning, High-Performance Computing (HPC), Pharmaceutical companies Digital dentistry, Image-based disease detection, Diagnosis support systems, Robotic support in dentistry, Oral healthcare.*

### Introduction

Artificial Intelligence (AI) has gained significant attention in recent years, particularly for its potential to revolutionize various industries, including healthcare. AI involves machines, especially computer systems, simulating human intelligence processes, such as learning from data, recognizing patterns, and making informed decisions. The growing interest in AI within the medical field is evident as researchers and healthcare professionals acknowledge its capacity to transform healthcare. AI can analyze large sets of medical data, make predictions, and enhance patient care, from diagnosing diseases to creating personalized treatment plans. However, as AI technology advances in medicine, it brings forth challenges and ethical considerations that demand attention. These include issues like data privacy, algorithmic bias, and potential impacts on the doctor-patient relationship. It is crucial for healthcare

professionals and policymakers to carefully consider and address these challenges as they incorporate AI into medical practices.

What is artificial intelligence?

Artificial Intelligence is a branch of computer science focused on creating systems that can perform tasks that would typically require human intelligence. These tasks include: problem-solving, learning, understanding natural language, recognizing patterns, and adapting to new situations. AI aims to develop machines or software that can exhibit traits like reasoning, perception, and decision-making. According to James H. Fetzer The field of artificial intelligence (AI) presents a captivating challenge in precisely defining its subject matter. This challenge comprises two aspects: understanding the nature of the artificial and having a suitable comprehension of intelligence. The term "artificial" in artificial intelligence refers to its origin and creation through human invention and ingenuity, as opposed to arising from natural, especially biological or evolutionary, influences. Essentially, artificially intelligent entities distinguish themselves from naturally intelligent ones as creations with specific attributes not typically found in non-artificial entities. In other words, these entities possess a particular property, intelligence, as a result of a specific process—being intentionally created, designed, or manufactured. (Fetzer, 1990) " "As we embark on an exploration of Artificial Intelligence (AI) and its transformative potential in healthcare, it is imperative to trace the historical roots that have shaped this dynamic field. The burgeoning interest in AI, as discussed earlier, is part of a continuum that spans several decades. The evolution of AI can be traced back to the 1950s, gaining momentum over the years. Over the last five decades, AIM has changed considerably. Since the advent of ML and DL, AIM applications have grown, allowing for individualized care rather than algorithm-only therapy. In the future, predictive models could be utilized for disease diagnosis, therapeutic response prediction, and perhaps preventative medicine.<sup>7</sup> AI may increase diagnostic accuracy, provider workflow and clinical operations efficiency, disease and treatment monitoring, procedure accuracy, and overall patient outcomes. The progression of the AI platform in medicine is tracked and arranged below by distinct time periods of crucial shift. (J.K. Ruffle, A.D. Farmer, Q. Aziz, 2019)

### **The roots of artificial intelligence**

The historical roots of computer science date back to 1843 when Ada Lovelace formulated the initial algorithm for Charles Babbage's analytical engine, serving as a precursor to modern computers. This era can be considered the prehistoric phase of computer science. Despite the absence of programmable machines, the invention of

Jacquard's loom in 1801, utilizing perforated cards for mechanical control, hinted at the potential of computational control.

The emergence of machines with computation and programming capabilities occurred towards the late 19th century, notably during the US census. The creation of the ENIAC in 1945, exactly a century after Ada Lovelace's algorithm, marked a significant milestone in computer science, effectively serving as a starting point for the field and paving the way for rapid advancements. In 1950, a mere five years after the introduction of the ENIAC, Alan Turing coined the term "artificial intelligence" for the first time. This groundbreaking concept garnered significant attention, leading to the swift proposal of numerous AI algorithms in subsequent years (Nicolas Sabouret Lizete De Assis, 2021). Following these years, the Dartmouth Workshop of 1956, organized by influential figures such as Marvin Minsky, John McCarthy, and senior scientists Claude Shannon and Nathan Rochester of IBM, was predicated on the proposition that "each facet of the process of learning or any other attribute of intelligence can be articulated with such precision that a machine can be designed to replicate it" (McCorduck, 2004) (Crevier, 1993) (Stuart J. Russell and Peter Norvig, 2003) (Newquist, 1994) (Allen Newell and H. A. Simon, 1963). During the 1980s, corporations globally embraced a type of AI program known as "expert systems," and there was a shift in mainstream AI research towards emphasizing knowledge. Simultaneously, the Japanese government strongly supported AI through its fifth-generation computer project. Another positive development in the early 1980s was the resurgence of connectionism in the contributions of John Hopfield and David Rumelhart. Once more, AI experienced notable achievements. (Newquist H., 1994) An expert system is a software application designed to respond to inquiries or address issues within a particular field of expertise, employing logical rules derived from the knowledge of experts. The initial instances of such systems were pioneered by Edward Feigenbaum and his students. Dendral, initiated in 1965, could recognize compounds based on spectrometer readings, while MYCIN, created in 1972, specialized in diagnosing infectious blood diseases. These early examples substantiated the viability of this approach. (McCorduck, 2004) (Crevier, 1993) (Newquist H., 1994) (Stuart J. Russell and Peter Norvig, 2003) Expert systems confined their scope to a narrow domain of specialized knowledge, thereby sidestepping the challenge of dealing with common-sense knowledge. Their straightforward design facilitated the creation of programs and subsequent modifications once implemented. In summary, these programs demonstrated utility, a feat that had eluded AI until that juncture. (Crevier, 1993) (Stuart J. Russell and Peter Norvig, 2003) In 1980, the completion of an expert system named XCON at CMU for the Digital Equipment Corporation marked a

significant triumph. By 1986, this system had proven immensely successful, contributing to annual savings of 40 million dollars for the company (Crevier, 1993) By 1985, companies globally initiated the creation and implementation of expert systems, with expenditures exceeding a billion dollars on artificial intelligence. The majority of these funds were directed towards in-house AI departments. (Newquist H. , 1994) An entire industry emerged to cater to their needs, encompassing hardware firms like Symbolics and Lisp Machines, along with software companies such as IntelliCorp and Aion. (McCorduck, 2004) (Crevier, 1993) (Newquist H. , 1994) (Stuart J. Russell and Peter Norvig, 2003) "On May 11, 1997, Deep Blue achieved a historic milestone by becoming the first computer chess-playing system to defeat the reigning world chess champion, Garry Kasparov. Developed as a specialized iteration of an IBM framework, this supercomputer demonstrated a substantial improvement in performance, processing twice as many moves per second compared to the initial match it had lost, handling a reported 200 million moves per second. In 2005, a robot from Stanford University achieved victory in the DARPA Grand Challenge by autonomously covering 131 miles along an unscripted desert trail. This marked a notable advancement in autonomous vehicle technology. Two years later, a Carnegie Mellon University team triumphed in the DARPA Urban Challenge, navigating autonomously through 55 miles in an urban setting while adhering to traffic regulations and hazards. In February 2011, during a Jeopardy! quiz show exhibition match, IBM's question-answering system, Watson, outperformed the two top Jeopardy! champions, Brad Rutter and Ken Jennings, by a significant margin. This success showcased AI's ability to comprehend and respond to natural language queries in a broad knowledge domain." The narrative of Artificial Intelligence (AI) traces an intricate path through the historical corridors of computer science, from the visionary insights of Ada Lovelace in 1843 to Alan Turing's seminal introduction of the term "artificial intelligence" in 1950. This evolutionary journey, reflective of an unwavering pursuit of innovation, transitions into a contemporary chapter where AI assumes a pivotal role in the realm of medicine, fundamentally reshaping the landscape of healthcare. In this modern epoch, the applications of AI in medicine emerge as tangible embodiments of its transformative potential. Navigating through this convergence of historical context and contemporary progress, distinct applications come to the fore, each playing a decisive role in redefining the parameters of patient care and healthcare delivery. Let us embark on an exploration of these applications, elucidating their contributions to the current tapestry of AI in medicine:

## Drug Discovery and Development

The extensive chemical space, encompassing over  $10^{60}$  molecules, facilitates the generation of a substantial array of drug molecules. (Mak, K.-K. Pichika, M.R., 2019) Nevertheless, the absence of advanced technologies hampers the drug development process, rendering it a laborious and costly endeavor. This challenge can be mitigated through the application of artificial intelligence (AI). (Vyas, 2018) AI has the capacity to identify potential hit and lead compounds, enabling a more expeditious validation of drug targets and streamlining the optimization of drug structure designs. (Mak, K.-K. Pichika, M.R., 2019) (Sellwood, 2018) Despite its merits, artificial intelligence (AI) encounters notable challenges related to data, including issues of scale, expansion, diversity, and uncertainty. "In pharmaceutical companies' datasets for drug development, which may encompass millions of compounds, conventional machine learning (ML) tools often struggle with extensive data sets. While computational models based on quantitative structure-activity relationship (QSAR) can rapidly predict physicochemical parameters, they fall short when predicting intricate biological properties such as efficacy and adverse effects. Challenges faced by QSAR-based models include limited training data, errors in experimental data, and a lack of experimental validations. To address these hurdles, contemporary AI approaches, such as deep learning (DL), and relevant modeling studies are applied for the comprehensive evaluation of drug molecules' safety and efficacy, leveraging big data modeling and analysis. In 2012, Merck conducted a QSAR ML challenge to assess the potential advantages of DL in the drug discovery process within the pharmaceutical industry. DL models demonstrated notable predictive capabilities compared to traditional ML approaches across 15 absorption, distribution, metabolism, excretion, and toxicity (ADMET) datasets of drug candidates (Zhu, 2020; Ciallella, H.L. Zhu, H., 2019). The virtual chemical space is vast and can be visualized as a map representing the distributions of molecules and their characteristics. The concept behind mapping the chemical space is to gather positional data about molecules within it, facilitating the exploration for bioactive compounds. Virtual screening (VS) is instrumental in this process, aiding in the identification of suitable molecules for subsequent testing. Various open-access chemical spaces, such as PubChem, ChemBank, DrugBank, and ChemDB, are available for exploration. Several in silico techniques for screening compounds within virtual chemical spaces, coupled with structure and ligand-based methodologies, offer enhanced profile analysis, contributing to the swift elimination of nonlead compounds and the selection of potential drug molecules, leading to cost savings (Mak, K.-K. Pichika, M.R., 2019). "The process of discovering and developing pharmaceutical drugs is a complex and lengthy journey, often exceeding a decade and



costing an average of US\$2.8 billion. Despite these substantial investments, the road is marked by a high failure rate, with nine out of ten therapeutic molecules falling short during Phase II clinical trials and regulatory approval (Alvarez-Machancoses, O. and Fernandez-Martinez, J.L, 2019). To enhance the drug discovery process, various algorithms, such as Nearest-Neighbor classifiers, Random Forest (RF), extreme learning machines, Support Vector Machines (SVMs), and deep neural networks (DNNs), are commonly used for virtual screening (VS). These algorithms assess synthesis feasibility and predict in vivo activity and toxicity (Alvarez-Machancoses, O. and Fernandez-Martinez, J.L, 2019) (Dana, 2018). In a collaborative effort, major biopharmaceutical companies like Bayer, Roche, and Pfizer have partnered with IT firms to create dedicated platforms for discovering therapies, particularly in fields such as immuno-oncology and cardiovascular diseases (Mak, K.-K. Pichika, M.R., 2019). The drug development process extends beyond molecule discovery to integrating it into a suitable dosage form with specified delivery characteristics. Artificial intelligence (AI) offers a valuable alternative to the traditional trial-and-error approach (Guo, 2002). Computational tools, guided by Quantitative Structure-Property Relationship (QSPR) techniques (Mehta, 2019), address formulation design challenges, including stability issues, dissolution, and porosity. Decision-support tools, employing rule-based systems, select excipients based on physicochemical attributes, with a feedback mechanism overseeing the entire process and making intermittent modifications as needed (Zhao, 2006). The application of various mathematical tools, including computational fluid dynamics (CFD), discrete element modeling (DEM), and the Finite Element Method, has been instrumental in understanding the flow characteristics of powder during die-filling and tablet compression (Rantanen, J., Khinast, J., 2015) (Ketterhagen, W.R., et al., 2009). Additionally, CFD is employed to analyze the impact of tablet geometry on dissolution profiles (Chen, W., et al., 2016). Integrating these mathematical models with artificial intelligence holds the potential to significantly expedite pharmaceutical manufacturing."

### **In Medical Diagnosis:**

The examination of disease diagnosis in the healthcare domain is of paramount importance, encompassing factors leading to pain, illness, dysfunction, or mortality. Diseases manifest both physically and mentally, significantly influencing the affected individual's lifestyle. The systematic study of disease causes, known as the pathological process, plays a crucial role (Scully, 2004) (al., 2020). Diagnosis, defined as the systematic identification of a disease through the analysis of signs and symptoms, along with the determination of its pathology, involves discerning the specific disease based on an individual's presented symptoms and signs. This process

relies on pertinent data derived from medical history and physical examinations, often accompanied by diagnostic procedures such as medical tests (R. H. Scheuermann, W. Ceusters, B. Smith, 2009) (P. Croft, D. G. Altman, J. J. Deeks, 2015). The comprehensive diagnostic framework meticulously followed by medical practitioners aims to collect maximal information.

The need for an automated diagnostic system that combines human expertise and machine accuracy became apparent. To achieve precise diagnoses while minimizing costs, an effective decision support system is essential. Disease classification based on diverse parameters poses a complex challenge for human experts, but AI can aid in detecting and managing such cases. Various AI techniques, including deep learning and machine learning, are employed in the medical field, with specific AI methods like rule-based intelligent systems serving as decision support systems (Lee, 1990), (J. Yen R. Langari, 1999). Discovering possibilities and making predictions in health matters pose challenges for physicians and surgical experts. Artificial Neural Networks (ANN) emerge as swift decision-making tools in healthcare, enabling systems to rapidly gather and comprehend data, pinpointing essential factors crucial for accurate predictions (C.-H. Weng, T. C.-K. Huang, R.-P. Han, 2016) (M. Chen, Y. Hao, K. Hwang, L. Wang, L. Wang, 2017). Deep learning, a branch of machine learning relying on algorithms, finds application in healthcare, aiding specialists in disease examination and contributing to improved medical decision-making. It offers advantages in drug discovery, medical imaging, genomics, and the detection of Alzheimer's disease. The prevailing trend in healthcare employing deep learning focuses on breast cancer detection, where AI matches or surpasses human radiologists' accuracy. AI continuously trains itself, improving precision over time. Another application is in the Internet of Medical Things (IoMT), facilitating healthcare data collection through IoT devices. AI-based software can identify diseases before onset by recognizing early symptoms. Neural networks, with efficient training, detect lung cancer, breast cancer, and strokes faster than trained radiologists. AI algorithms assist in analyzing medical images, aiding in the diagnosis of specific diseases. Disease detection and accurate treatment provision pose challenges due to symptom similarity; medical expert systems leverage AI for precise diagnoses and treatment recommendations. Modern AI algorithms assist doctors in orchestrating a comprehensive approach to disease management and enhance surgical robots for intricate operations. In conclusion, the intersection of artificial intelligence and healthcare, particularly in disease diagnosis, marks a pivotal epoch in medical history. The amalgamation of human expertise with the precision and efficiency of machine learning has propelled the field towards unparalleled advancements. As we navigate through the complexities of disease

identification, the integration of AI, from expert systems to neural networks and deep learning, stands as a beacon of progress. The continuous evolution of AI techniques not only enhances diagnostic accuracy but also revolutionizes the landscape of medical decision-making. From predicting health outcomes to reshaping the future of medical imaging and treatment strategies, artificial intelligence remains an invaluable asset in the relentless pursuit of improved patient care and medical innovation. The journey unfolds with each breakthrough, promising a future where technology and human insight harmoniously converge for the betterment of healthcare.

### **Its application in Dentistry**

Artificial Intelligence (AI) has become a revolutionary force in various fields of healthcare, and dentistry is no exception. In recent years, the integration of AI technologies has ushered in a new era of possibilities, transforming the landscape of dental care. The systematic examination of disease diagnosis gains unique significance in the realm of dental health. Oral conditions, encompassing a range of diseases affecting the teeth, gums, and surrounding structures, present distinct challenges. The intersection of human expertise and machine precision becomes particularly compelling in addressing these challenges, promising innovative solutions in disease identification, prevention, and treatment. While dentistry may not appear profoundly influenced by the strides in AI, specific domains, including image-based automated disease detection, diagnosis support systems, (D.H. Kim, S.N. Jeong, and S.H. Choi, 2018) (Hung M, Voss MW, Rosales MN., 2019) and image segmentation for identifying oral traits, ( Xu X, Liu C,Zheng Y, 2018) are experiencing notable enhancements due to AI. Moreover, improvements in resolution for dentistry-related images are being propelled by AI applications (Hatvani J, Horváth A, Michetti J, 2018). On the robotics front, various breakthroughs are facilitating the integration of robotic support in dentistry. In essence, the realm of dentistry holds considerable potential for AI techniques, spanning multiple areas and aligning with the evolving paradigm of digital dentistry. (Schwendicke F, Singh T, Lee JH, 2021) (Grischke J, Johannsmeier L, Eich L, Griga L, Haddadin S, , 2020) Various factors have contributed to the recent surge of AI revolution in biomedicine. Firstly, there has been an exponential increase in data collection over the past few decades. However, the sheer volume of data alone is insufficient. The progress in high-performance computing (HPC) has played a pivotal role by enabling powerful AI techniques for extracting valuable insights from the amassed data. This process of information extraction is commonly known as machine learning (ML), the data-driven facet of AI. ML aims to facilitate machines (algorithms executed in computer systems) in learning about a specific subject from a given dataset. Typically, supervised learning techniques are employed for this type of

information extraction, demonstrating considerable success. Supervised learning involves the task of teaching a function that can map an input sample to a desired output, based on a database containing examples of input-output pairs. Once this function is learned using training data, it can be applied to make predictions on new samples. (Friedman J, Hastie T, Tibshirani R, 2001) In conclusion, the integration of Artificial Intelligence (AI) in dentistry represents a transformative force, introducing innovative solutions across various facets of dental care. Despite the initial perception that dentistry may not be profoundly influenced by AI, specific domains, including automated disease detection, diagnosis support systems, and image segmentation, are witnessing significant advancements. The potential for AI extends beyond these applications, encompassing resolution enhancements for dentistry-related images and breakthroughs in robotics for dental support. The recent surge in the AI revolution in biomedicine, including dentistry, is fueled by exponential growth in data collection over the past decades. However, the true power of this data lies in the advancements in high-performance computing (HPC), enabling powerful AI techniques for extracting valuable insights. Machine Learning (ML), a key component of AI, plays a pivotal role in facilitating machines to learn from vast datasets, with supervised learning techniques demonstrating considerable success. As dentistry aligns with the evolving paradigm of digital dentistry, the collaboration between human expertise and machine precision promises to deliver innovative solutions in disease identification, prevention, and treatment. The synergistic relationship between AI and dentistry is poised to shape the future of oral healthcare, offering a new era of possibilities and advancements.

### CONCLUSION

In conclusion, the integration of Artificial Intelligence (AI) into the realms of healthcare and dentistry stands at the forefront of transformative innovation. The narrative weaves through the historical corridors of computer science, from Ada Lovelace's visionary insights in 1843 to Alan Turing's introduction of the term "artificial intelligence" in 1950. This evolutionary journey reflects an unwavering pursuit of innovation, culminating in a contemporary chapter where AI assumes a pivotal role in reshaping the landscape of medicine and oral healthcare. AI's applications in medicine, particularly in drug discovery, development, and medical diagnosis, showcase its potential to revolutionize patient care. From identifying potential drug compounds to providing accurate disease diagnoses, AI serves as a beacon of progress, enhancing efficiency, precision, and the overall patient experience. The intersection of human expertise with the capabilities of machine learning, deep learning, and expert systems promises a future where technology and human insight harmoniously converge for the betterment of healthcare. The journey continues into the

field of dentistry, where AI introduces innovative solutions in disease identification, prevention, and treatment. Despite initial perceptions, dentistry benefits significantly from AI applications, ranging from automated disease detection to image segmentation and resolution enhancements in dentistry-related images. The collaboration between human expertise and machine precision in dentistry heralds a new era, promising advancements that redefine the parameters of oral healthcare. The recent surge in the AI revolution, fueled by exponential growth in data collection and advancements in high-performance computing, underscores the power of AI in extracting valuable insights from vast datasets. Machine Learning, as a key component of AI, plays a pivotal role in facilitating machines to learn from data, demonstrating considerable success in various applications. As we navigate through this intersection of technology and healthcare, the synergistic relationship between AI and human expertise holds the promise of improved patient care, enhanced diagnostic accuracy, and transformative advancements in medical decision-making. The continuous evolution of AI techniques ensures that the future of healthcare and dentistry remains dynamic, offering a spectrum of possibilities and contributing to the relentless pursuit of innovation for the well-being of individuals worldwide.

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## ТИББИЙ-БИОЛОГИК ТАСВИРЛАРДАГИ МИКРООБЪЕКТЛАР ЧЕГАРАЛАРИНИ АЖРАТИШ АЛГОРИТМЛАРИ

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### АННОТАЦИЯ

Мазкур иш тиббий-биологик тасвирлардаги микрообъектларни сегментациялаш усул ва алгоритмлари таҳлиliga бағишланган бўлиб, сегментациялашнинг ҳар бир усули ҳақида маълумотлар келтирилган ва уларни тезлиги, априор маълумотларга таяниш ҳолати, қидирув сифати бўйича уларни таққослаш амалга оширилган. Таҳлил қилиш натижаларига таянган ҳолда, тиббий-биологик тасвирлардаги микрообъектлар чегараларини ажратишда кластерли таҳлил алгоритми энг мақбул алгоритм сифатида эътироф этилган. Мақола сўнгида эса тасвир объектларини таснифлаш усуллари ҳақида қисқа хулосалар келтирилган бўлиб, биоматериалларни автоматлаштирилган микроскопия услублари таҳлили натижасида дискриминант таҳлилнинг таснифлаш алгоритмлари кўпроқ, нейрон тармоқ таснифлагичлар эса камроқ қўлланилганлиги аниқланган.

**Калит сўзлар.** Тиббий-биологик тасвир, микрообъект, сегментация, таниб олиш, бўсага, белгилар фазоси, градиент, гистограмма таҳлили, кластерлаш, SUSAN.

### ABSTRACT

This work is devoted to the analysis of microobject segmentation methods and algorithms in medical-biological images, information about each segmentation method is presented and their comparison is made in terms of speed, reliance on a priori data, search quality. Based on the results of the analysis, the cluster analysis algorithm was recognized as the most optimal algorithm for the separation of the boundaries of microobjects in medical-biological images. At the end of the article, brief conclusions are given about the methods of classification of image objects, and as a result of the analysis of biomaterials by automated microscopy methods, it was found that classification algorithms of discriminant analysis are used more, and neural network classifiers are used less.

**Keywords.** Medical-biological image, microobject, segmentation, recognition, thresholding, feature space, gradient, histogram analysis, clustering, SUSAN.



Тиббий-биологик тасвирлардаги микрообъектларни таҳлил қилишдаги асосий вазифаларидан бири бу микрообъектларни тўғри ажратиш ҳисобланади. Тасвирдан микрообъектлар жойлашган соҳани ажратиш ва чегараларини аниқлаш усулларини таснифи 1-расмда келтирилган.



**1-расм.** Тасвирлардаги объектларни ажратиш усуллари таснифи

Микрообъектларни ажратиш деганда нафақат уларни тасвирда мавжуд ёки мавжуд эмаслигини аниқлаш, балки тасвирлар тўпламидан уларни ажратиш олиш ҳам тушунилади. Микрообъектларни ажратиш босқичи натижаси бевосита таниб олиш самарадорлигига таъсир кўрсатади, яъни микрообъектлар қанчалик аниқ ва тўғри ажратиш олинса, таниб олиш ҳам шунчалик аниқ ва тўғри бўлади. Тасвирдаги микрообъектлар уларни чегаралари ёки соҳасини ажратиш орқали ҳам ажратилиши мумкин.

Препаратлар тасвирларидаги объектларни ажратишдаги асосий муаммо тасвирдаги ранг-ёрқинлик хусусиятларини ўзгарувчанлиги ҳисобланади. Бундан ташқари, ҳар бир турдаги препаратлар учун параметрларни ўзгариши ҳам ўзига хос бўлади. Масалан, маълум бир препарат объектларининг бири учун ранг, бошқаси учун ёрқинлик, яна бири учун тўйинганлик ёки уларни бирикмалари билан фарқланиши мумкин.

**Чегараларни ажратиш.** Объектлар чегараларни ажратиш алгоритмлари тасвирдаги содда объектларни ажратиш имконини беради. Геометрик белгилар, бурчак учлари, ёрқинлик тушишлари кабилар содда объектлар тоифасига киради. Кирувчи маълумотларга кўра чегараларни ажратиш алгоритмлари ёрқинлик градиенти, иккинчи тартибли ҳосилалар қийматлари, намуналарга мослик даражалари, фазовий алмаштиришлар, фаол чегаралар ва статистик маълумотлар таҳлили кабиларга таснифланади.

**Ёрқинлик градиенти таҳлили алгоритми.** Бунда тасвирни ҳар бир нуқтасидаги ёрқинлик градиенти қийматлари асосида баҳолаш амалга

оширилади [1-4]. Алгоритм объект чегараларидаги ёрқинлик бўйича хусусий ҳосила қиймати локал максимумни ташкил этади деган ғояга таянади. Чегараларни аниқлашда соҳа ичи ва чегарасидаги ҳосила қийматларини ажратувчи бўсағани аниқлаш талаб этилади. Икки ўлчамли ҳолда ёрқинлик градиенти биринчи тартибли ҳосила сифатида қуйидагича аниқланади.

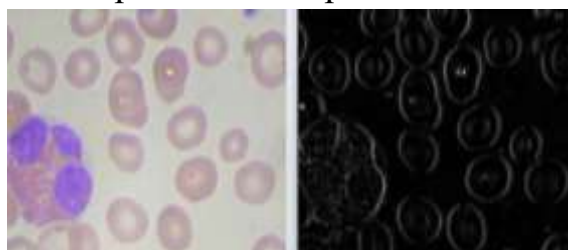
$$\vec{G} = \frac{\partial I}{\partial x} \vec{i} + \frac{\partial I}{\partial y} \vec{j}, \tag{1}$$

бу ерда  $\vec{i}, \vec{j}$  -мос ўқлар бирлик вектолари.

Одатда градиент компоненталарини ҳисоблашда биринчи тартибли чекли айрималардан фойдаланилади ва бу маълум бир филтрлаш маскалари асосида тасвирларни ўрамлаш усули орқали амалга оширилади. Объект чегараларини аниқлашда қуйидаги филтрлаш маскалари кенг қўлланилади.

1. Роберт:  $\begin{bmatrix} 0 & 1 \\ -1 & 0 \end{bmatrix} \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}.$
2. Собел:  $\begin{bmatrix} -1 & 0 & 1 \\ -2 & 0 & 2 \\ -1 & 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 2 & 1 \\ 0 & 0 & 0 \\ -1 & -2 & -1 \end{bmatrix}.$
3. Кирш:  $\begin{bmatrix} -3 & -3 & 5 \\ -3 & 0 & 5 \\ -3 & -3 & 5 \end{bmatrix} \begin{bmatrix} -3 & 5 & 5 \\ -3 & 0 & 5 \\ -3 & -3 & -3 \end{bmatrix}.$

Ҳар бир нуқтада ҳисобланган ёрқинлик градиенти таҳлили асосида чегара аниқлаш натижаси қуйидаги расмда келтирилган.



**2-расм.** Собел маскаси орқали аниқланган объект чегараси:

а) берилган тасвир, б) Собел маскасини қўллаш натижаси

Ҳар бир нуқтада градиент қиймати ҳисоблангандан сўнг градиент модули бўйича локал максимум нуқта аниқланади.

Контрастли ўтишлар орқали чегараларни аниқлаш алгоритмининг камчиликлари - контур чизикларини узилиши, шунингдек объектларни заиф ифодаланган чегараларига мос маълумотлар бир қисмининг йўқотиши ҳисобланади. Бунда қизиқтираётган объект чегарасини аниқ таърифига мос

градиент қиймати нима эканлигини ҳам билиш зарур. Контрастли ўтишларни танлаб филтрлаш учун автоматик алгоритмлар орасида Кэнни детекторини ажратиб кўрсатиш мумкин.

**Кэнни детектори.** Битта контраст тушишига жавобнинг ўзига хослиги ушбу алгоритмнинг муҳим афзаллиги ҳисобланади [5-6]. Алгоритм маълум бир нукта ва унинг атрофидаги градиент қиймати орасидаги минимал фарқни ҳисоблашга асосланади, шунинг учун нотўғри чегараларни йўқотади (3-расм).



**3-расм.** Кэнни детектори томонидан чегараларни аниқлаш натижаси

Ёрқинлик градиенти қийматларига асосланган чегараларни аниқлаш алгоритмларини асосий афзаллиги уларни сезиларли даражадаги тезлиги ҳисобланади. Бироқ, тиббий-биологик тасвирларда объектларни ажратиб олиш учун ушбу усуллардан фойдаланиш ижобий натижалар бермайди. Бу объектлар чегараларида заиф контрастли ўтиш, чегаралар бўйлаб ёрқинлик ўзгарувчанлигига боғлиқ, бунинг натижасида ҳисобланган чегараларда кўплаб узилишлар ва нотўғри сегментлар юзага келади.

**Фаол контурлар усули.** Усул объект чегараси силлиқлиги тахминига асосланган бўлиб, у дастлабки яқинлашишда зарур бўлган объектни ўраб турган псевдо контур (узлуксиз ёпиқ чизик) шаклида ўрнатилади, сўнгра контур турли ўзгаришларга дуч келади.

Трансформацияларни мақсади аниқланган контурни зарур бўлган объект контурига мослаштиришни баъзи функцияларини минималлаштириб, контур шаклини таъминлаш ҳисобланади. Фаол контур объектни ўраб олади, уни дислокациясини, хусусан ёрқинлик градиентини таҳлил қилиш орқали олдиндан аниқлайди [7]. Мазкур усуlining асосий камчиликлари зарур бўлган чегарага дастлабки яқинлашувни аниқлаш ва юқори ҳисоблаш харажатлари ҳисобланади.

**Шакл мослигини таҳлил қилиш.** Таҳлил қилиниши лозим бўлган нуктадаги чегара йўналиши ноаниқлигини пиксел ёрқинлигини ва уни муҳитини берилган тимсоллари тўплами билан солиштириш орқали кузатиш мумкин. Объект чегарасини қаноатлантирувчи шаблон сифатида, таққослаш учун жавоб максимал бўлган шаблон танланади. Тимсолларни мослаштиришга асосланган чегара детекторига мисол сифатида Робинсон ва Девис алгоритмларини келтириш мумкин [8]. Бу каби алгоритмлардан фойдаланишни ижобий жиҳати

градиент усуллари билан солиштирганда чегарани яхши тавсифлаши ҳисобланади. Тиббий-биологик тасвирларни таҳлил қилишда ушбу усуллардан фойдаланиш, шунингдек шаблонлар ўлчамлари, уларни тузилиши ноаниқлиги сабабли мумкин бўлмайди. Бу биринчи навбатда ўрганилаётган тасвирларни табиий келиб чиқиши ва натижада изланаётган ҳамда таҳлил қилинаётган объектлар шакллари табиий ўзига хослигига боғлиқ.

**Фазони алмаштиришга асосланган усуллар.** Алгоритмларнинг ушбу синфи тасвир эркинлик хусусиятларидан кўп ўлчовли бошқа фазога ўтишни амалга оширади ва уларга Хюккел, Бэйкер, Хук ва Радон детекторлари мисол бўлади [9-13]. Бу детекторлар тасвирдаги параметрик тенгламалар орқали ифодаланиши мумкин бўлган айлана, чизик ва бошқа геометрик содда фигураларни аниқлаш имконини беради. Ҳал этилиши лозим бўлган масалага нисбатан бундай усуллардан фойдаланиш мақсадга мувофиқ бўлмайди. Чунки уларни самарали қўллаш қидирилаётган объектни кўп ўлчовли янги фазода параметрик баёнини талаб қилади. Тиббий-биологик объектларда бу усуллардан ягоналиги боис фойдаланиб бўлмайди.

**SUSAN алгоритми** (Smallest Univalued Segment Assimilating Nucleus – ўзлаштирувчи ядроли энг кичик биржинсли сегмент). Алгоритм бир жинсли соҳалардаги қўшни нукталар ўзаро яқин эркинликка ёки бир хил эркинликка эга бўлган чегара яқинидаги қўшнилар сони камаяди деган ғояга таянади. Чегарани бундай талқин қилиш асосида SUSAN чегара детектори алгоритми ишлаб чиқилган. Хусусиятни аниқлашнинг бундай ёндашуви тасвир ҳосиласидан фойдаланмаслиги ва халақитни олдиндан камайтиришни талаб қилмаслиги билан мавжуд усуллардан фарқ қилади [14].

Объект чегарасига тегишли бўлган ниқоб элементларидан олинган қийматларни бошқа объектлардан ажратувчи бўсағани аниқлашни талаб этиши мазкур усулни камчилиги ҳисобланади. Бундан ташқари, турли типли объектлар кесишганда эркинликни яқин қийматларини ҳосил бўлиши каби ҳолатлар ҳам кузатилади.

**Статистик маълумотлардан фойдаланиш.** Бунда усуллар статистик фаразлардан фойдаланишга йўналтирилган бўлиб, бу табиий тасвирларни юқори статистик хусусиятларга эга эканлигига асосланади. Тасвирга элементларни қидиришнинг турли филтрларидан фойдаланиш орқали ишлов бериши усулнинг моҳияти ҳисобланади ва қайта ишлаш натижаси статистик боғланишлар кўринишида ифодаланади [1,15-16].

Алгоритмнинг кириш параметри чегара мавжудлигини аниқловчи бўсаға бўлиб, унинг маъноси элементни мавжуд бўлиш эҳтимолини унинг мавжуд

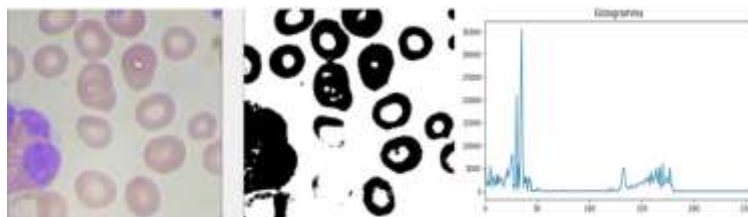
бўлмаслик эҳтимолига нисбати чегарасини аниқлашдир. Тасвирни турли филтрлар билан қайта ишлаш ва эҳтимоллик характеристикаларини ҳисоблаш катта вақт сарфига олиб келади. Бундан ташқари, филтрлар тўпламини танлаш эвристик амалга оширилади.

**Тасвир соҳаларини ажратиш.** Ажратиш мезони бўйича тасвирни бир жинсли соҳаларга ажратиш сегментациянинг асосий вазифаси ҳисобланади. Бунда ягона тасвир доирасида бир нечта ажратиш мезонларидан фойдаланиш мумкин. Аниқ бир таниб олиш масаласи учун ажратиш мезонини бир қийматли аниқлаш эса ҳал этилиши лозим бўлган масала моҳиятидан келиб чиқади ва у ажратилиши талаб этилган объектлар нуктаи назаридан баҳоланади [17].

**Бўсағавий филтрлаш.** Сегментациянинг мазкур ёндашуви содда жорий этилиб, одатда у бинарлаш деб аталади. Масалан, ёрқинлик бўйича сегментлашнинг махсус параметри сифатида ёрқинлик диапазонлари қийматларини икки синфга ажратувчи бўсағадан фойдаланиш объектлари қидирилаётган ва бошқалар синфига ажратиш имконини беради. Бунда бошқа синф деганда одатда фон назарда тутилади. Бир нечта белгилардан фойдаланиб бўсағавий сегментлашни амалга ошириш ҳам мумкин, бироқ бу ҳолда бўсағани танлаш мураккаблашиб кетади [18].

Мазкур ёндашувнинг асосий камчиликлари бўсағани автоматик танлаш имкониятини пастлиги ва бир тасвирда танланган бўсаға қийматини бошқа тасвирда фойдаланишни деярли имкони йўқлиги ҳисобланади. Бу эса ёндашувчи ҳар доим ҳам автоматик қўллаб бўлмаслигини кўрсатади. Бўсаға қиймати бўйича тасвирни автоматик сегментлашни кўплаб эвристик усуллар мавжуд ва уларни айримлари қуйида келтирилган.

**Гистограмма модаси.** Одатда тасвир гистограммаси бирор бир белгисига кўра унимодал ҳисобланмайди. Гистограмма модалари таҳлили асосида тасвирдаги турли объектларни синфларига мос ёрқинлик диапазонларини аниқлаш мумкин. Ҳозирги кунда гистограммаларни локал максимум ва минимум қийматларини аниқлашнинг кўплаб усуллари ишлаб чиқилган [19]. Мазкур усулни фақат бимодал гистограмма орқали тасвир фонини ажратишда самарали деб ҳисоблаш мумкин. Чунки унга одатда устунлик қилувчи чўққи мос келади (4-расм). Бошқа ҳолларда, чегара қийматларини автоматик аниқлаш мумкин эмас, чунки маълум бир объектлар бир вақтни ўзида бир нечта синфига тегишли бўлиши мумкин.



**4-расм.** Бўсағали бинарлаш: а) натижа бинар ниқоб, б) ёрқинлик чегараси қўлда танланган тасвир гистограммаси

**Мослашувчан бинарлаш.** Агар фон ва объектлар даражасида ёрқинлик нотекис бўлса, у ҳолда бўсағавий сегментлаш айрим маълумотларни йўқолишига олиб келади. Ушбу камчиликни бартараф этиш мақсадида мослашувчан бинарлаш қўлланилади. Бунинг учун тасвир ҳар бир пиксели берилган атрофида рухсат этилган коэффициентни инобатга олган ҳолда хусусий бўсаға ҳисобланади. Ҳар бир тасвир учун атроф ўлчами ва бўсаға қиймати ўзига хос бўлади [20-21].

**к-ўртача усули** [22]. Юқорида келтирилган алгоритмларга нисбатан автоматлаштириш даражаси юқори бўлган қуйидаги алгоритм таклиф этилган бўлиб, у қуйидаги қадамларда амалга оширилади.

1-қадам. Тасвир тўғри тўртбурчакли тенг соҳаларга ажратилади.

2-қадам. Ҳар бир соҳа учун  $H_i [0..255]$  гистограмма векторларини шакллантириш амалга оширилади;

3-қадам. Ҳар бир соҳа учун  $Min(H_i)$  ва  $Max(H_i)$  аниқланади;

4-қадам. Ҳар бир соҳа учун бўсағани бошланғич қиймати ҳисобланади:

$$T = \frac{Min(H_i) + Max(H_i)}{2}, i = \overline{1, n};$$

5-қадам. Олдинги қадам учун бўсаға  $T^* = 0$  деб олинади;

6-қадам.  $T_i^* = T$  бўлмагунча қуйидагилар бажарилади:

$T_i^* = T$  деб олинади; Бўсағадан кичик ёрқинликка эга бўлган барча пикселларни ўртача ёрқинлиги ҳисобланади  $S_i^{\min} = S(0, T_i)$ ; Бўсағадан катта ёрқинликка эга бўлган барча пикселларни ўртача ёрқинлиги ҳисобланади

$S_i^{\max} = S(255, T_i)$ ; Бўсағани янги қиймати ҳисобланади, яъни  $T_i = \frac{S_i^{\min} + S_i^{\max}}{2}$ ;

7-қадам. Соҳа учун аниқланган  $T_i^*$  нинг қиймати бўсаға сифатида олинади.

8-қадам. Тасвир учун бўсаға қиймати ҳисобланади:  $T^* = \frac{\sum_{j=1}^n T_j^*}{n}$ .

Юқорида келтирилган алгоритмда ёрқинликни кичик оралиғида аниқланган

бинарлаш бўсағаси мақбул бўлмайди ва объектларга хос бўлган айрим маълумотлар йўқотилади. Бу объект ва фон чегарасида жойлашган пикселлар ёрқинлиги оралик диапазони мавжудлиги билан боғлиқ.

**Қирғоқлар усули.** Мазкур ёндашув тасвир ёрқинлиги градиентини олдиндан ҳисоблашга асосланади. Агар унга рельеф сифатида қаралса, ўзгармас қисмларига, яъни градиентнинг кичик қийматларига тасвирни бир жинсли соҳалари, градиентнинг катта қийматларига эса тасвир ёрқинлигини кучли ўзгарган соҳалари, яъни чегаралари мос келади. Бунда бир жинсли соҳаларни сув ҳавзалари, чеграларини эса қирғоқлар сифатида қараш мумкин. Қирғоқлар таърифга кўра, ёпиқ чизиқни ташкил этади, яъни улар сув ҳавзасини тўлиқ қамраб олади [23-24].

Қидирилаётган ва бошқа объектлар, жумладан фон чегараларида контрастли ўтишларни норавшанлиги ушбу усул орқали қидирилаётган объектларни аниқлаш имконини бермайди. Бундан ташқари, мазкур усул ёрқинлик градиентини дастлабки ҳисоблашга асосланганлиги учун юқорида келтириб ўтилган ёрқинлик градиентига асосланган алгоритмлар камчиликлари ушбу усулга ҳам хос бўлади.

**Рангли тасвирни кластерлаш.** Сегментация масаласини ечишда ўқитувчисиз ўқитиш, яъни кластерлаш масаласини ечишдаги каби ўхшашлик мавжуд. Сегментация масаласини бирор бир белгилар фазосида тасвир нуқталарини акслантириш ва яқинлик ўлчовини киритиш орқали кластерлаш масаласига келтириш мумкин. Бунда тасвир нуқталари белгилари сифатида бирор бир фазода унинг рангли ифодаланишини олиш етарли бўлади. Яқинлик ўлчови сифатида эса олинган белгилар фазосидаги векторлар орасидаги масофаларни ҳисоблашда кенг қўлланиладиган Эвклид метрикасидадан фойдаланиш мумкин [17,20,25-26].

Масаланинг қўйилишига кўра мазкур алгоритм кўплаб тадқиқотчиларда кучли қизиқиш уйғотади ва у ягона созланувчи параметрга, яъни аниқланиши лозим бўлган синфлар сонига боғлиқ.

**Соҳаларни кенгайтириш.** Бу турдаги усуллар тасвир локал белгиларидан фойдаланишга асосланган бўлиб, соҳани кенгайтириш усулини ғояси дастлаб бошланғич нуқтани, кейинчалик эса қўшни нуқталарни таҳлил қилишга асосланади. Сўнг бир жинслиликни бирор бир мезони асосида таҳлил этилган нуқталар мос соҳаларга бирлаштирилади ва бу жараён ажратилган соҳалар бир жинсли бўлмагунча давом эттирилади [27-28].

Одатда соҳаларни кенгайтириш усулларида алоҳида соҳаларни ажратишда фойдаланилади, бироқ уларни кетма-кет ёки бир вақтнинг ўзида бир

нечта соҳаларга қўллаш орқали тасвирни бир нечта қисмларга ажратиш мумкин бўлади. Мазкур алгоритм машина вақти бўйича ўта ёпик бўлиб, унда соҳаларни ўхшашлигини аниқлаш бўсаға қиймати ҳам олдиндан маълум бўлмайди.

**JSEG алгоритми.** Мазкур алгоритм тасвирни сегментларга ажратиш оптималлаштириш масаласини ечишни амалга оширади. Бунинг учун тасвирдаги ранглар тақсимотини акслантурувчи функционал киритилади ва унинг ҳар бир нуқтадаги қийматини ҳисоблаш куйидаги хулосани олиш имконини беради, яъни агар функционал берилган нуқтада минимал қиймат қабул қилса, у ҳолда бу нуқта соҳа маркази, акс ҳолда соҳа чегара нуқтаси сифатида олинади. Сўнгра функционал қиймати асосида соҳани кенгайтириш ишлари амалга оширилади [17,29-30].

Мазкур алгоритм ҳар бир тасвир учун индивидуал учта созланувчи параметрга эга бўлиб, улар рангларни квантлаш бўсағаси, масштаблар сони ва соҳаларни бирлаштириш бўсағаларидир.

Биринчи параметр икки квантланувчи ранг орасидаги минимал масофани аниқлаш имконини беради. Иккинчи параметрдан тасвирни яхши баён этишда фойдаланилади. Учинчи параметр эса тасвир соҳаларини аниқроқ кенгайтириш мақсадида олинади. Ўтказилган кўплаб тадқиқотларда мазкур усулдан тиббий-биологик тасвирлар соҳаларини ажратишда фойдаланиш самарасиз эканлиги кўрсатиб ўтилган. Бу ўта катта миқдордаги ҳисоблашлар ва ҳар бир тасвир учун индивидуал созламаларни аниқлаш билан боғлиқдир.

**Статистик таҳлил.** Тасвир модели сифатида тасодикий Марков майдони, яъни тасвирни ҳар бир нуқтаси ранги қўшни нуқталар рангига боғлиқ деб олиш мумкин. Мазкур усул кучли "текстурали" тасвирларни сегментлашда самарали ҳисобланади [17,31-32]. Мазкур ёндашувни амалга ошириш ўта мураккаб бўлиб, у сегментациялашда тасвир текстурасини инобатга олишни талаб қилади. Тиббий-биологик препаратлар объектлари кучсиз ифодаланувчи текстурали фарқларга эга эканлиги тажрибаларда аниқланган. Шунинг учун мазкур усулдан тиббий-биологик тасвирларни таҳлил қилишда фойдаланиш мақсадга мувофиқ ҳисобланмайди.

**Графлар назарияси.** Тасвирни ҳар бир чўққиси тасвирни ўзига хос нуқтаси деб олинувчи вазнли граф кўринишида ифодалаш мумкин. Граф қирраси вазни қандайдир маънода нуқталар ўхшашлигини ифодалайди ва бу графни қисмларга ажратиш орқали тасвирни бўлаклашни моделлаштириш имконини беради [17,33-34]. Ушбу ёндашув сегментлар ранги ва текстураси бир жинслилигини аниқлашдан ташқари, сегментлар шакли, ўлчамлари, чегаралари мураккаблиги кабиларни назорат қилиш имконини беради.



Қайта ишланадиган маълумотлар ўлчамини катталиги ва тезлигини пастлиги алгоритмнинг асосий камчиликлари ҳисобланади. Бундан ташқари, ушбу алгоритмга соҳаларни бирлаштириш усулидаги камчиликлар ҳам хосдир. Юқорида баён этилган алгоритмлар қиёсий таҳлили натижалари қуйидаги жадвалда келтирилган.

**1-жадвал**

Тасвирлардаги объектларни аниқлаш ва ажратиш алгоритмлари қиёсий таҳлили

Кўрсаткич Усул	Тезлик	Созланувчи параметрлар сони	Мураккаблиги	Априор ахборотдан фойдаланиши	Қидирув сифати
Градиентли	Юқори	2 тадан кўп	Паст	Фойдаланмайди	Қониқарсиз
Шаблонли	Ўртача	2 тадан кўп	Юқори	Фойдаланади	Қониқарсиз
Локал адаптация	Паст	2 тадан кўп	Юқори	Фойдаланмайди	Қониқарсиз
Статистик	Паст	2 тадан кўп	Юқори	Фойдаланади	Ўртача
Кластерли таҳлил	Ўртача	1 та	Паст	Фойдаланмайди	Ўртача

Қўйилган масалани ечиш учун мақбул алгоритм сифатида кластерли таҳлил алгоритмидан фойдаланиш тавсия этилган бўлиб, танлов алгоритмни созлаш параметрлари минимал сонга ва уни мақбул тезликка ҳамда априор маълумотлардан фойдаланмаслигига асосланган.

Сегментация натижасида ажратиб олинган объект учун белги шакллантириш алгоритмлари [35-42] қўлланилади ва ундан сўнг ушбу белгилар орасидан информативлари ажратиб олинади. Белгилари шакллантирилган объект кейинги таниб олиш босқичига ўтказилиб, таснифлаш амалга оширилади.

**Зарур бўлган объектларни таснифлаш.** Таснифлаш бу қаралаётган объектни, яъни ҳужайра, тўқима, гистологик таркиб кабиларни у ёки бу синфга тегишлилигини аниқлашдир. Бунда белгилар сонини имкон қадар кичик бўлиши талаб этилади [34]. Саралаш алгоритмлари асосини таснифлаш босқичи ташкил этади. Қуйида таснифлаш масаласини ечишнинг кенг тарқалган усуллари баёни келтирилган.

**Нейрон тармоқли таснифлагич.** Мазкур таснифлагич инсон миясининг гипотетик механизмини моделлаштиришга асосланган бўлиб, у тимсолларни таниб олишнинг турли масалаларини ечишда кенг қўлланилади. Нейрон тармоқли таснифлагичлар "мустақил" ўқитиш хусусиятига эга ва улар нейрон тармоқ тузилиши ва ўқитиш алгоритмининг эвристик танлашни талаб қилиши каби

камчиликка эга ҳисобланади.

**Потенциал функциялар усули.** Мазкур усул қуйидаги ғояга таянади. Фараз қилайлик,  $K$  тимсоллар тўплами берилган бўлсин. Бу тимсоллар тўпламини бир-бири билан кесишмайдиган  $K_1$  ва  $K_2$  синфларга ажратиш талаб этилсин. Бу икки тўпламни бир биридан тўлиқ ажратувчи камида битта функция мавжуд ва у  $K_1$  синфга тегишли бўлган объектларга мос нуқталарда 1 ва  $K_2$  синфга тегишли бўлган объектларга мос нуқталарда 0 қийматларни таъминлаши шарт. Умуман олганда ажратиш функциялари кўп ва улар қанчалик кўп бўлса, у ҳолда ажратиладиган тўпламлар ҳам шунчалик компакт бўлади. Ўқитиш жараёнида бу функциялардан бирини, баъзида эса қандайдир маънода энг яхшисини қуриш талаб этилади. Ўқитиш натижасида танланган якуний функция умуман олганда "ўқитилган" нейрон тармоқ таснифлагичларига яқин бўлади.

**Чегаравий соддалаштириш усули.** Бунда ажратиш функцияси чизикли кўпхад кўринишида олдиндан берилган ва у ўқув танлангани бехато ажратувчи минимал ўлчамли фазони лойихалайди деб фараз қилинади. Шунинг учун усул чегаравий соддалаштириш усули деб номлаган бўлиб, унда кичик ўлчамли, яъни содда фазода энг содда ҳал қилувчи қоида қурилади.

**Дискриминант таҳлил.** Ушбу гуруҳ усуллари объектларни башоратлаш синфларга тегишлилигини аниқлашда қарор қабул қилишнинг Байес схемасига асосланади. Байес ёндашуви эса эҳтимоллар назарияси ва ундаги  $w_i, (i = \overline{1, N})$  синфлар учун  $P(w_i)$  априор эҳтимолликлар ва  $P(x/w_i)$  белгилар вектори қиймати шартли зичлиги тақсимотига таянади. Байес қоидаси  $P(w_i/x)$  постериор эҳтимолликни аниқлашдан иборат бўлиб, унда  $x_j$  объектни  $w_i$  синфга тегишлилиги ҳақидаги хулоса таснифлашнинг ўртача эҳтимоллик хатолигини минимумини таъминлаганда берилди.

**Ҳал қилувчи қоидалар жамоаси.** Таснифлаш масалаларини ечишда турли алгоритмлар хусусиятларидан оқилона фойдаланиш мақсадида турли характердаги таниб олиш алгоритмлари жамоавий қарорлар асосида таснифлаш қарорини ташкил этувчи жамоаларга бирлаштириш мумкин.

Биоматериалларни автоматлаштирилган микроскопия услублари таҳлили натижасида дискриминант таҳлилнинг таснифлаш алгоритмлари кўпроқ, нейрон тармоқ таснифлагичлар эса камроқ қўлланилганлигини аниқланган.

### ХУЛОСА

Мазкур тадқиқот ишида тиббий-биологик тасвирлардаги микрообъектларни сегментациялаш усуллари кенг қамровли таҳлили келтирилган бўлиб, унда сегментация усуллари асосан иккита қисмга

ажратилган ҳолатда ўрганилган. Яъни, чегарага асосланган ва соҳага асосланган усуллар. Чегарага асосланган усуллар қаторида ёрқинлик градиенти, фазовий алмаштиришлар, фаол чегаралар, SUSAN алгоритми ва статистик таҳлил усуллари ва уларнинг ҳар бирининг ютуқ ва камчиликлари келтирилган. Соҳаларни ажратишга асосланган усуллар қаторида эса чегаравий филтрлаш, кластерли таҳлил, қирғоқлар усули, графлар назарияси усуллари тадқиқ қилинган бўлиб, улар орасида кластерли таҳлил алгоритми самарадор эканлиги аниқланган.

Сегментация натижасида ажратиб олинган объектнинг белгилари шакллантирилгандан сўнг, таниб олиш босқичи амалга оширилиши мумкин. Мазкур ишда таснифлаш масаласини ечишнинг кенг тарқалган усуллари баёни келтирилган бўлиб, асосан нейрон тармоқга асосланган, потенциал функциялар, чегаравий содалаштириш, дискриминант таҳлил ва ҳал қилувчи қоидалар жамоаси усуллари тадқиқ қилинган. Натижада микроскопия соҳасида дискриминант таҳлил усулидан фойдаланиш ҳолати кўпроқ бўлганлиги аниқланган.

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## DIGESTIBILITY OF NUTRIENTS IN THE DIET DURING THE EARLY GROWTH PERIOD OF GOATS

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**Annotation:** *In the article goats digestion of nutrients in the diet during the initial stage of constipation about info given.*

**Keywords:** *goat, goat, goat, breed, ration, stomach, intestines, system, stomach, intestine, digestion, coefficient, organic matter, protein, cell and AEM, animal, metabolic process, substance, crude oil, crude fiber.*

**Login:** Feeding of modified rations by Zanen breed goats significantly affected the nutrient digestibility of the ration in the stomach and intestinal system. According to the data obtained from the balance experiments carried out at the end of the scientific-production experiment, it was found that the digestibility coefficients of the substances digested in the gastrointestinal system of the goats used in the experiments differ from each other. Differences were detected in the digestive tract of the experimental group of goats, which had 10% dried Eichhornia algae added to the dry matter of the normal level due to the nutrients in the diet. It was 3.27 and 3.03%, 2.91, 4.16 and 2.65% of the content of dry and organic matter, protein, fiber and AEM in the control group of goats, respectively. It can be seen that the goats of the experimental group fed with the diet supplemented with Eichhornia algae digested the nutrients better and efficiently utilized the nutrients in the diet compared to the control group goats fed with the conventional diet.

Digestion of nutrients in the 1st half of the rumen of experimental goats

Indicators	Groups		Control to the group on the account of %
	Control	Experience	
Dry matter	60.1	63.2	103.1
Organic substances	63.4	66.5	103.1
Crude protein	56.5	59.3	2.8
crude oil	60.3	70.1	106.8
Raw tissue	49.1	53.5	104.4
AEM	60.2	62.7	102.5

In order to assess the level and direction of protein metabolism in the body of experimental goats, we determined the nitrogen balance in their body according to the purpose of the research work. According to the obtained data, it was found that the differences between the experimental and control groups regarding the amount of nitrogen consumed with food in the 1st half of the estrus period of goats were reliable. The goats in the experimental group consumed an average of 5.54 g more nitrogen per day than their peers in the control group. The amount of nitrogen excreted in feces, urine and milk was also 11.6% more in the experimental group fed with the diet supplemented with Eichhornia algae than in the control group, and 4.93% in urine. was found to be poorly separated.

*Average daily nitrogen balance in the 1st half of the estrus of goats*

Indicators	Groups		Control to the group on the account of %
	control	experience	
Taken with food, g	19.08	21.4	112.6
Discharged with feces, g	6.34	7.29	111.47
Digested, g	12.5	14.11	112.90
Digestion coefficient,%	65.5	65.9	=
Excreted with urine, g	6.24	5.93	95.03
Sitting on the body	6.26	8.18	130.67
Absorption coefficient,%			
Accepted	32.8	38,22	115.52
From digestion	50.8	57.9	113.97



From the data presented in the table, it can be seen that the nitrogen balance was positive in the experimental goats, we note that the goats in the experimental group assimilated a large part of the nitrogen of the digested food compared to the goats of the control group (57.9%). It was found that the levels of nitrogen in the body of experimental group goats were higher than that of the control group goats (15.5 and 13.9%) both from the consumed nitrogen and from the amount of digested food. At the same time, it was found that the amount of calcium sitting in the body of goats of the experimental group was 5.5% and 4.67% lower than the consumed and digested amounts, respectively. According to the analysis of the obtained data on phosphorus metabolism, it was observed to be higher (20.9%) in the goats of experimental group 2 compared to the control group. A similar situation was observed in the metabolism of sulfur.

*Balance of calcium and phosphorus elements*

	Groups			
	Control		Experience	
	Calcium	Phosphorus	Calcium	Phosphorus
Received, g	7.7	4.1	9.6	4.8
Discharged with feces, g	3.9	1.3	4.1	1.5
Digested, g	3.8	2.8	5.5	3.3
Digestion coefficient,%	49.4	68.3	57.3	68.8
Excreted with urine, g	0.28	0.1	0.27	0.1
Sitting on the body, g	3.8	2.7	5.2	3.2
The mastered,, g	2.6	2.8	4.9	3.3
From consumed, %	33.8	65.8	51.0	68.8
% of digested	68.4	96.4	89.1	96.9

According to the data of the balance experiments on the use of calcium, phosphorus and sulfur elements in the control and experimental groups in the experiment, it was found that calcium in the body was positive in the control and experimental groups. However, the amount of consumed calcium was 31.5% more than the amount consumed by the animals of the experimental group compared to the control group, and 8.0% more digestibility was observed in the goats of the experimental group compared to the control group. Regarding the phosphorus element,

it was found that the amount consumed by the goats of the experimental group was 0.7 g more digested in favor of the goats of the experimental group, but the digestibility coefficient of consumed phosphorus was almost the same in both compared groups (68.3 and We acknowledge that it made up 68.8%. The absorption coefficient of goats from the amounts consumed and digested by the goats of the compared groups was almost the same (65.8 and 68.8%) (96.4 and 96.9 %) data were obtained. Analogous data were also obtained on the exchange of element sulfur in the body of experimental goats.

**CONCLUSION;** Based on the obtained data, we can say that the content of dry and organic matter, protein, fiber and AEM in the diet was 3.27 and 3.03%, 2.91, 4.16 and 2.65%, respectively, compared to the control group goats. We observed that it was %. It can be seen that the goats of the experimental group fed with the diet supplemented with Eichhornia algae had better digestibility and efficient utilization of nutrients in the diet compared to the control group goats fed with the conventional diet. But we observed that the amount of consumed calcium was 31.5% more than the amount consumed by the animals of the experimental group compared to that of the control group. Regarding the phosphorus element, it was found that the amount consumed by the goats of the experimental group was 0.7 g more digested in favor of the goats of the experimental group, but the digestibility coefficient of consumed phosphorus was almost the same in both compared groups (68.3 and It was found that it was 68.8%.

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## O‘ZBEK TILINI O‘QITISHDA ILG‘OR PEDAGOGIK TEXNOLOGIYALARNING O‘RNI

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Surxandaryo viloyati Denov tumani 35-maktab

Ona tili va adabiyoti fani o‘qituvchisi

***Annotatsiya:** Ushbu maqolada o‘zbek tilini o‘qitishda ilg‘or pedagogik texnologiyalarning o‘rni yoritilgan. Bu texnologiya til o‘rganish va o‘qitish jarayonlarini qanday yaxshilashi mumkinligini ta’kidlaydi. Maqolada interfaol ta’lim platformalari, multimedia resurslari va til o‘rganish ilovalari kabi ilg‘or pedagogik texnologiyalardan foydalanishning mumkin bo‘lgan afzalliklari muhokama qilinadi. Unda o‘quvchilarni qiziqtirish, faol ishtirok etishga ko‘maklashish va o‘zbek tilini o‘qitish uchun immersiv o‘quv muhitini yaratish uchun texnologiyani joriy etish muhimligi ta’kidlanadi.*

***Kalit so‘zlar:** ilg‘or pedagogik texnologiyalar, o‘qitish, o‘zbek tili, til o‘rganish, interfaol ta’lim platformalari, multimedia resurslari, til o‘rganish uchun ilovalar, ishtirok, faol ishtirok, immersiv o‘quv muhiti.*

O‘zbek tilini o‘qitishda ilg‘or pedagogik texnologiyalarning o‘rni tobora ortib bormoqda, chunki texnologiya ta’limda hal qiluvchi rol o‘ynamoqda. Raqamli vositalarning jadal rivojlanishi bilan ilg‘or pedagogik texnologiyalardan foydalanish o‘zbek tilini o‘qitish va o‘rganishni kuchaytirish, uni talabalar uchun yanada qulay, qiziqarli va samaraliroq qilish imkonini beradi.

O‘zbek tilini o‘qitishda ilg‘or pedagogik texnologiyalardan foydalanishning asosiy afzalliklaridan biri interfaol va shaxsiylashtirilgan o‘quv tajribasini taqdim etishdir. Til o‘rganish ilovalari, onlayn interaktiv tadbirlar va virtual sinf xonalaridan foydalanish bilan talabalar til bilan yanada dinamik va immersiv tarzda shug‘ullanishlari mumkin. Bu ularning til bilish darajasini oshirishga, shuningdek, qiziqish va o‘rganishga bo‘lgan motivatsiyasini oshirishga yordam beradi.

Qolaversa, ilg‘or pedagogik texnologiyalar o‘zbek tilini o‘rganish uchun juda ko‘p manba va materiallardan foydalanish imkonini beradi. Onlayn platformalar va raqamli kutubxonalar orqali talabalar o‘zlarining til o‘rganish tajribasini oshirishi mumkin bo‘lgan asl matnlar, audioyozuvlar, videolar va boshqa multimedia kontentiga osongina kirishlari mumkin. Haqiqiy dunyo tilidan foydalanishga bunday ta’sir qilish

o'quvchilarning til ko'nikmalarini yanada madaniy va lingvistik jihatdan o'ziga xos tarzda rivojlantirishga yordam beradi.

Bundan tashqari, ilg'or pedagogik texnologiyalar talabalar uchun tabaqalashtirilgan ta'lim va shaxsiylashtirilgan ta'lim yo'llarini qo'llab-quvvatlashi mumkin. Moslashuvchan ta'lim tizimlari va sun'iy intellektga asoslangan platformalardan foydalangan holda o'qituvchilar o'z o'qitishni o'quvchilarning individual ehtiyojlari va o'rganish uslublariga moslashtirishi mumkin. Bu o'quvchilarning turli lingvistik kelib chiqishi, qobiliyatlari va qiziqishlarini hisobga olishga yordam beradi va natijada tilni yanada samarali o'zlashtirishga olib keladi.

Qolaversa, ilg'or pedagogik texnologiyalar o'zbek tilida hamkorlikda o'rganish va muloqotni osonlashtirishi mumkin. Onlayn forumlar, munozaralar kengashlari va hamkorlik platformalari orqali talabalar hatto an'anaviy sinf muhitidan tashqarida ham mazmunli til o'zaro ta'sirlari va almashinuvlarida ishtirok etishlari mumkin. Bu talabalar o'rtasida hamjamiyat tuyg'usini va umumiy o'rganish tajribasini rivojlantirishga yordam beradi, shuningdek, tildan foydalanish va muloqot qilish uchun imkoniyatlar yaratadi.

Turkiy tillar oilasiga mansub o'zbek tili O'zbekistonning rasmiy tili bo'lib, qo'shni mamlakatlarda ham keng tarqalgan. Har qanday tilda bo'lgani kabi, talabalarning tilni muvaffaqiyatli o'zlashtirib olishlarini ta'minlash uchun samarali o'qitish usullarini qo'llash muhimdir. O'zbek tilini o'rgatishning foydali usullari:

- **Kommunikativ yondashuv:** Bu usulda tilni real hayotda amaliy foydalanishga qaratilgan. O'zbek tilini rolli o'yinlar, suhbatlar va interfaol mashg'ulotlar orqali o'rgatish o'quvchilarda nutq va tinglash qobiliyatlarini rivojlantirishga yordam beradi. Kundalik til va situatsion dialoglardan foydalanishga urg'u berish o'quv jarayonini yanada qiziqarli va dolzarb qilishi mumkin.
- **Interaktiv multimedia:** interaktiv til o'rganish dasturi, onlayn videolar va audio yozuvlar kabi multimedia resurslarini o'z ichiga olish o'rganish tajribasini oshirishi mumkin. Bu vositalar o'quvchilarni o'zbek tilining asl qo'llanishi, madaniy jihatlari va tilni har tomonlama tushunishni rivojlantirish uchun muhim bo'lgan turli urg'ularni ochib berishi mumkin.
- **Vazifaga asoslangan ta'lim:** Bu usul o'quvchilardan aniq maqsadlarni bajarish uchun o'zbek tilidan foydalanishni talab qiladigan til o'rganish vazifalarini ishlab chiqishni o'z ichiga oladi. Vazifalar faol tildan foydalanishni rag'batlantiradigan va amaliy ko'nikmalarni rag'batlantiradigan muammolarni hal qilish faoliyati, ijodiy loyihalar yoki hamkorlikdagi topshiriqlardan iborat bo'lishi mumkin.

- Madaniy suvga cho‘mish: O‘zbek madaniyati, an‘analari va urf-odatlari bilan tanishish til o‘rganishni sezilarli darajada oshirishi mumkin. Adabiyot, musiqa, an‘anaviy san‘at va oshpazlik tajribalari orqali til darslariga madaniy elementlarni integratsiyalash til va uning mazmunini yaxlit tushunish imkonini beradi.

- Grammatika-tarjima usuli: Kommunikativ va immersiv yondashuvlar qimmatli bo‘lsa-da, tilni bilish uchun ma‘lum darajadagi grammatik tuzilish zarur. Grammatika qoidalarini tizimli ravishda o‘rgatish va tarjima mashqlarini o‘z ichiga olgan grammatika-tarjima metodi o‘quvchilarga o‘zbek tilining tuzilishi va sintaksisi bo‘yicha mustahkam asos yaratishi mumkin.

- Haqiqiy materiallardan foydalanish: o‘zbek tilidagi gazetalar, kitoblar, ijtimoiy tarmoqlardagi postlar va onlayn maqolalar kabi asl materiallarni o‘z ichiga olish talabalarni real dunyo tillaridan foydalanishga undashi mumkin. Ushbu yondashuv o‘quvchilarga amaliy kontekstda o‘qishni tushunish va so‘z boyligini rivojlantirishga yordam beradi.

- Texnologiya bilan ta‘minlangan ta‘lim: til o‘rganish ilovalari, virtual sinflar va onlayn resurslar kabi ilg‘or pedagogik texnologiyalardan foydalanish o‘quv tajribasini oshirishi mumkin. Interfaol mashqlar, raqamli kartalar va til o‘rganish platformalari shaxsiylashtirilgan o‘rganish tajribasi, tezkor fikr-mulohazalar va mustaqil o‘rganish imkoniyatlarini taklif qilishi mumkin.

Umuman olganda, o‘quvchilarning ehtiyojlari va xohishlariga moslashtirilgan ushbu usullarning kombinatsiyasi o‘zbek tilini o‘zlashtirishni sezilarli darajada oshirishi mumkin. O‘qitishning turlicha yondashuvlarini o‘zida mujassamlashtirgan holda, o‘qituvchilar o‘quvchilarni o‘ziga jalb etadigan va o‘zbek tilini bilish darajasini oshiruvchi keng qamrovli til o‘rganish muhitini yaratishi mumkin.

Xulosa qilib aytish mumkinki, ilg‘or pedagogik texnologiyalar o‘zbek tilini o‘qitish va o‘rganishni sezilarli darajada oshirish imkoniyatiga ega. Ushbu texnologiyalar interfaol, shaxsiylashtirilgan va madaniy jihatdan o‘ziga xos o‘rganish tajribasini, shuningdek, keng ko‘lamli resurslardan foydalanish va tabaqalashtirilgan ta‘limni qo‘llab-quvvatlash qobiliyatini ta‘minlash orqali o‘zbek tilini o‘rganishni yanada qiziqarli, samarali va qulayroq qilishga yordam beradi. talabalar. Texnologiyalar rivojlanishda davom etar ekan, o‘qituvchilar uchun bu yutuqlarni o‘zlashtirib olishlari va ulardan o‘zbek tilini o‘qitish va o‘rganishni innovatsion va ta‘sirchan usullarda qo‘llab-quvvatlashlari muhim ahamiyatga ega.

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## ОСОБЕННОСТИ МОРФОФУНКЦИОНАЛЬНОГО СОСТОЯНИЯ И ФИЗИЧЕСКОЙ ПОДГОТОВЛЕННОСТИ СТУДЕНТОВ СПЕЦИАЛЬНОЙ МЕДИЦИНСКОЙ ГРУППЫ

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*Цель исследования состояла в изучении и анализе морфофункционального состояния и физической подготовленности студентов специальной медицинской группы разных типологических групп.*

*Исследования проводились в Ташкентском финансовом институте в период с 2022 по 2023 г. В них приняли участие студенты и студентки в возрасте 17-19 лет (n=141), отнесенные к специальной медицинской группе.*

**Ключевые слова:** *студенты, специальная медицинская группа, соматотип, хронические заболевания, функциональное состояние, физическая подготовленность*

## МАХСУС ТИББИЙ ГУРУҲ ТАЛАБЛАРИНИНГ ГАВДА ТУЗИЛИШИ ҲОЛАТИ ВА ЖИСМОНИЙ ТАЙЁРГАРЛИГИНИНГ ЎЗИГА ХОС ХУСУСИЯТЛАРИ

*Ушбу тадқиқотнинг асосий мақсади махсус тиббий гуруҳдаги турли типологик кўринишларга эга талабаларнинг гавда тузилиши ҳолати ва жисмоний тайёргарлигини таҳлил қилишдан иборат. Тадқиқотлар 2017- 2019 йиллар давомида Тошкент молия институтининг 17-19 ёшли талабалари (n=141) билан олиб борилган.*

**Калим сўзлар:** *талабалар, махсус тиббий гуруҳ, гавда тузилиши, сурункали касалликлар, функционал ҳолат, жисмоний тайёргарлик.*

## FEATURES OF MORPHOFUNCTIONAL STATE AND PHYSICAL PREPARATION OF STUDENTS OF THE SPECIAL MEDICAL GROUP

*Objective of the study was to rate and analyst the special health group (SHG) students' morphology, functionality and physicality versus their somatotypes and diagnoses. The study was completed at Tashkent financial institute in 2017 to 2019, with 17-19-year-old special health group students of both sexes (n=141) being subject to the study.*

**Keywords:** *special health group, somatotype, chronic diseases, functionality, physical fitness.*



От состояния здоровья студенческой молодежи во многом зависит здоровье будущего поколения и качество подготовки молодых специалистов. Но в настоящее время в стране сохраняются негативные тенденции в состоянии здоровья этой категории населения, снижающие успешность адаптации и обучения. Так, по данным разных авторов, 20-40% российских студентов отнесены к специальной медицинской группе (СМГ), что в большинстве случаев приводит к освобождению их от занятий физической культурой с неизбежным ухудшением состояния здоровья.

Таким образом, в сложившейся ситуации поиск новых форм, методов и средств в рассматриваемой сфере позволяет говорить о необходимости разработки целевой учебно-воспитательной методики и, в первую очередь, с использованием потенциала физической культуры и спорта как наиболее эффективных средств социализации формирующейся личности. В связи с этим несомненную важность представляет исследование морфофункциональных особенностей и показателей физической подготовленности студентов СМГ, влияющих на уровень здоровья.

Анализ распространенности заболеваний показал, что студенты наиболее подвержены заболеваниям опорно-двигательного аппарата (ОДА) - 32,8%, сердечно-сосудистой (ССС), дыхательной (ДС) и эндокринной (ЭС) систем (соответственно 28,4%; 22,3%; 16,5%). Повышенный уровень заболеваний опорно-двигательного аппарата характерен для астеноидного (юноши - 28,4 %, девушки - 26,1 %) и дигестивного (юноши - 21,2 %, девушки - 17,8 %) типов телосложения. Наибольшим процентом сердечно-сосудистых заболеваний представлен дигестивный тип телосложения (юноши - 37,9 %, девушки - 32,5 %). Заболевания дыхательной системы наиболее свойственны студентам дигестивного (юноши - 15,3 %, девушки - 12,5%) и астеноидного (юноши - 11,7 %, девушки - 10,3 %) типов телосложения.

Повышенный уровень заболеваний эндокринной системы отмечен у представителей дигестивного соматотипа (юноши - 44,8 %, девушки - 43,3 %,). При этом у некоторых студентов и студенток имеются два и более заболеваний. Результаты исследований монофункционального состояния студенток с учетом соматотипа представлены в табл 1.

У юношей самыми высокорослыми оказались студенты дигестивного типа телосложения с заболеваниями ДС ( $179,2 \pm 2,1$  см), ЭС ( $178,9 \pm 3,1$  см), и ОДА ( $178,2 \pm 1,6$  см) ( $p > 0.01$ ).

Наибольшие показатели массы тела ( $83,3 \pm 3,4$  кг) и обхвата грудной клетки ( $102,9 \pm 3,4$  см) отмечены у студентов дигестивного типа телосложения с заболеваниями ДС ( $p > 0,01$ ).

Наибольшие значения ЖЕЛ имеют юноши торакального телосложения с заболеваниями ЭС ( $4654 \pm 234,9$  мл) ( $p < 0,01$ ).

У юношей торакального типа телосложения с заболеваниями ЭС отмечены наибольшие показатели кистевой динамометрии сильнейшей руки ( $45,8 \pm 2,9$  кг) ( $p < 0,01$ ) Наибольшие показатели становой динамометрии – у юношей торакального типа телосложения с заболеваниями ССС ( $144,9 \pm 12,7$  кг) ( $p < 0,01$ ).

**Таблица 1**

**Характеристика показателей морфофункционального состояния студентов СМГ 17-19 лет разных соматотипов с различными хроническими заболеваниями**

№ n/n	Показатели	Соматотипы	Хронические заболевания			
			ОДА	ССС	ДС	ЭС
1	Длина тела, см	торакальный	163,2±1,7	162,8±1,4	164,5±1,8	163±1,3
		астеноидный	168,1±1,8	166,9±1,3	169,2±2,5	164,0±1,6
		дигестивный	164,2±1,3	163,8±1,7	167,7±1,7	166,2±1,7
2	Масса тела, кг	торакальный	59,7±1,7	57,1±1,4	62,0±1,7	58,3±1,8
		астеноидный	52,8±1,7	53,6±1,9	54,2±1,7	49,7±1,7
		дигестивный	68,9±1,6	69,3±1,8	70,1±4,1	66,3±1,9
3	Окружность грудной клетки, см	торакальный	83,0±1,1	82,1±1,6	85,2±1,0	82,9±1,2
		астеноидный	79,3±0,9	80,4±1,6	81,0±1,1	76,2±1,8
		дигестивный	92,0±1,4	91,4±1,8	96,3±5,7	94,0±1,8
4	ЖЕЛ, мл	торакальный	3210±179,1	2530±280,1	3549±216,8	2864±222,6
		астеноидный	3221±245,8	2834±232,2	2360±245,1	3458±325,4
		дигестивный	3440±245,9	3842±351,4	2942±267,0	3260±345,4
5	Кистевая динамометрия сильнейшей руки, кг	торакальный	30,8±0,6	27,8±0,8	29,0±0,8	28,6±1,5
		астеноидный	26,2±1,6	23,8±1,8	22,0±4,7	25,4±1,4
		дигестивный	30,3±1,6	26,9±1,8	29,3±2,4	28,0±1,7
6	Становая динамометрия, кг	торакальный	68,7±6,6	60,9±5,8	65,8±5,8	64,7±7,3
		астеноидный	66,3±2,4	49,8±8,8	58,7±12,5	54,1±9,8
		дигестивный	71,4±11,6	65,5±7,5	69,1±8,9	59,7±17,0

Сравнение показателей физической подготовленности исследованных нами студенток, принадлежащих к различным нозологическим группам, показало, что в показателе бега на 30 м (с) лучшее время имеют девушки астеноидного типа телосложения с заболеваниями ОДА ( $6,7 \pm 0,07$ ) и заболеваниями ЭС ( $5,3 \pm 0,1$ ) ( $p > 0,01$ ). Худшие показатели отмечены у девушек дигестивного типа телосложения с заболеваниями ССС ( $7,7 \pm 0,1$ ) и ДС ( $7,5 \pm 0,08$ ) ( $p < 0,01$ ).

В беге на 1000 м (с) лучшие показатели у девушек торакального типа телосложения с заболеваниями ЭС ( $315,1 \pm 4,3$ ) ( $p < 0,01$ ), худшие - у девушек дигестивного типа телосложения с заболеваниями ССС ( $382,6 \pm 3,8$ ) и ДС ( $379,0 \pm 4,8$ ) ( $p < 0,01$ ).

Наибольшие значения показателя прыжка в длину с места отмечены у девушек торакального типа телосложения с нарушениями функций ОДА ( $187,5 \pm 3,2$  м), худшие - у девушек дигестивного типа телосложения с заболеваниями ССС ( $131,0 \pm 4,4$ ) и ДС ( $144,1 \pm 3,5$ ) ( $p < 0,01$ ), худшие показатели имеют девушки дигестивного типа телосложения с заболеваниями ДС ( $2,9 \pm 0,7$ ) и ЭС ( $5,1 \pm 0,7$ ) ( $p < 0,01$ ). Результаты исследования физической подготовленности студентов с учетом соматотипа и заболевания представлены в табл. 2.

**Таблица 2**

**Характеристика показателей физической подготовленности студентов СМГ 17-19 лет разных соматотипов с различными хроническими заболеваниями**

№ n/n	Показатели	Соматотипы	Хронические заболевания			
			ОДА	ССС	ДС	ЭС
1	Бег на 30 м, с	торакальный	163,2±1,7	162,8±1,4	164,5±1,8	163±1,3
		астеноидный	168,1±1,8	166,9±1,3	169,2±2,5	164,0±1,6
		дигестивный	164,2±1,3	163,8±1,7	167,7±1,7	166,2±1,7
2	Бег на 1000 м, с	торакальный	83,0±1,1	82,1±1,6	85,2±1,0	82,9±1,2
		астеноидный	79,3±0,9	80,4±1,6	81,0±1,1	76,2±1,8
		дигестивный	92,0±1,4	91,4±1,8	96,3±5,7	94,0±1,8
3	Прыжок в длину с места, см	торакальный	3210±179,1	2530±280,1	3549±216,8	2864±222,6
		астеноидный	3221±245,8	2834±232,2	2360±245,1	3158±325,4
		дигестивный	3440±245,9	3842±351,4	2942±267,0	3260±345,4
4	Наклон туловища вперед, см	торакальный	30,8±0,6	27,8±0,8	29,0±0,8	28,6±1,5
		астеноидный	26,2±1,6	23,8±1,8	22,0±4,7	25,4±1,4
		дигестивный	30,3±1,6	26,9±1,8	29,3±2,4	28,0±1,7
5	Подтягивая на перекладине, колич. раз	торакальный	68,7±6,6	60,9±5,8	65,8±5,8	64,7±7,3
		астеноидный	66,3±2,4	49,8±8,8	58,7±12,5	54,1±9,8
		дигестивный	71,4±11,6	65,5±7,5	69,1±8,9	59,7±17

В ходе исследований установлено, что представители соматотипов существенно различаются по структуре хронической заболеваемости: для астеноидного соматотипа наиболее характерны заболевания ОДА; для представителей торакального соматотипа - заболевания ОДАб ССС, ДС и ЭС.

Установлено, что по большинству анализируемых показателей двигательной подготовленности представители СМГ дигестивного соматотипа с различными заболеваниями, как юноши, так и девушки, заметно уступают в результативности представителям остальных соматотипов. Избыточная масса тела затрудняет достижение высоких результатов в беговых, прыжковых и других видах тестов. Лучшие показатели в беге на 30 м, в беге на 1000 м, прыжках в длину с места, наклоне туловища вперед и подтягивании на перекладине отмечены у юношей и девушек торакального типа телосложения (без учета студентов мышечного типа телосложения). На основе изучения особенности морффункционального состояния и физической подготовленности студентов специальной медицинской группы установлено что. Ведущим фактором изменчивости показателей морфофункционального состояния и физической подготовленности является тип телосложения. И поэтому возникает необходимость его учета при организации занятий физической культурой со студентами СМГ с целью их оздоровления.

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## EXPLORING THE WORLD OF GEOLOGICAL MAPPING

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### ABSTRACT

*Geographical Information Systems (GIS) have revolutionized the field of geological mapping and data analysis, providing a dynamic platform for understanding the Earth's complex features. This article embarks on a comprehensive journey through the evolution of GIS, tracing its historical roots in cartography to its present-day digital marvels.*

*Delving into the heart of GIS applications in geological mapping, the article offers a detailed overview of the systems in use globally. It highlights the diverse methodologies employed in creating geological maps.*

*The insights gained from this research lay the foundation for future advancements in the field. Notably, as a direct outcome of this study, a national geoinformation system of geological data is being developed, marking a significant stride toward efficient and comprehensive geospatial data management.*

**Keywords:** *Geological GIS Applications, Evolution of GIS, Comparative Analysis, USA, Europe, Asia, Geospatial Technology, Decision-Making, Geoinformation Infrastructure, National GIS System, Resource Management.*

### INTRODUCTION

Geospatial technologies have become indispensable tools in contemporary geological studies, offering unparalleled capabilities for data visualization, analysis, and decision-making. This journey into the world of geological mapping and data analysis is framed against the backdrop of GIS history, revealing its transformative evolution from manual cartography to sophisticated digital mapping tools. While developed countries like the USA and various European nations have embraced advanced geological GIS applications, regions such as Asia showcase unique approaches to harnessing these technologies. Notably, Uzbekistan, situated at the crossroads of Central Asia, faces a distinct challenge – the absence of a national GIS system tailored to its geological context.

The purpose of this research embark on a twofold mission. Firstly, it delves into the historical roots of GIS, tracing its progression as a crucial tool in understanding Earth's complex features. As we explore the evolution of GIS, we uncover how it has shaped the contemporary landscape of geological mapping, paving the way for innovative methodologies employed in different regions across the globe.

The second facet of this study involves a comparative analysis of existing geological GIS systems in the USA, Europe, and Asia. Through this comparative lens, we identify best practices and innovative methodologies that have been instrumental in advancing geological mapping and data analysis. As we traverse the geospatial terrain, we highlight how GIS has been harnessed to unravel the complexities of unique geological terrains in different corners of the world.

Recognizing the absence of a national GIS system in Uzbekistan, the research sets the stage for the next phase – proposing developing a national geoinformation model and geodatabase for digital geological maps. Through this exploration, we not only contribute to the global understanding of geological GIS applications but also strive to fill a crucial void in the geospatial infrastructure of Uzbekistan.

## METHODS

**The story of Topographic Mapping and GIS Evolution.** Embarking on a journey through the annals of cartography, we unveil the remarkable story of topographic mapping and Geographic Information Systems (GIS), a narrative woven with centuries of innovation, strategic vision, and technological leaps. The evolution of these geospatial disciplines mirrors not only the advancement of mapmaking techniques but also the changing landscapes of societies and their intricate relationships with the environment.

### *18th Century: Early Mapping and Military Applications*

The 18th century marked the beginning of systematic topographic mapping, driven largely by military and strategic needs.

Military cartographers in European nations, such as France and England, started creating detailed maps for military planning and navigation. Techniques like triangulation were employed for accurate mapping over large areas.

### *19th Century: Ordnance Survey and the Rise of Topographic Mapping*

The 19th century saw a significant leap in topographic mapping, especially with the establishment of organizations dedicated to mapping entire regions.

The Ordnance Survey, founded in 1791 in the United Kingdom, became a pioneer in systematic topographic mapping, producing detailed maps for civilian and military use.

### *Early 20th Century: Aerial Photography and Contour Lines*

The early 20th century witnessed technological advancements that revolutionized mapping techniques.

Aerial photography became a game-changer, allowing for more detailed and efficient mapping. This innovation had significant implications for topographic mapping.

#### *Mid-20th Century: Digital Cartography and GIS Precursors*

The latter half of the 20th century brought about the transition from manual to digital methods in cartography, laying the groundwork for GIS.

Introduction of computers for map production and storage, marking the shift toward digital cartography.

Roger Tomlinson, a Canadian geographer, is often credited with creating one of the earliest GIS in the 1960s for managing land resources.

#### *Late 20th Century: GIS Development and Accessibility*

The late 20th century witnessed the formalization and widespread adoption of GIS as a distinct field.

Esri, founded by Jack Dangermond in 1969, played a pivotal role in the development and popularization of GIS software.

The development of spatial databases allowed for the storage and retrieval of geospatial data in a structured manner.

#### *21st Century: Web GIS and Open Data*

The 21st century has seen a democratization of GIS and a shift toward web-based mapping platforms.

The emergence of web GIS platforms, such as Google Maps, made geospatial information more accessible to the general public.

Open-source GIS software, like QGIS, gained popularity, fostering collaboration and innovation in the GIS community.

#### *Present and Future: Integration and Smart Mapping*

The present era is characterized by the integration of GIS into various sectors and the emergence of smart mapping technologies.

#### *Current Developments:*

Integration of GIS with remote sensing technologies, IoT devices, and big data analytics for real-time spatial analysis.

Advances in 3D mapping and visualization technologies are enhancing the representation of topographic features.

In summary, the historical context of topographic mapping and GIS is marked by a progression from manual cartography to the digital age, with key milestones



including the establishment of mapping agencies, technological innovations, the advent of GIS software, and the current trend toward integrated and smart mapping solutions.

## RESULTS AND DISCUSSION

Geological geoinformation systems (GIS) are technical tools and software used to store and manage data for the study, location, imaging, analysis, and construction of geographic information. GIS includes databases, maps, and fundamental structural information.

Geological information is a cornerstone of sustainable resource management, environmental protection, and land use planning. The effective management of geological data is crucial for harnessing the economic potential of mineral resources, mitigating environmental risks, and facilitating informed decision-making.

The advent of GIS technology has enabled the digitization of geological data and the creation of digital geological maps. This has revolutionized data access and analysis in geological studies [10].

Geological geoinformation systems find wide applications in geological research, agriculture, the economy, ecology, construction, and various other fields. They play a crucial role in managing geographic information and studying structural data.

Geological GIS analysis encompasses the following primary areas:

- Geodesy and Cartography: Used for topographic map preparation, geodetic data monitoring, thematic map creation, navigation maps, relief analysis, and land resource management.
- Ecology and Scientific Research: In ecological research, ecological monitoring, hydrological research, and other scientific disciplines, GIS is employed for the study and analysis of geographic data.
- Economic Sectors: GIS is employed for data analysis in economic research, economic sector studies, consumption analysis, and export management.
- Social Fields: Applied to the study and analysis of social sciences, GIS aids in examining living standards and analyzing information related to occupations and activities.
- Agriculture: GIS assists in optimizing planting, irrigation, fertilization, and harvesting by considering factors like soil quality, topography, and yield performance. It is a valuable tool in agriculture due to its data integration, visualization, and analytical capabilities, leading to more efficient and sustainable farming practices.
- Public Administration and Defense: GIS is used in the public administration, defense, and security sectors for information analysis and security enhancements.

Geological GIS applications have seen widespread use globally, contributing significantly to the understanding of geological phenomena. In the United States, the United States Geological Survey (USGS) has been a pioneer in developing and implementing robust GIS applications for geological mapping and hazard assessment [1]. Similarly, Europe has made substantial progress in this domain through initiatives such as the European Geological Data Infrastructure (EGDI), fostering collaboration and data sharing among member countries [2].

Geological GIS analysis in the United States may include the following:

1. United States Geological Survey (USGS): The USGS is the primary organization in the United States responsible for the creation, research, and dissemination of geological information and maps. The USGS, or "United States Geological Survey," compiles, analyzes, and manages geological information, prepares geological maps, enhances and manages geological inquiry data, and maintains a significant information database. They also engage in acquiring geological maps and analyzing geophysical, mineralogical, and other geological information.

2. The National Geospatial Program (NGP): NGP emerged as a new and dedicated force committed to advancing the National Spatial Data Infrastructure (NSDI). In a demonstration of its dedication, the U.S. Geological Survey (USGS) affirmed its commitment to refocusing and revitalizing its efforts to meet the nation's critical geospatial information needs. The NGP brings together essential components for building the NSDI, including The National Map (integrated base data), The National Atlas (interactive thematic mapping), the Federal Geographic Data Committee (FGDC, responsible for coordination, policy, and standards), and Geospatial One-Stop (information discovery and access).

3. Bureau of Land Management (BLM): The Bureau of Land Management plays a critical role in the United States, specifically managing public lands, mineral resources, mineral exploration, and other geological data. The BLM utilizes geological GIS systems to support geological mapping, mineral exploration, geological hazard assessments, and other geological research.

4. U.S. Geological Survey National Minerals Information Center (USGS NMIC): The USGS National Minerals Information Center focuses on the assessment of mineral resources, compilation of analytical data, and the preparation of statistics. The center maintains a comprehensive database of mineral resources, their composition, export, and other statistical information for the United States.

5. State Geological Surveys: Each U.S. state has its own State Geological Survey, which utilizes its individual geological GIS systems. They are responsible for researching state-specific geological information, managing surface and mineral

resources, and conducting geological research. They play a significant role in providing geological data and managing resources at the state level.

6. Industry Organizations: Geological analysis and information are supported by industry organizations that prepare geological GIS systems for information, mapping, and analysis of geological information for the management and coordination of information between geological industries, armed services, and companies. These organizations may be internal or external to the geological industry.

The USGS offers various applications and platforms that leverage GIS and geospatial technologies. Here are some notable ones:

The National Map (TNM): TNM is a suite of applications that provide access to a wide range of geospatial data layers, including topographic maps, imagery, elevation data, land cover, and more. Users can explore and download geospatial data through web-based applications.

Earth Explorer: Earth Explorer is an online search, discovery, and ordering tool developed by the USGS. It allows users to search, preview, and download a vast array of satellite and aerial imagery datasets.

USGS Earthquake Hazards Program: The USGS provides real-time earthquake data through various tools, including interactive maps and applications that display seismic activity worldwide. The "ShakeMap" application, for example, provides real-time maps of ground shaking and impact.

USGS Science Data Catalog (SDC): SDC is an online catalog that provides access to a wide range of USGS datasets. Users can search for and download geospatial datasets related to various earth science disciplines.

LandsatLook Viewer: The USGS offers the LandsatLook Viewer, an online tool that allows users to view and download full-resolution satellite imagery from the Landsat program.

USGS Streamer: This is a web-based tool that allows users to trace the paths of rivers and streams in the United States. It provides a visual representation of the upstream and downstream areas for a given location.

Geological Geographic Information Systems (GIS) data in European countries are typically managed by national geological survey organizations or government agencies responsible for geology and natural resources. The use of national geological geoinformation systems (GIS) in European countries varies, and many nations have well-established systems to manage geological data for various purposes. These agencies collect, maintain, and provide access to geological data through various GIS platforms and tools. Here is a list of some European countries with varying levels of use of national geological geoinformation systems:

1. United Kingdom: The British Geological Survey (BGS) manages a comprehensive geological GIS system. It provides extensive geological data, maps, and online tools for users. The UK has a high level of utilization for land planning, environmental assessment, and resource exploration.

2. Germany: Germany, through the Federal Institute for Geosciences and Natural Resources (BGR), has a sophisticated geological GIS system. It is widely used for environmental protection, groundwater management, and natural hazard assessment.

3. Norway: Norway's Geological Survey of Norway (NGU) operates a robust geological GIS system. It supports mineral resource management, environmental monitoring, and geological hazard assessment. The system is known for its high-quality data and accessibility.

4. France: France has a well-established geological GIS managed by institutions such as BRGM (the French Geological Survey). It is extensively used for environmental management, mineral exploration, and research.

5. Sweden: Sweden's Geological Survey of Sweden (SGU) maintains a comprehensive geological GIS system. It supports mineral exploration, land use planning, and environmental assessments.

6. Finland: Geological Survey of Finland (GTK) manages Finland's geological GIS system, which is utilized for mineral exploration, land use planning, and environmental monitoring.

7. Spain: Spain has a geological GIS system managed by the Geological and Mining Institute of Spain (IGME). It is used for mineral resource management, environmental monitoring, and geological hazard assessment.

8. Italy: Italy's Institute for Environmental Protection and Research (ISPRA) is involved in managing the country's geological GIS system. It is utilized for various purposes, including environmental protection, land use planning, and hazard assessment.

9. Netherlands: The Geological Survey of the Netherlands (TNO) manages a geological GIS system used for land subsidence studies, environmental monitoring, and subsurface mapping.

10. Poland: Poland's National Geological Institute (PGI-NRI) operates a geological GIS system used for mineral exploration, environmental monitoring, and research.

11. Greece: Greece's Institute of Geology and Mineral Exploration (IGME) manages a geological GIS system supporting mineral exploration, environmental management, and hazard assessment.

12. Iceland: The National Energy Authority of Iceland (NEA) manages geological GIS data used for energy resource assessments, environmental monitoring, and geological hazard studies.

These examples showcase the diversity in the use and development of national geological geoinformation systems across European countries, reflecting their individual geological characteristics, economic priorities, and environmental concerns.

These national geological survey organizations often have dedicated websites and online platforms where you can access geological maps, datasets, and other geological information. Additionally, the European Geological Data Infrastructure (EGDI) project aims to provide a harmonized European geological GIS infrastructure for sharing geological data across European countries.

Geological Geographic Information Systems (GIS) data in Asian countries are typically managed by national geological survey organizations, government agencies, or research institutions responsible for geology, natural resources, and environmental management.

Across Asia, diverse approaches to geological GIS applications are evident. Countries like China and Japan have developed advanced systems, showcasing the dynamic nature of GIS implementation in the region. A noteworthy example is the study on solar energy potential utilizing GIS-based urban residential environmental data, as exemplified by a case study in Shenzhen, China [4]. This study underscores the diverse applications of GIS in assessing renewable energy potential, demonstrating the utility of geospatial tools beyond traditional mapping functions.

Examining global perspectives, institutions like the Geological Survey of Japan (GSJ) have played a crucial role in advancing geological GIS applications. GSJ, under the aegis of the AIST (National Institute of Advanced Industrial Science and Technology), has been instrumental in mapping Japan's geological features with a focus on seismic hazards and natural resources [5]. The experiences and methodologies adopted by GSJ contribute valuable insights to the broader understanding of geological GIS applications.

Another facet of GIS application lies in flood prediction studies, exemplified by a scrutiny of the performance of GIS-based Analytical Hierarchical Process (AHP) approach and the Frequency Ratio model in flood prediction. A case study of Kakegawa, Japan, highlights the significance of geospatial techniques in understanding and predicting natural disasters, showcasing the international relevance of GIS in addressing environmental challenges [6].

This table provides a comparative overview of the level of Geological Geographic Information System (GIS) utilization in various countries, highlighting key

aspects of their respective infrastructures. The "Level of Use" categorizes the extent to which GIS is integrated into geological studies, while the "Overview" briefly outlines the key functionalities and emphases in each country's geological GIS landscape.

Country	Level of Use	Overview
<b>China</b>	High	Well-developed geological GIS infrastructure managed by China Geological Survey (CGS). Extensively used for mineral exploration, environmental management, and geological hazard assessment. Significant emphasis on geoinformation systems in geological studies.
<b>India</b>	Moderate to High	Geological Survey of India (GSI) utilizes geological GIS for mineral exploration, environmental monitoring, and groundwater resource management. Level of use varies across states, with more developed regions employing GIS technology more extensively.
<b>Japan</b>	High	Geological Survey of Japan (GSJ) has a sophisticated geological GIS system used extensively for geological research, resource assessment, and disaster management. Strong focus on technology and innovation.
<b>Indonesia</b>	Moderate	Indonesian Geospatial Information Agency (BIG) enhancing geological GIS capabilities. Used for mineral resource management and environmental monitoring; room for further development.
<b>Australia</b>	High	Geoscience Australia manages advanced geological GIS systems used for mineral exploration, environmental studies, and natural resource management. Extensive geological surveys contribute to a high level of GIS use.
<b>South Korea</b>	High	Korea Institute of Geoscience and Mineral Resources (KIGAM) manages a comprehensive geological GIS system extensively used for mineral exploration, environmental research, and hazard assessment.
<b>Russia</b>	Moderate to High	Federal Agency for Mineral Resources (Rosnedra) manages geological GIS systems for mineral resource exploration and management. Level of use varies across regions due to the vastness of the country.
<b>Iran</b>	Moderate	Geological Survey of Iran (GSI) employs geological GIS for mineral exploration, environmental management, and hazard assessment. Level of use influenced by economic factors.
<b>Saudi Arabia</b>	Moderate	Saudi Geological Survey (SGS) utilizes geological GIS for mineral exploration, groundwater management, and environmental monitoring. Level of use gradually increasing.
<b>Malaysia</b>	Moderate	Mineral and Geoscience Department Malaysia (JMG) manages geological GIS systems for mineral exploration, land use planning, and environmental studies. Level of use reflects the country's economic activities.

**Table 1. Comparative Overview of Geological GIS Usage in Selected Countries**

This comparative analysis offers insights into the diverse approaches and emphases of geological GIS applications across selected countries, contributing to a broader understanding of global geospatial infrastructures [7, 8, 9].

The impact of geological GIS applications in these countries extends across various domains:

**Resource Management:** High levels of GIS use in countries like China, Japan, and Australia contribute significantly to efficient resource management, particularly in mineral exploration and environmental studies.

**Innovation and Technology:** Japan's GSJ and South Korea's KIGAM stand out for their strong focus on technology and innovation, showcasing the transformative role of GIS in geological research.

**Economic Influence:** The use of GIS in economic sectors, as seen in China and India, demonstrates its influence on economic research, sector studies, and consumption analysis.

**International Relevance:** The moderate to high use in Russia highlights the GIS systems' adaptability to vast and diverse geographical regions, showcasing international relevance.

This overview sets the stage for a detailed analysis of geological GIS applications globally, with a specific focus on Uzbekistan's potential for GIS development and its impact on geological studies.

While the Geological Survey of Japan (GSJ) and the Geological Survey of the United States (USGS) exhibit high levels of GIS usage, this study reveals distinct patterns in the European context. Countries such as Germany and the United Kingdom share similarities with Japan in their emphasis on technology and innovation. However, variations in the level of GIS adoption across European nations underscore the importance of considering regional factors and specific geological contexts in the implementation of GIS technologies.

While this study provides valuable insights into the current state of geological GIS usage in Europe, limitations exist, including the focus on selected countries and the potential influence of regional variations. Future research could delve deeper into specific regional influences and consider the impact of geopolitical factors on GIS adoption. Additionally, exploring the integration of emerging technologies, such as artificial intelligence, in geological GIS applications presents an exciting avenue for future investigation.

## CONCLUSION

In conclusion, this study has undertaken a comprehensive journey through the historical evolution of GIS, revealing its transformative role in geological studies.

From humble beginnings in manual cartography to the sophisticated digital mapping tools of today, GIS has not only reshaped the global landscape of geological mapping but has become an indispensable asset in understanding the intricacies of our planet.

Furthermore, it is envisaged that the outcomes of this research will play a pivotal role in the development of a national geoinformation model and geodatabase of digital geological maps. By understanding the diverse approaches and influences on GIS adoption, this research provides a blueprint for the creation of tailored strategies that can inform the establishment of a robust national geoinformation infrastructure in Uzbekistan.

In the ever-evolving landscape of GIS, our exploration serves as a testament to the endless possibilities that lie ahead, promising a future where geological studies continue to be enriched by the transformative capabilities of geospatial technologies.

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## CLIL TEXNOLOGIYASINING CHET TILI DARS JARAYONIDA QO‘LLANILISHINING SAMARADORLIGI

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**Annotatsiya:** Ushbu maqolada zamonaviy ta‘lim texnologiyasi hisoblangan CLIL texnologiyasining dars jarayonida qo‘llanishi to‘g‘risida fikr yuritiladi. CLIL ta‘lim texnologiyasining maqsadi talabalarga jamiyatda faol bo‘lishiga yordam berishi bilan birgalikda matn materialini sohaga doir kasbiy leksik terminlar yordamida ingliz tilida o‘rganish imkoniyatini berishdan iboratdir.

**Kalit so‘zlar:** CLIL, ikkinchi til, chet tili, ko‘nikma, integratsiya, kompetensiya, metod.

Jahon ta‘lim tizimida olib borilayotgan islohotlar natijasida uzluksiz ta‘limda chet tilini samarali o‘qitish tizimi joriy etildi. Amalga oshirilgan ishlar bilan bir qatorda bugungi kunda chet tilini samarali va tizimli o‘qitish sifatini oshirish zarurati mavjud. Hattoki, Bolonya konvensiyasi doirasida ham xalqaro ta‘limiy dasturlar qamrovining jadallik bilan kengayib borayotgani zamonaviy sharoitda talabadan chet tilini, nafaqat kasbiy nuqtai-nazardan, balki muloqotning akademik sohasi sifatida foydalanish malakasiga ega bo‘lishni talab etadi.

O‘zbekiston Respublikasi Prezidentining “Oliy ma‘lumotli mutaxassislar tayyorlash sifatini oshirish to‘g‘risida”gi 2017-yil 27-iyuldagi PQ-3151-son qaroriga [1] muvofiq o‘qish ingliz tilida olib boriladigan ta‘lim muassasalari bilan hamkorlikda ishlab chiqilgan o‘quv reja va dasturlari bo‘yicha ta‘lim jarayoni ingliz tilida amalga oshirilishi; bitiruvchilarga belgilangan tartibda davlat tomonidan tasdiqlangan ma‘lumot to‘g‘risidagi hujjat (diplom) bilan birga, oliy ta‘limdan keyingi ta‘limni davom ettirish imkonini beruvchi xalqaro darajadagi tegishli TOEFL, TKT, IELTS Idp, IELTS sertifikatlar berilishi belgilab berildi.

Zamonaviy ko‘nikmalar jumladan, chet tillarini o‘rganish va chet tillaridan foydalanishda bilish, tushunish, idrok etish, eslab qolishning muqobil va variativ usullarini aniqlash chet tilini o‘qitish samaradorligini oshirishning muhim omili hisoblandi. Shu o‘rinda aytish joizki, chet tilini o‘qitish samaradorligini oshirish

maqsadida jahonning ilg'or ta'lim texnologiyalarini o'rgatishni va tajribadan o'tgan texnologiyani milliy o'qitish tizimiga joriy etish yaxshi natija ko'rsatmoqda.

Shunday sifatli mexanizmlardan biri CLIL texnologiyasidir. CLIL texnologiyasi - ikki tillikni amalga oshirish mexanizmi bo'lib ta'lim oluvchi obyektlarda, ya'ni o'quvchida o'z ona tili bilan birgalikda o'zga tilni o'rganish, imkonini beradi. CLIL so'zining ma'nosi content bu "fan", "soha", "mavzu" bo'lsa, language - til, integratsion - "integratsiya" aloqadorlik learning "o'rganish" kabi so'zlarning bosh harfli qisqartmasidan hosil bo'lgan tushunchani ifodalaydi. CLIL texnologiyasi o'rganilayotgan yangi mavzuni, sohani, fanni xorijiy tilda ya'ni o'zga tilda o'rganishni tavsiya etadi.

Boshlang'ich o'rta va oliy ta'limdagi CLIL ta'lim texnologiyasi uzoq vaqt davomida Yevropada til o'qitishning biror fan, soha yoki mavzuga asoslangan shakli bo'lib kelgani shubhasiz. CLIL ning keng miqyosida qo'llanilishining afzalliklardan biri bu chet tilini, asosan ingliz tilini oddiy maktab o'quv mashg'ulotlaridan farqli ravishda, tilshunoslikka aloqador bo'lmagan fanlarni shu tilda o'rgatish orqali til o'rganish imkoniyatini oshirishdir.[2]

O'rganish obyekti til va mavzu integratsiyani tashkil etuvchi CLIL texnologiyasi odatiy chet tili darslari kamchiliklarini bartaraf etadi va muvaffaqiyatli o'rganishga hech qanday to'siq bo'lmaydi.[3]

CLIL ta'lim texnologiyasi asosida talaba obyektida kengaytirilgan va integratsiyalangan holda kommunikativ kompetensiyani rivojlantiradi. O'rganishi rejalashtirilayotgan mavzuni bir paytning o'zida ingliz va ona tillarida o'zlashtirish kabi juft maqsadlarni amalga oshiradi. CLIL ta'lim texnologiyasining maqsadi talabalarga jamiyatda faol bo'lishiga yordam berishi bilan birgalikda matn materialini sohaga doir kasbiy leksik terminlar yordamida ingliz tilida o'rganish imkoniyatini berishdan iboratdir.

Ikkinchidan, kontentga asoslangan tilni o'qitishda ikkinchi til kompetensiyasining rivojlanishini xaritalashtirgan so'nggi modellar kontentga asoslangan o'rganish va biror fan ixtisosligida tilni o'rganish o'rtasidagi bog'liqlikni ko'rsatadi hamda yangi tushunchalar va ma'nolarni tushunish va integratsiya qilish uchun asosiy hisoblanadi. Mavzuni chuqur o'rganish lingvistik shaklga e'tibor bermasdan amalga oshirilmaydi. Albatta, bu kabi texnologiya talaba uchun mavzuni o'rganishni o'z tilida emas balki chet tilida o'rganishni to'liq almashtira olmaydi, lekin bu texnologiya til o'rganish sohasida sezilarli ijobiy o'zgarishlarga asos bo'la oladi. Zamonaviy jadal rivojlanayotgan jamiyatda ta'limni modernizatsiya qilishning jiddiy jarayonlari mavjud bo'lib bu o'qituvchilar malakasini o'zgartirish zaruratini keltirib chiqaradi. Bu esa o'z navbatida o'qituvchilarning malakasini oshirishga yangicha

yondashuvni talab qiladi. shunday qilib o'qituvchining kasbiy standartini joriy etish ta'limning ushbu bosqichida zarur bo'lgan turli xil o'qituvchilarning umumiy va kasbiy kompetensiyalarini shakllantirish va takomillashtirishga yordam beradi.

Metodning samaradorligi o'qituvchi va talaba o'rtasidagi zamonaviy o'zaro muloqotga asoslangan hamda zamonaviy ta'lim texnologiyalaridan foydalanadigan dars jarayonlarini tashkil etish hisoblanadi.

Xulosa qilganda, kasbiy kompetensiyani shakllantirish kommunikativ o'qitish metodikasining asosi hisoblanadi. Chunki talabaning malakasi yetarli emasligi bois til muloqotida talabaning nutqi talabga javob bermaydi. Shuning uchun ham nazarimizda talabaga texnologik manba taqdimotining birinchi bosqichida, leksikani to'g'ri qo'llashga o'rgatilishi maqsadga muvofiqdir. Har bir darsda material taqdimoti bo'lgani bois, so'z boyligini egallab borish o'qituvchi diqqat markazida bo'lmog'i zarur. Tadqiqot ishimizda talabalari kasbiy kompetensiyasini rivojlantirish ingliz tilini o'rgatishning CLIL ta'lim texnologiyasi asosida yoritilishi mavzuni ilmiy jihatdan o'z tasdig'ini topdi, deb o'ylaymiz. Talabalar yangi birliklardan foydalanishda situativ muhitni e'tiborga olish muhim ekanligiga ishonch hosil qildik.

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## CHET TILI O'QITUVCHILARINING KASBIY KOMPETENSIYALARI

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*Annotatsiya:* So'nggi yillarda dunyoda ro'y berayotgan o'zgarishlar, jumladan, yumshoq ko'nikmalarga bo'lgan talab ortib borayotgani va bu o'zgarishlar butun dunyo bo'ylab ingliz tili o'qituvchilarining kasbiy kompetensiyalariga ta'sirini ko'rib chiqadi. Maqolada Kanada, Yevropa Ittifoqi, Rossiya va Hindiston kabi bir qator mamlakatlardagi o'qituvchilarga qo'yiladigan kasbiy standartlar va talablari haqida, bu o'zgarishlarning o'z aksini topgan yoki yo'qligini isboti va o'qituvchilarni nima tashvishga solayotganini ko'rish uchun Hindistondagi o'qitish konteksti tasvirlab berilgan. Maqolada ko'rsatilishicha, raqamli kompetensiyalar ko'plab mamlakatlarda o'qituvchilarning kompetensiyalariga kiritilgan bo'lsa-da, o'qituvchilar va ularning potentsial ish beruvchilarining ma'lum talablari o'qituvchilarning kompetensiyalari va talablari doirasida o'z aksini topmaydi. O'qituvchilarning umumiy va ingliz tili o'qituvchilari kompetensiyalarining joriy doiralari, xususan, o'qituvchilar va ularning potentsial ish beruvchilarining umidlarini qondirish uchun qisman qayta ko'rib chiqilishi kerak, bu esa o'qituvchilarni tayyorlashga ko'proq fanlararo yondashuvga olib kelishi mumkin.

*Kalit so'zlar:* Akademik til o'qituvchisi, oliy ma'lumot, professional kommunikativ kompetensiya, chet tillari, Ikkinchi tilni o'zlashtirish, motivatsiya, samarali strategiya, qiziqishni targ'ib qilish, o'qituvchi ta'limi, o'qituvchini rivojlantirish, yumshoq ko'nikmalar.

So'nggi yillarda dunyoda sezilarli o'zgarishlar ro'y berdi. O'qituvchining kasbi ham bundan mustasno emas, dunyo bilan birga o'zgarib bordi. COVID-19 pandemiyasi davrida o'qituvchilar masofaviy o'qitish usullarini o'zlashtirishlari kerak edi. Neyron tarmoqlarning rivojlanishi yangi imkoniyatlar bilan bir qatorda yangi xususiyatlarning ko'pligi bilan yangi muammolarni ham taqdim etadi. O'qitishning

texnik xususiyatlaridan tashqari, o'quvchilarning umidlari va talabalarning kelajakdagi ish beruvchilarining ehtiyojlari ham o'zgarib bormoqda. Bir qator tadqiqot natijalariga ko'ra, ko'plab ish beruvchilar o'zlarining potentsial xodimlaridan nafaqat qattiq ko'nikmalarni, balki yumshoq ko'nikmalarni ham kutishadi. So'nggi tadqiqotlar shuni ko'rsatadiki, yumshoq ko'nikmalar ko'plab mamlakatlarda juda muhim hisoblanadi. AQShda 2016 yilda Adecco Stafng HR kompaniyasi tomonidan o'tkazilgan so'rov shuni ko'rsatdiki, rahbarlarning 44 foizi (so'rovda qatnashgan 500 ta yuqori lavozimli rahbardan) yumshoq ko'nikmalarning etishmasligi ular ishchi kuchida ko'rgan eng katta malaka kamchiligi ekanligini aytishgan. 2018 yilda Bloomberg shuni ko'rsatadiki: Agar yaqinda bitiruvchilar o'zlarining yangi ish joylariga yaxshi tayyorgarlik ko'rmagan bo'lsalar, bu ularning qattiq qobiliyatlari etishmasligi uchun emas. So'ralgan korporativ respondentlarning qariyb 90 foizi va akademiklarning 88 foizi yangi ishga qabul qilinganlar o'z ishlarini muvaffaqiyatli bajarish uchun kompyuter savodxonligi va yozma muloqot kabi qiyin ko'nikmalarga ega ekanligini aytishdi. Biroq, ikkala guruh ham yangi xodimlarning yumshoq ko'nikmalaridan unchalik mamnun emas edi. Har 10 ta korporatsiyadan to'rttasi va ilmiy muassasalarning deyarli yarmi yangi ishga qabul qilingan xodimlar yuqori darajada ishlash uchun zarur bo'lgan yumshoq ko'nikmalarga ega emasligini aytishdi[Bloomberg BNA. Bloomberg Keyingi, 2018 yil, 2-bet]. So'rovda 200 ta yuqori darajadagi respondentlar, 100 ta korxonalaridan va 100 ta akademik soha vakillari ishtirok etdi va korporativ respondentlarning 34 foizi va akademik muassasalardagi respondentlarning 44 foizi yangi ishga qabul qilinganlar qattiq mahorat bilan tayyorlangan, ammo samarali bo'lish uchun yumshoq ko'nikmalarga ega emas deb hisoblashini ko'rsatdi. LinkedIn tomonidan 2019-yilgi Global tendentsiyalar hisoboti 35 mamlakatdagi 5165 ta biznesni qamrab olgan va respondentlarning 92 foizi yumshoq ko'nikmalar qattiq ko'nikmalar kabi muhim ekanligini ta'kidlagan bo'lsa, ish beruvchilarning 30 foizi qattiq ko'nikmalardan ko'ra odamlarni yumshoq ko'nikmalariga asoslangan holda ish bilan ta'minlash muhimroq ekanini ta'kidlagan. Bundan tashqari, muvaffaqiyatsiz xodimlarning 89 foizi yumshoq ko'nikmalarga ega emas. Ko'rinib turibdiki, yumshoq ko'nikmalar ishga joylashish va ishdagi muvaffaqiyatning asosiy omiliga aylanmoqda. Avstraliya Savdo-sanoat palatasi o'zining AQF ekspertlar guruhiga 2019 yilgi Avstraliya kvalifikatsiyalari doirasini ko'rib chiqishda yumshoq ko'nikmalar har bir malaka uchun talab bo'lishi kerakligini ta'kidlaydi. Bu 2018-yilda Sky News biznes dasturining "The Ladder" dasturida AIBusiness School bosh direktori Ben Foote tomonidan aytilgan "Keyingi o'n yil ichida softskill intensiv kasblar Avstraliyadagi barcha ish o'rinlarining 63 foizini tashkil qilishi kutilmoqda" degan bayonoti bilan chambarchas

bog'liq. yumshoq ko'nikmalarni kasbiy ta'limda o'rganish mazmunining muhim qismiga aylantiradi [Myers,2021]. Ta'limdagi yumshoq ko'nikmalarning ahamiyati ortib borayotganligi sababli, yumshoq ko'nikmalarni o'rgatish zarurati butun dunyo bo'ylab o'qituvchilar va ish beruvchilar uchun asosiy tashvishga aylandi (Krouli, 2019). Yumshoq ko'nikmalar ta'limning muhim qismiga aylanayotganligi sababli, umumiy o'qituvchilar va ingliz tili o'qituvchilari - agar o'rgatmasalar ham, dars berishda ularni hisobga olishlari kerak [Instefjord & Munthe, 2017]. Shu sababli, savol tug'iladi. Ikkinchi til sifatidagi ingliz tili yoki chet tili sifatidagi ingliz tili o'qituvchilari ushbu o'zgarishlar va ehtiyojlarni qondirish uchun qanday kompetensiyalarga ega bo'lishlari kerakligi to'g'risida kelib chiqadi [Mouzaet al., 2014]. Shuning uchun o'qituvchilarning kasbiy kompetensiyalari haqidagi mavjud qarashlarni o'rganish muhim ahamiyatga ega. Ulardan nima kutilayotgani va ularning kasbiy rivojlanishida eng yaqin ehtiyojlar nima bo'lishi mumkinligini ko'rish uchun chet tili sifatida ingliz tili. Shu maqsadda ushbu maqolada bir qancha mamlakatlarda kutilayotgan talablar va talablar haqida umumiy ma'lumot olasiz hamda Hindistondagi ingliz tili o'qituvchisining kompetensiyalarini batafsil ko'rib chiqadilar.

Kembrij ingliz tilini o'qitish asoslari [2018] quyidagi yo'nalishlar bo'yicha kompetentlik bayonotlari ro'yxatini o'z ichiga oladi: Ta'lim va o'quvchi, O'qitish, o'rganish va baholash, Til qobiliyati, Til bilimi va xabardorligi, Kasbiy rivojlanish va qadriyatlar Evangelin Pristsilla B., A.V. Konobeev Originalnaya maqola o'qituvchi darajalarini "poydevor", "rivojlanayotgan", "mutaxassis" va "mutaxassis" toifalariga ajratadi va kelgusi yilda tizim joriy etilganidan keyin muhim bo'lgan "raqamli o'qitishning asosiy tushunchalarini tushunish" kabi ba'zi xususiyatlarni bayon qiladi. /o'rganish», lekin hech qanday tafsilotlarni keltirmaydi va aks holda o'qituvchilarning kompetensiyalarining juda an'anaviy taqsimlanishini ta'minlaydi, bu esa o'zini juda umumiy tavsiflovchilar bilan cheklaydi, masalan, "O'qitishni o'rgatish tamoyillari va usullarini mukammal tushunadi. Dars rejalari va sinf amaliyoti o'quvchilarning ehtiyojlariga ko'ra, boshqa ko'nikmalar bilan tez-tez integratsiyalashgan holda turli bosqichlardan foydalangan holda o'qitish ko'nikmalarini rivojlantirish uchun izchil foydalaniladigan keng ko'lamli texnikalarni namoyish etadi. Boshqacha qilib aytganda, ushbu tizim o'qituvchilarning kompetensiyalariga juda an'anaviy yondashuvga amal qiladi va ularni baholash uchun aniq vositalarni taqdim etmaydi.

Mualliflar Evropa Ittifoqi mamlakatlaridagi bir nechta tadqiqot maqolalari va milliy standartlarning qisqacha sharhini taqdim etadilar va shunday xulosaga kelishadi: "Yevropa mamlakatlarida ingliz tili o'qituvchisiga turli xil ijtimoiy ehtiyojlar va talablar mavjud, shuning uchun ham ingliz tili o'qituvchisi uchun bitta "talablar

to'plamini" aniqlab bo'lmaydi. Ingliz tili o'qituvchisining kasbiy kompetensiyalari». Mualliflar Britaniya Kengashi tomonidan o'tkazilgan so'rov natijalariga ko'ra, chet tili o'qituvchilarining 7 ta xususiyatidan foydalanishni taklif qiladilar: o'qituvchi 1. ta'lim jarayoniga qo'yiladigan rasmiy burch va talablarni bilishi, 2. o'qituvchilarning ehtiyojlarini hisobga olishi, 3. hamdard bo'lmoq, 4. ijodkor bo'lmoq, 5. tinglay olish, 6. sabrli bo'lish va 7. sinfdan tashqarida o'rganishni rag'batlantirish. Ushbu sanab o'tilgan fazilatlar chet tili o'qituvchilari uchun xos bo'lmagan ko'rinadi, lekin juda umumiy xususiyatga ega. Bundan tashqari, bu fazilatlarni o'lchash juda qiyin bo'lib tuyuladi, hatto mualliflar o'z maqolalarini "davlatimiz (Ukraina) chet tili o'qituvchilari uchun milliy professional standartlarni ishlab chiqishda ushbu talablarni hisobga olishi tavsiya etiladi" degan tavsiya bilan yakunlaydilar, deb o'ylashgan. Garchi sanab o'tilgan sifatlarni «talablar» deb nomlash juda qiyin bo'lsa-da, ular muhim jihatni o'z ichiga oladi, ya'ni sinfdan tashqari o'rganishni rag'batlantirish uchun o'qituvchi o'qituvchilarga bepul internet resurslaridan foydalanishni tavsiya qilishi kerak - bu minglab o'qituvchilar tomonidan amalga oshirilgan. yillar. Kvebekda [2021] chop etilgan Kanadaning "O'qituvchilar uchun kasbiy kompetensiyalar bo'yicha ma'lumotnoma doirasi" "so'nggi yigirma yil ichida sodir bo'lgan, o'qituvchilar tomonidan bajarilgan ishlarga bevosita yoki bilvosita ta'sir ko'rsatgan asosiy o'zgarishlarni" tavsiflaydi. Talabalarning bilim olishini qo'llab-quvvatlash uchun o'qituvchining hozirgi bilim holatiga asoslanib, o'qituvchilarning kasbiy faoliyatini boshqaradigan o'qituvchi» (talabalarning o'qituvchisini va ta'limini yanada rivojlantirishga harakat qilish, turli vaziyatlarda kasbiy mustaqillikni qanday amalga oshirishni bilish, ta'lim berishda mavjud bilimlarga asoslanish), «bir qator yo'riqnomalarni bayon qiladi va o'qituvchining kompetensiyalarini asoslovchi kasbiy bilimlarni batafsil bayon qiladi» va « ma'lumot bazasini tashkil etuvchi 13 ta kompetensiyaning har birini va ularning o'qituvchilar ishida qanday qo'llanilishini ko'rsatadigan asosiy elementlarni tavsiflaydi».

Ushbu asos umuman o'qituvchilar, shu jumladan chet tillari o'qituvchilari uchun ishlab chiqilgan va shuning uchun bizni qiziqtiradi. Hayotdagi o'zgarishlar qatorida o'qituvchilarning kompetensiyalarini o'zgartirish sabablari qatorida, Raqamli ta'lim ijtimoiy o'zgarishlar bilan bir qatorda raqamli texnologiyalardan foydalanishning ko'payishini ham sanab o'tadi: "Raqamli ta'lim vosita sifatida, balki savodxonlik va ijtimoiy amaliyot shakli sifatida ham hozirda o'qituvchilarning asosiy vazifalaridan biridir. maktab va o'qituvchilar, Raqamli kompetentlik asosida tasvirlanganidek. Bu mas'uliyat o'qituvchilardan doimiy ravishda yangi kompetensiyalarni rivojlantirish va ularni yangilab turishni talab qiladi». Bundan tashqari, "Tadqiqotlar shuni ko'rsatdiki, bolalar vizual, jismoniy, lingvistik va ijtimoiy ma'lumotlarni qayta ishlash qobiliyatlari

bilan tug'iladilar. Bular kelajakda ta'lim olish, shu jumladan maktabda o'qish turadi", demak, o'qituvchilar o'z ta'limini talabalarda ushbu ko'nikmalarga moslashtira olishlari kerak.

Konferentsiya chet tili o'qituvchilariga tegishli bo'lgan quyidagi kompetensiyalarni o'z ichiga oladi:

### **IKKI ASOSIY KOMPETENSIYALAR**

Vakolatlilik 1 Vazifalarni bajarishda madaniy yo'l-yo'riq ko'rsatish.

Malakalilik 2 O'qitish tilini o'zlashtirish

**1-Ma'lumot:** Talabalar bilan ishlash va talabalar uchun asosiy bo'lgan oltita ixtisoslashgan kompetensiyalar

Ko'nikma 3 O'qitish va o'rganish holatlarini rejalashtirish

Qobiliyat 4 O'qitish va o'rganish holatlarini amalga oshirish

Kompetentsiya 5 O'rganishni baholash Malakalilik 6 Sinf qanday ishlashini boshqarish

Malakalilik 7 O'quvchilarning xilma-xilligini hisobga olish

Kompetentsiya 8 Talabalarining o'rganishga bo'lgan muhabbatini qo'llab-quvvatlash

**2-Ma'lumot:** Hamkorlikdagi professionallik asosidagi ikkita kompetentsiya

Ko'nikma 9 Maktab jamoasi a'zosi sifatida faol ishtirok etish

Malakalilik 10 Hamkorlik oila va jamiyatdagi ta'lim bo'yicha hamkorlar bilan

**3-Ma'lumot:** O'qituvchilarning kasbiy mahoratiga xos bo'lgan yagona kompetentsiya

Kompetentsiya 11 O'z kasbiy rivojlanishiga va kasbga bo'lgan intilish

### **IKKI TA'RIFLAR KO'ZMAS KOMETENSIYALAR**

Kompetentsiya 12 **Raqamli texnologiyalarni safarbar etish**

Kompetentsiya 13 Kasbning axloqiy tamoyillariga muvofiq harakat qilish.

Ko'rinib turibdiki, 12-kompetentsiya ham o'qituvchilar raqamli texnologiyalarni safarbar qila olishi kerakligini ta'kidlaydi. U quyidagicha ta'riflanadi: Bu kompetensiyaning ko'lemi sinfda pedagogik maqsadlarda raqamli vositalardan foydalanish uchun zarur bo'lgan texnik ko'nikmalardan tashqariga chiqadi. O'qituvchilar nafaqat ularni qo'llab-quvvatlaydigan raqamli vositalarni, balki ular baham ko'riladigan madaniy kontekstni ham hisobga olgan holda, bu o'zgarishlarning ta'limning tabiati va qiymatiga ta'siridan xabardor bo'lishlari kerak. Shu ma'noda, raqamli texnologiyalardan foydalanish barcha madaniy amaliyotlarimiz va mahsulotlarimiz. U boshqa intellekt shakllarini tarmoqqa birlashtiradi va shu bilan birga, bilimning boshqa modellari, bilimga kirishning boshqa modellari va o'quvchilarning bilim olishi va o'quvchilarning bilim bilan o'zaro munosabatlariga tobora ko'proq ta'sir ko'rsatadigan ta'limning boshqa modellarini birlashtiradi" [ReferenceFramework for Professional Competencies for Teachers, 2021, p. 78] va



quyidagi asosiy elementlarni o'z ichiga oladi:- Raqamli asrda axloqiy fuqarolikni amalga oshiradi.- Texnologik ko'nikmalarni rivojlantiradi va safarbar qiladi.- Ta'lim uchun raqamli resurslar salohiyatidan foydalanadi.

-Axborot savodxonligini rivojlantiradi va safarbar qiladi.

- Raqamli texnologiya orqali hamkorlik qiladi.

- Raqamli texnologiya orqali muloqot qiladi.

- Raqamli texnologiya orqali kontent ishlab chiqaradi.

- Inklyuzivlikni qo'llab-quvvatlash va turli ehtiyojlarni qondirish uchun raqamli vositalardan foydalanadi.

- Shaxsiy va professional imkoniyatlarni oshirish uchun raqamli texnologiyani safarbar qiladi.

- Raqamli texnologiya orqali turli muammolarni hal qiladi.

- Raqamli texnologiyalardan foydalanish borasida tanqidiy fikrlashni rivojlantiradi.

-Raqamli texnologiyalardan foydalanishda innovatsion va ijodiy yondashuvni qabul qiladi [ O'qituvchilar uchun professional kompetentsiyalar uchun ma'lumotnoma asoslari, 2021, p. 79].

Qalin harflar bilan yumshoq ko'nikmalarga aniq mos keladigan elementlar ko'rsatilgan. Ko'rinib turibdiki, Konstitutsiyada dunyodagi so'nggi rivojlanish va masofaviy o'qitish vositalaridan umumiy foydalanishni aks ettiruvchi o'quv kurslariga oid kompetentsiyalar ro'yxati keltirilgan.

Bu g'oya 2017 yilda Ispaniyada ishlab chiqilgan YUNESKOning O'qituvchilar uchun Raqamli Qobiliyatning umumiy doirasi (CDCFT) bilan mos keladi. CDCFT 21-asrda amaliyotchilarni o'qitish uchun zarur deb topilgan 21ta raqamli kompetentsiyani aks ettiradi, ular (1) Axborot va ma'lumotlar savodxonligi, (2) Aloqa va hamkorlik, (3) Raqamli tarkibni yaratish, (4) Xavfsizlik kabi 5 ta asosiy kompetentsiya sohalariga qaratilgan. va (5) Muammoni hal qilish, ular offoundation, o'rta va yuqori darajalarda belgilangan . kasbiy mahorat (maxsus, uslubiy, psixologik-pedagogik tayyorgarlik), mehnat (mehnat munosabatlari, o'quv jarayonining o'zi, resurslar, texnika va o'qitish usullaridan optimal foydalanish) va san'at (aktyorlik va notiqlik.)" va "O'qituvchilarning kasbiy mahoratining asosiy ko'rsatkichlari. Chet tillari talabalarning kommunikativ va shaxslararo muloqot ko'nikmalarini rivojlantirish zaruriyatini o'z ichiga oladi, uning tarkibiy qismlari lingvistik, mavzuli, ijtimoiy-madaniy, ta'lim va kognitiv kompetentsiyadir. Muallif o'qituvchi nafaqat o'quvchilarning ingliz tili bo'yicha bilimlarini rivojlantirish, balki ularning kognitiv qobiliyatlarini rivojlantirish bilan ham shug'ullanishi kerakligini aniq ta'kidlaydi. . [2018] oldingi tadqiqotlardan so'ng ingliz tili o'qituvchilarining madaniy va lingvistik, lingvistik va didaktik, ijtimoiy va ta'lim, kasbiy va ta'lim kompetensiyalarini

ro'yxatlang. Boshqalar qatorida, mualliflar yuqorida tilga olingan kompetensiyalarning bunday tarkibiy qismlarini "sinfda muxokamada muxoliflarga hurmat ko'rsatgan holda o'z nuqtai nazarini mantiqiy tushuntirish va samarali himoya qilish mahorati" deb ta'riflaydilar. Tahlil shuni ko'rsatadiki, o'qituvchining malakasiga qarashlar chegaralar bo'ylab turlichadir. Ko'pgina mamlakatlarda asosan til mazmuni va muloqot ko'nikmalarini o'rgatish qobiliyatiga yo'naltirilgan ancha an'anaviy qarash qabul qilingan bo'lsa, Kanada kabi ba'zi boshqa mamlakatlarda bu qarash o'zgarib, o'qituvchining mahorati va o'qitish mazmuni sifatida ba'zi yumshoq ko'nikmalarni o'z ichiga oladi. Bu mehnat bozoridagi keyingi o'zgarishlarni bashorat qilish usuli sifatida o'qituvchilar ta'limiga yumshoq ko'nikmalarni kiritishni anglatishi mumkin. Albatta, mamlakatlarning o'qitish kontekstida ham o'ziga xos xususiyatlari bor, bu ham o'qituvchilarning vakolatlariga ta'sir qiladi. Bu shuningdek, fanlararo yondashuvni anglatishi mumkin. o'qituvchilar uchun ta'lim zarur bo'lishi mumkin, bundan keyin ta'riflangan. Til ta'limiga bunday yondashuv bir tomondan deklarativ bilim va tadqiqot vositalariga ega bo'lgan o'qituvchilarni, ikkinchi tomondan esa ko'p madaniyatli jamiyatdagi turli xil sinflarga dosh bera oladigan o'qituvchilarni tayyorlashga qaratilgan.

### **Hindistondagi chet tillari o'qituvchilarining professional kompetensiyalari**

Chet tillarini o'rgatish va adabiyotni o'zlashtirishda hal qilinishi kerak bo'lgan asosiy shartlar. Ushbu maqolada ko'tarilgan muammoning keskinligi chet tilini o'qitish va savodxonlikni tushunish muammolari, nazariya va amaliyot, savodxonlikning yangi idroklari, o'qish mahoratini o'rgatish, miya va boshqa tillarni o'rgatishdagi qiyinchiliklar kabi chet tili o'qituvchilari ta'limining murakkabligini oshiruvchi talabning ortib borishi bilan til o'rganish izohlanadi.

Biroq, malaka bo'lajak ingliz tili o'qituvchilari bo'luvchi talabalarni rag'batlantirish uchun ko'proq ish olib borishga to'g'ri keladi. Mandasari va Oktaviani [2018] o'z tadqiqotlarida menejment dasturi talabalari ingliz tilini o'rganishda his-tuyg'ulari ishtirok etganda ingliz tilini yaxshiroq o'rganganligini ta'kidlaydi. Ushbu kontseptsiyani saqlash o'qituvchining fon roli sifatida o'qituvchilarning qiziqishini yuqori ushlab turish va ularni o'rganishga jalb qilish uchun turli xil siljishlarni amalga oshiradi. Shu munosabat bilan, o'qituvchi rollarni almashishi va o'zini birinchi navbatda o'qituvchilariga hamdard bo'lish va yangilanishni davom ettirish uchun o'zini engilroq deb bilishi kerak, so'ngra sahnada nafaqat donishmand, balki "yonboshlovchi" sifatida ham ishlaydi. Nihoyat, zaif tomonlarni izlash o'rniga, malakani oshirish yo'nalishlarini ko'proq baholaydigan baholovchi. Ingliz tili global tilning nufuzi va maqomiga ega. Bu aloqa, texnologiya, savdo, ilm-fan, reklama, xalqaro konferentsiyalar, bankning global bo'limi, o'yin-kulgi, intervyu va boshqa

ko'plab sohalarning tili. Ko'p yondashuv va usullar joriy qilinayotgan bo'lsa-da, o'quv jarayoni unchalik samarali emas va unchalik qiziq emasdek tuyuladi. Ingliz tilini ikkinchi til sifatida o'rgatish va o'rganish ham o'qituvchilar, ham o'quvchilar uchun qiyinchilik tug'diradi. O'qituvchi o'quvchilarni maqsadli tilda mukammal o'rganishi uchun sinf muammolarini chuqurroq tushunishi kerak. Til o'rganish jarayonida o'qituvchi turli rollarni bajaradi. Agar yuqoridagi barcha rollarni o'qituvchi to'g'ri bajarsa, u o'quvchilarning kelajagini shakllantirishda ideal namuna va yo'l boshchiga aylanadi. "Aspiring Minds" ta'lim, bandlik va ta'limni baholash kompaniyasi muhandislik fakulteti talabalarining 25 foizi ingliz tilini tushunish qobiliyatiga ega emasligini aniqlaydi. 55 000 muhandislik bitiruvchilari tekshirildi va muhandislarning 25% dan ortig'i muhandislik maktabining o'quv dasturini tushunish uchun ingliz tilini tushunish ko'nikmalariga ega emasligi aniqlandi. Hozirgi vaqtda ingliz tili butun dunyo bo'ylab muloqot tilidir.

Shu bilan birga, dunyodagi ba'zi o'zgarishlar o'qituvchining o'quvchilarda muloqot qilish qobiliyatini rivojlantirish bilan birga rivojlantirishi kerak bo'lgan kompetensiyalarga ta'sir qilishi mumkin.

### ***Hindistonda ingliz tili o'qituvchisi kompetensiyalariga umumiy qarash***

Ingliz tili o'qituvchisining asosiy kompetensiyalari aksariyat mamlakatlarda bir xil bo'lib tuyulsa-da, keling, Hindistonda keng tarqalgan qarashlar, umidlar va muammolarni, shuningdek, ingliz tili o'qituvchilari orasida keng tarqalgan ba'zi asosiy tushunchalarni ko'rib chiqaylik.

### ***Tuzatish choralari***

Asosan, hind sinf xonalarining ko'pchiligida yetarlicha sharoit yo'q, o'qituvchilar yetarli emas, sinfning o'ta kuchliligi til o'rgatuvchi sinfga o'xshamaydi. O'quvchilarning aksariyati birinchi avlod o'quvchilari bo'lib, ular uchun mutlaqo ingliz tili yangi.. Bu, o'z navbatida, vositalar va usullarni amalga oshirishning amaliy emasligini ko'rsatadi. Til o'qituvchilari bilan imkoniyatlar mavjud. Til o'qituvchilari sinfda ma'ruza qilishni afzal ko'rishdan qochishlari kerak, til o'zaro aloqani talab qiladi. Muloqot ikkinchi tilda maqsadli samaraga erishish uchun samarali L2 o'rganishning asosidir. O'quvchilar va o'qituvchilar jarayonda qiziqarli tarzda birlashadilar.

### ***L2 darajasiga ta'sir qiluvchi strategiyalar***

L2 darajasiga ta'sir etuvchi strategiyalar - bu ta'sirning yo'qligi Oilaviy muhit Madaniy va ijtimoiy-iqtisodiy muammolar Kamroq L2 aloqasi Ona tilining ta'siri va aralashuvi Tengdoshlar guruhining ta'siri maqola Grammatika va usullarga e'tibor qaratiladi. Talaffuz va ikkilanishdan qo'rqish.

### ***Hindistonda ikkinchi tilni o'rganishning murakkab tizimi***

Hozirgi vaqtda ingliz tilini o'rganish keng tarqaldi va til uchun imkoniyatlar ham juda ko'p. Bugungi kunda ingliz tilini bilish nomzodlarning ishga joylashishi uchun bevosita umiddir. Umuman olganda, o'quvchi o'z ona tilini tinglash, gapirish, o'qish va yozish orqali tabiiy ravishda oddiydan murakkabga o'rganadi, ammo ingliz tili kabi har qanday ikkinchi til yozishdan boshlanadi va keyin o'qish, gapirish va tinglashga o'tadi. Shunday qilib, bu murakkab jarayon o'quvchini maqsadli tildan foydalanishga samarali rag'batlantiradi. O'quvchilarni boshlang'ich bosqichida xatoga yo'l qo'ygan taqdirda ham rag'batlantiring. Til o'rganishni o'quv rejasini rejalashtirish va baholash bilan cheklab bo'lmaydi. Qiyinchiliklarni bartaraf etish uchun o'quvchini ingliz tilidan foydalanishga undash mumkin. Faqat o'qituvchilar L2 sinfida ona tilini qo'llashdan qochsa, o'quvchi undan qochadi. Agar o'qituvchi lingafon sinfida L1 va L2 dan teng foydalansa, o'quv dasturi o'z-o'zidan toza bo'ladi. O'qituvchi o'quvchilarga 2-darsni notiqlik bilan ta'minlaydigan va tinglash, gapirish, o'qish va yozish uchun bir xil ahamiyatga ega bo'lgan va samarali tarzda ta'kidlaydigan vaziyatlarni taqdim etishi kerak. O'quvchilarning ikkinchi tilga bo'lgan nafratini yo'q qilish kerak. O'quvchilarning muammolarini aniqlash va samarali strategiyalarni taklif qilish asosiy masala. Talabalarning o'zaro ta'sirdagi ishtiroki nutqning paydo bo'lishining asosiy omilidir. Ularning xatolari o'qituvchi tomonidan o'zgartirishga rozi bo'lishi kerak.

### ***Maqsadli tildan foydalanish***

O'qituvchi o'z o'rgatishda maqsadli tildan foydalanishi kerak, Curtain [2000] o'qituvchilarning maqsadli tildan foydalanishi va 2-sinf bo'yicha o'quvchilarning malakasi o'rtasidagi bog'liqlikni ko'rib chiqadi. O'qituvchining natijalari o'quvchilarning I2 malaka darajasini oshiradi. O'qituvchining roli til o'rganuvchining roli bilan tengdir. O'qituvchi muvaffaqiyatli muloqot qilish imkoniyatlarini targ'ib qilishi kerak.

### ***Qiziqishni oshirish***

O'quvchilarga tabiiy og'zaki tilni tushunish uchun tinglash imkoniyati kerak. Talabalarning e'tiborini jalb qilish uchun o'qituvchi samarali tinglash uchun qaysi mavzuni so'rashi kerak, o'qituvchi taqdim etishi mumkin bo'lgan lug'atni qiyinlashtirishi, mavzuni qiziqarli vaziyatlar yoki hikoyalar bilan bog'lashi, keyingi savolga diqqat bilan javob berishi kerak. ma'ruzadan so'ng, tinglaganingizdan so'ng, o'quvchilardan umumiy fikrlarni so'rang.

### ***Imkoniyatlar va o'zaro ta'sir***

O'qituvchi o'quvchilarga til o'rganish jarayonida faol ishtirok etish imkonini berishi kerak. Bu ularga o'qishda muvaffaqiyatga erishish va o'quv jarayoniga qiziqarli ishtirok etishda yordam beradi. Bu ularning o'rganishda muvaffaqiyatga erishishga va o'quv jarayoniga qiziqarli ishtirok etishga yordam beradi. O'quvchilarga

mustaqil o‘rganishga yordam beradigan va mazmunli muloqot qilish imkoniyatini beruvchi o‘z o‘rganish maqsadlarini belgilashga yordam berish kerak. Talabalar g‘oyalar va his-tuyg‘ularini va 12 va ularni qiziqtirgan mavzularni bildiradigan vazifalarni yaratish zarurati

***Boshlang‘ich bosqichdan motivatsiya***

O‘rganish bosqichining boshida o‘qituvchi ularni yangi lug‘at bilan tanishtirish uchun etishmayotgan harflarni topish kabi so‘z o‘yinlarini o‘ynashi mumkin. Javoblardan chiqqan o‘quvchilarga javoblarni qisqa paragrafda ishlab chiqish imkoniyati beriladi. Buning yordamida o‘qituvchi o‘quvchilarga tilni ko‘p harakat qilmasdan bajarishlari uchun platformani targ‘ib qiladi. O‘qituvchi o‘quvchilarga guruhda muhokama qilish uchun qiziqarli mavzularni ham berishi mumkin. Va keyin ular ushbu mavzu bo‘yicha o‘z g‘oyalarini do‘stlariga taqdim etishga undaydilar. Bunday topshiriq orqali o‘quvchi o‘zini ko‘rsatishda unchalik qiyinchilik tug‘dirmasligi mumkin. Ular o‘z ta’lim jarayonida o‘zlarini oshirish imkoniyatini topadilar.

Mavzular	Yo‘qolgan harflarni toping	Paragrafni batafsil bayon qiling
ELT	mta—ui-ti-n	ELT tilidagi usullar...
Mahalliy	-tnis-oo-	Idishlar yordam beradi
Sinf xonasi	-ust-tdn-	Talaba - bu ...
Texnologiya	m- -ia, m- - em	Ommaviy axborot vositalari juda katta maydon

***Birlashtiruvchi bog‘lanish Tili sifatida.*** Til- inson g‘oyalarini ifodalash uchun ishlatiladigan koddir. Bu tovushlardan, so‘zlardan va grammatikadan iborat bo‘lgan aloqa tizimidir, bu ma’lum bir mamlakatda talabalar tomonidan qo‘llaniladigan aloqa tizimlari. Sinf xonasi o‘quvchilarning turli ijtimoiy guruhlaridan iborat . Birinchi til (ona tili, ota tili/ona tili, arterial til yoki LI) - bu inson tug‘ilganidan beri tanish bo‘lgan til.

***Tilni o‘rganish namunaga asoslangan.*** Inson tilini ishlab chiqarish va tushunish lingvistik qoidalardan ko‘ra mavhum bo‘lgan qonuniyatlardan aniq "namunalar" to‘plamiga asoslanadi . Amaliyot til misollarini ma’ruzachilar uchun qulay qiladi. Tilni bilish - bu tildagi qurilishni bilish. Ikkinchi til ona tili bo‘lmagan tildir, ayniqsa u ko‘p tilli jamiyatda tan olingan va qabul qilingan hududda yashovchi tildir. Til yoki lingvistik qoidani o‘zlashtirishga erishish jarayoni san’ati o‘zlashtirish deyiladi.

O'zlashtirish atamasi dastlab o'quv jarayonining ongsizligini ta'kidlash uchun ishlatilgan.

**O'rganishni yaxshilash:** PPT-ga asoslangan taqdimotlar va seminarlar orqali o'quvchilar ikkinchi tildan foydalanishdan zavqlanishlari mumkin edi. Fikr almashish uchun ijtimoiy tarmoqlardan foydalanish L2 ni olishning yana bir jozibali yo'lidir. Talabalar ijtimoiy tarmoqlardan qarashlari, g'oyalari va tadqiqotlari bilan bo'lishishlari uchun foydalanishlari mumkin. Bu o'quvchilarga o'zlarining ko'p qirrali iste'dodlarini ochiq dunyoda ochib berishga yordam beradi, bu erda ular do'stlari doirasidan, shu jumladan O'qituvchilardan darhol javob oladilar. Til o'rganish bo'yicha o'quvchilar o'z qo'llarida osongina mavjud bo'lgan til o'rganish uchun foydali ilovalarni baham ko'rishlari mumkin, masalan, lug'atlar, idiomalar va iboralar, kundalik iqtiboslar, tezaurus, nutq ingliz tili va mashhur nutq. Global asrda omon qolish yoki yashash global tildagi muloqotga asoslanadi.

#### **Rivojlanish bo'yicha maslahatlar**

1. Yaxshi tinglovchi — yaxshi ma'ruzachi
2. Xabarning samarali yetkazilishiga ishonch hosil qilib, aniq gapirishga harakat qiling.
3. Ishonchli bo'ling
4. Yaxshi talaffuz va intonatsiyani bog'lang
5. Gapirayotganda vaqtni kuzatib boring
6. Yaxshilash uchun tez-tez fikr-mulohazalarni oling.

Ushbu tamoyillardan to'liq foydalanish uchun o'qituvchilar til ko'nikmalari va o'qitish usullarini bilishdan tashqari, madaniyatlararo muloqot qobiliyatlari, hissiy aql, tanqidiy fikrlash va jamoada ishlash ko'nikmalariga ega bo'lishi kerak. Ushbu kompetensiyalar tilni bilish va til o'rgatishning asosiy tamoyillaridan foydalanishning asosiy kompetensiyalariga qo'shimcha sifatida ta'riflanishi mumkin [Demidova, 2018] Ko'rib turganimizdek, Hindistondagi ko'p madaniyatli va ko'p tilli vaziyat tufayli ingliz tili o'qituvchisi kompetensiyalari to'plami o'ziga xos xususiyatlarga ega. uning asosiy vakolatlari ushbu maqolada ko'rib chiqilgan boshqa mamlakatlardagi vakolatlarga juda o'xshaydi. Keyingi tadqiqotlar butun dunyo bo'ylab o'qitish kompetensiyalariga bo'lgan ehtiyoj qanday o'zgarishini va bu mo'zgarishlar o'qituvchilar tayyorlash va kasbiy rivojlanishda qanday aks etishi kerakligini aniqlashda yordam berishi mumkin. Ushbu o'zgarishlar yangi kompetensiyalarni shakllantirish uchun o'qituvchilar tayyorlashga fanlararo yondashuvni talab qiladi.

#### **Umumiy xulosa**

Dunyodagi, jumladan, ta'lim va ta'lim olamidagi o'zgarishlar o'qituvchilar o'quvchilarni hal qilishi va tayyorlashi kerak bo'lgan vaziyatlar va ko'rib chiqilgan

hujjatlarda ko‘rsatilgan vakolatlar o‘rtasidagi tafovutga olib keldi. O‘qituvchilarning kompetensiyalari o‘quvchilarni kelajakdagi kasbga tayyorlash uchun chet tillarini o‘rgatish orqali o‘quvchilarda yumshoq ko‘nikmalarni rivojlantirishni bilishni o‘z ichiga olishi kerak.

### **Manfaatlar to‘qnashuvi**

Mualliflar manfaatlar to‘qnashuvi yo‘qligini e‘lon qiladilar.

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## LINGUOCULTURAL FEATURES OF PAREMIA REPRESENTING INTERPERSONAL RELATIONSHIPS AND THEIR USAGE IN THE PROCESS OF THE LANGUAGE LEARNING

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Tillar kafedراسi ingliz tili o'qituvchisi

### ABSTRACT

*In this article describes the similarities and differences between paremias in the different languages, proverbs that express the culture and mentality of nations, and express interpersonal relationships. Furthermore the article explains the ways of increasing the speaking skill by using paremias in the speech.*

### ANNOTATSIYA

*Ushbu maqolada turli tillardagi paremiyalar, xalqlar madaniyati va mentalitetini ifodalovchi, shaxslararo munosabatlarni ifodalovchi maqollar o'rtasidagi o'xshashlik va farqlar bayon etilgan. Bundan tashqari maqolada nutqda paremiyalarni qo'llash orqali nutq mahoratini oshirish yo'llari tushuntiriladi.*

### Introduction

Today, intensive research is being conducted on proverbs, and the study of all aspects of proverbs is one of the main tasks of the field of paremiology. When studying the comparative aspects of paremias expressing interpersonal relations, we cannot help but touch on their linguistic and cultural aspects.

### Literature Review

Proverbs and sayings are the main elements of the language worldview. People can understand themselves only thanks to the language in which historical, social and moral experience has been accumulated. Proverbs and proverbs have a unique quality - they reflect in any way the characteristics of the entire nation, such as everyday life, preferences, attitude to various spheres of life, philosophical, religious, moral and aesthetic views. A proverb is a short well-known saying that expresses a widely held truth or belief. Many linguists A. Afanasiev, M. Dubrovin, A. Potebnya and others devoted their works to proverbs and proverbs. In the 20th century, another direction of their study - the linguo-cultural direction - appeared. They began to be studied as stereotypes that describe our lives. Proverbs and sayings become an integral part of our

mentality, which forms the basis of the vocabulary word image of each nation. However, there are still difficulties in distinguishing between these two concepts. In general, the article is well-known and reproducible. Paremiyas are said to express truth based on common sense or experience. In fact, a word can be defined as a written or spoken linguistic expression that is remembered because of its content or structure. Usually there is something more meaningful and understandable than what is said in a proverb.

Moreover, today we can find different definitions of proverbs and sayings. Thus, Longman's Dictionary of Modern English defines a proverb as: a short well-known statement containing advice about life in general.<sup>1</sup> M. Dubrovin emphasizes the conceptual side of the term. He writes that a proverb is a short sentence that people often say. According to him, this is a true statement that reflects the ancient history of a particular people, something that informs or tells the receivers about human life and problems in general. Paremiyas are proverbs found in many cultures and often very old. We need paremiyas in communication because they reflect who we are. Paremiyas are very widely used in interpersonal relationships.<sup>2</sup>

### Research methodology

Soviet and Russian social psychologist and sociologist G.M. Andreeva, interpersonal relations are an integral part of all social consciousness. In this regard, G. M. Andreeva says: "The nature of interpersonal relations, if they are not equated with social relations, but if they see in them a specific type of relations arising from each type of social relations and beyond them, then can be understood".<sup>3</sup> It can be explained as follows: If a person loses his job to a friend, you: "What you lose on the swings, you make up for on the roundabouts" "closed" you can say. If a child comes to a difficult task and cannot find a way, you can say: "**It's good fishing in troubled waters**", i.e. "**Loy ichidan dur ajrat**". All this points to the fact that paremiyas have a role in the precise expression of our relationships.

According to psychology, a person is a social being. During his life, he communicates directly with other people and thereby realizes his social essence. Such communication takes place in different groups. As long as a person lives in society, he is always in communication and interaction with different people, and these communication processes always take place in a group of people. That is why interpersonal relations are one of the most important problems.

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<sup>1</sup> Longman Dictionary of Contemporary English. <http://www.ldoceonline.com/dictionary/pdf>

<sup>2</sup> Дубровин М. Английские и русские пословицы. Москва, 1993. -С 16.

<sup>3</sup> Андреева Г.М. Социальная психология. — М., 1998. -С. 1-5.

## Analysis and result

Here, we will give examples of favorite family sayings and paremies that remind the mutual love of family members. For example:

English: If we translate the proverb **“To lead a cat and dog life”** into Uzbek, it means *mushuk va itdek urushadi*.

This is expressed in the Uzbek language by the proverb: **“Er-xotin urushi, doka ro‘mol qurishi”** It reflects the relationship between family or husband and wife and is often used to add warmth to the relationship.

The word **“Cat and Dog”** in English Paremia gives its meaning **“it va mushuk”** in Uzbek. But here these words come in a figurative sense with the meaning of **“husband and wife”**. Although this sentence is a common simile in the culture of that nation, it seems like a rather silly simile to the Uzbek nation. For this reason, this proverb cannot be used with a direct translation, and it is appropriate to use its alternative in a manner specific to the national culture.

It is known that every nation has its own customs and traditions, and every person in the society practices and believes in them. We saw the difference in the way of life of the two peoples, although not much in the family matter. We will show it as another example. For example:

English: **“Go down the ladder when thou marriest a wife;  
Go up when thou chooseth a friend.”**

If we look at the Uzbek equivalent:

**“Xotining bilan birlashganda zinadan pastga tushasan;**

**Do‘st tanlanganda yuqoriga ko‘tarilasan”**. It is the word **“ladder”** used in the English version that means high rank. The meaning is that the woman is recommending to choose a friend rather than your rank. This poem, which reflects friendship and family relations, is presented in Uzbek in a slightly different way. That is:

**“Xotin so‘zini qondirar,  
Er urug‘idan tondirar.”**

It can be seen that phrases such as **“er urug‘i”** or **“ayol urug‘i”** are words specific to the Uzbek nation. In fact, the word **“family”** in its full and broad sense includes father, mother and child in the scientific sense. Marriage is the basis of the relationship between husband and wife, and blood kinship is the basis of the relationship between parents and children. In the rules of Islam and state legal norms, a lot of attention is paid to the issues of marriage and consanguinity. That is why it is not for nothing that such bonds and relationships are considered very sacred for the Muslim people.

## Conclusion

In fact, it is one of the important stages of our work to examine the linguistic and cultural characteristics of English and Uzbek proverbs expressing interpersonal relations, which is one of the main parts of our research work, and to study their similarities and differences. For this reason, based on the theories of the scientists mentioned above, we will try to prove our points by deeply analyzing some paremias in Uzbek and English languages. With the help of examples, we will try to show to what extent the people's lifestyle is expressed in them and show the similarities and differences between the proverbs that exist in two languages and reflect the attitude of individuals.

## List of used literature

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<http://www.ldoceonline.com/dictionary/pdf>
2. Дубровин М. Английские и русские пословицы. Москва, 1993. -С 16.
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## ОПЕРАТИВНОЕ ИСКУССТВО И ВОЕННАЯ ТАКТИКА АМИРА ТЕМУРА

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***Аннотация:** в статье раскрываются оперативное искусство и военная тактика Амира Тимура, а также дается краткий анализ исследования составляющих применительно оперативному искусству и тактике.*

***Ключевые слова:** военное искусство, стратегия, тактика, сражение, бой, кавалерия, отвлекающая акция, крепость, дух уверенности, бесстрашие, кампания, засады, главный удар, тактические приёмы.*

***Annotation:** operative art open in article and military tactics Amir Timur, as well as is given short analysis of the study forming with reference to operative art and tactician.*

***Keywords:** martial art, strategy, tactics, battle, fighting, cavalry, distracting action, fortress, spirit to confidence, fearlessness, campaign, duck blinds, main blow, of tactician acceptance.*

### Оперативное искусство

Оперативное искусство является составной частью военного искусства и играет роль связующего звена между стратегией и тактикой. В ходе атаки и обороны проводились такие операции, как перегруппировка войск, разработка мер против нападения противника. Например, интересны сведения о походе Амира Тимура 1391 года на Дашти Кипчак в “Зафарнаме” Низамиддина Шами. В начале этой битвы все были удивлены неожиданной и скрытой тактикой Амира Тимура. “Амир Сахибкиран привел армию в порядок и <sup>1</sup>сделал семирукую дивизию неизбежной. “Это было сделано так, что это невозможно описать”, — написал он.<sup>2</sup>

Обычно в боях, которые вел Амир Тимур до этого времени (1391 г.), присутствовала только одна часть его армии, и ее возглавлял Амир Тимур, а при необходимости он посылал на помощь другие части армии и вызывал панику

<sup>1</sup> Рука (кол) - тюркский центр, середина.

<sup>2</sup> Низамиддин Шами. Зафарнома. – Ташкент, 1996. – 164 с.

противнику, потому что эта часть состояла из отборных, опытных воинов. В этом сражении Амир Темура впервые создал в своей армии *семь* дивизий и назначил начальниками шесть из них зрелых и опытных генералов. Когда бой был жарким, каждая рука поочередно атаковала противника с разных сторон противника таким образом, чтобы одна не уничтожила другую. Когда в бой было брошено первое подразделение, было очевидно, что противостоящая сторона будет в замешательстве. Потому что противник прекрасно знал, что Амир Темура лично командовал армией через своих разведчиков. Вот почему противник бросил несколько своих отрядов против хорошо организованного, опытного и хорошо вооруженного и защищенного отряда быстрой кавалерии, составленного из солдат, обученных во многих боях. Амир Тимура этой своей отвлекающей акцией через некоторое время перебросил свою вторую руку, похожую на вышеописанную, на другую ослабленную сторону противостоящей армии. В результате началась неразбериха, что и в этой части нас атаковало личное командование Амира Темура. Таким образом он бросал другие части руки в другие точки армии противника. Таким способом Амир Темура разбил неисчислимое войско ошеломленного хана Тохтамыша и заставил его бежать в пустыню.<sup>1</sup>

Если говорить об искусстве оперативности, то среди генералов, работавших в этой области, трудно найти равного Амиру Темуру. В письменных источниках эта способность отчетливо видна в сражениях Амира Темура по завоеванию городов или крепостей. В этом искусстве он открывает уникальные и незапланированные методы во время своих сражений и быстро их реализует. Особенно можно увидеть быструю тактику Амира Темура против слонов, терроризировавших его армию во время его сражений с Махмудом Султаном, царем индийской провинции, и Маллух-ханом. Например, известно, что он останавливал атаку своего противника, привязывая сухие колья к царю быков, чтобы напугать их против слонов противника, или устанавливая колья на верблюдов и поджигая их.<sup>2</sup> Точно так же известно, что ноги слонов были помещены под проволочные шипы.<sup>3</sup> На наш взгляд, по этой тактике создается впечатление, что Амир Темура был близко знаком с древними методами ведения боя. Потому что из истории известно, что во время сражения под ноги лошадям были брошены многоконечные предметы из керамики, найденные при раскопках, проводимых археологами.

<sup>1</sup> Поскольку сведения, данные Низамиддином Шами о деталях этого боя, несколько более конфиденциальны (Низамиддин Шами. Зафарнома. - Ташкент, 1996. - С. 163-164), мы высказали свое мнение о семи движениях рук.

<sup>2</sup> Гиясаддин Али. Походы Тимура в Индию. - М., 1958. - С. 117.

<sup>3</sup> Шарафуддин Али Язди. Зафарнома. - Ташкент, 1997. - 207 с.

## Военная тактика

Тактика – греческое слово, означающее искусство управления армией. Тактика считается одной из основных частей военного искусства, осваивается с древнейших времен и включает в себя теорию, практику и искусство ведения боя. В результате изучения исторических источников мы видим, что Амир Темур не уступал ему в вопросе тактики. Амир Темур использовал новые уникальные методы в разных боях и в разных условиях. Например, чтобы присоединить другие страны, <sup>1</sup>как уже говорилось выше (в рассказах Амира Темура), он сначала собрал необходимые сведения об этих странах, такие как их география, история, могущество, обычаи. Для этой цели он мобилизовал лиц, занимавшихся секретными делами, которых вводил в те страны, которые имели необходимые рекомендации. Затем на основе полученной от них информации досконально изучил их, а затем разослал письма лидерам этих стран с изложением своих целей. Если они не соглашались на его требования, он угрожал им разными способами. Даже тогда, если они сопротивлялись, они выводили армию, использовали разные методы борьбы <sup>2</sup>и применяли уловки<sup>3</sup>.

Из истории известно, что молодой Амир Темур, еще не вступивший на престол, сделал много необходимых выводов из уроков жизни (например, истории о навозной жиже). Даже когда он и его товарищи случайно, сами того не ведая, попали в гущу врага, он сохранял спокойствие и легко выходил из ситуации, потому что сумел вселить в своих братьев дух уверенности и бесстрашия. Своей уверенностью и смелостью Чигатай-хан быстро (1369-1370) преследовал Ильясходжу в тыл Сырдарьи и послал от его имени приказы главам крепостей. В то же время Амир Темур приказал своим всадникам, которые послали за гонцами письма, двигаться с большой пылью, чтобы люди в крепости поверили, что идет очень большое войско. <sup>4</sup>Такая работа выполнялась в основном ночью. В результате главы замка, напуганные такими выходками,

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<sup>1</sup> В этой области Амир Темур всегда следовал поговорке в своей конституции, что «Девять процентов государственных дел осуществляются советами, мероприятиями и консультациями, а оставшаяся часть осуществляется мечом».

<sup>2</sup> Новый метод в противостоянии, например, построение семи ручных частей...

<sup>3</sup> Например, очень интересно, что в решающей битве с Тохтамышем Амир Темур обратил на себя знаменосца своего противника, а то, что старший Абу Саид дал ему духовную пищу, спасло Амира Темура от поражения.

<sup>4</sup> Нет сомнения, что Амир Темур использовал множество подобных методов в своих последующих сражениях. В своих ночных набегах он часто использовал небольшие силы, а для того, чтобы его армия казалась численно превосходящей, он зажигал бесчисленные костры на окружающих просторах. По сведениям из других источников, Амир Темур «пусть будет четыре войска, и пусть каждый всадник привяжет длинного соболя из двух пряжек к двум ногам своего коня так, чтобы поднялся шум и охрана тех сторон побежала». далеко, наблюдая за большой армией». См.: Уложения Амира Темура. - Ташкент: Навруз, 1992. - 41 с.

бежали со своим войском. Благодаря таким умело использованным приемам почти все замки Моваруннахра были очищены от нечисти.<sup>1</sup>

Амир Темур, занявший трон Моваруннахра в 1370 году, всегда держал в секрете от окружающих тактические методы, которые он использовал в своих больших и малых сражениях. Потому что этого требовала ситуация. Амир Темур часто менял свои планы перед битвой, к всеобщему удивлению. Во многих случаях использованная тактика основывалась на планах после начала боя.<sup>2</sup> Эти методы подробно описаны в других разделах. Например, прежде чем отправиться куда-либо, Амир Темур согласовывал со своими советниками свой военный поход и его направления, то есть пути, по которым он пойдет, выступая против своего противника, где устроить для него засады и где нанести главный удар. Но когда он перешел к практической работе, он осуществил свой заранее задуманный план. Соответственно, когда он достиг определенного места, первый поворот вдруг повернул направление движения в другую сторону. Потому что Амир Темур, научившийся внимательно на все смотреть, обладал способностью чувствовать, что планы, которые он строил ранее, были переданы его лидерам разведчиками его соперника. В результате Амир узнал о нападении Темура и его планах, а его противник разрушил его планы против него.

Неизбежно, что многие тактические приемы, использованные Амиром Темуром, удивят даже тех, кто знаком с любым военным делом. В целом<sup>3</sup> видно, что методы, применявшиеся Амиром Темуром в военной тактике (укладка засады, рассылка противнику ложных известий и отвлечение его, окружение высокой стеной территории, где расположены воинские части), всегда давали положительные результаты. Подробности Гиясиддина Али в его брошюре «Походы Темура в Индию» наглядно продемонстрировали несравненность Амира Темура в военном искусстве. Известно, что Амир Темур во время своих походов на Индию с небольшой армией завоевал три крепости, как доказательство того, что один умелец может сделать то, что не под силу тысяче всадников.

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<sup>1</sup> Иванин М.И. Два великих полководца: Чингисхан и Амир Темур. - Ташкент: Издательство «Фан» ФА УзР, 1994. - С. 120-121.

<sup>2</sup> Амир Темур оставил в череде сражений в неведении своего главного и сильнейшего противника, хана Золотой Орды Тохтамыша. Например, в истории известно, что он договорился со своим знаменосцем в бою, призвал их в разгар боя спустить знамя на землю и разгромил армию Тохтамыша.

<sup>3</sup> Амир Темур не только знал тактические приемы своего времени, но и использовал приемы древних полководцев. Например, известно, что согдийский полководец Спитамен часто устраивал засады македонцам, отступая в пустыню, отвлекая их. См.: История Узбекистана в источниках. - Ташкент: изд. «Наука» УзССР, 1984. - с.78.



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## АРАБ ЛЕКСИКОГРАФИЯСИДА МАНЗУМА МУСАЛЛАСЛАРНИ ТАДҚИҚ ЭТИШНИНГ ЎЗИГА ХОСЛИКЛАРИ

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### АННОТАЦИЯ

Ушбу мақолада араб лексикологиясида алоҳида ўрин тутувчи, бироқ кам даражада ўрганилган шаклдош-талаффуздош сўзлардан тузилган манзума лугатлар ҳақида сўз юритилади. Бундай лугатлар назмда арузнинг ражас баҳрида ёзилган. Арузнинг ушбу баҳри илмий доира вакиллари томонидан энг кенг фойдаланилган баҳр ҳисобланади. Мақолада манзума мусаллас лугатларнинг хусусиятлари, тузилиш принциплари ва уларни тадқиқ этишидаги ўзига хосликлар ҳақида қарашлар илгари сурилган.

**Калит сўзлар:** манзума, мусаллас, лексикография, араб тили, Қутруб, Ибн Молик.

### ABSTRACT

In this article, we will talk about syntactic dictionaries, which have a special place in Arabic lexicology, but are little studied. Such dictionaries are written in the rajaz bahr of aruz in nazm. This sea of Aruz is the most widely used sea by representatives of the scientific community. In the article, views on the features, principles of structure and peculiarities in their research are put forward.

**Keywords:** manzuma, musallas, lexicography, arabic language, Qutrub, Ibn Malik.

### КИРИШ

Араб тилшунослиги тарихида шаклдош-талаффуздош сўзларни ўрганишга бағишланган ва бу борада ўзига хос анъана тусини олган кўплаб мусаллас туридаги луғатлар тузилган. Бундай луғатларнинг айримлари манзума шаклида, яна айримлари эса мансура шаклида ёзилган. Жумладан, мазкур диссертацияда тадқиқ этилган «Muthallath<sup>u</sup> Qutrub<sup>a</sup>» асари ва Ибн Моликнинг «Al-'i'lām<sup>u</sup> bi-muthallath<sup>i</sup> al-kalām<sup>i</sup>» асари назмда ёзилган бўлса, Ибн Саййид Баталявсийнинг «Al-muthllath<sup>u</sup>»и ва Ибн Моликнинг «Al-'Ikmāl<sup>u</sup> al-'I'lām<sup>i</sup> bi-tathlīth<sup>i</sup> al-kalām<sup>i</sup>» номли рисоласи насрда битилган.

Манзума луғатларнинг ҳар иккиси ҳам арузнинг ражаз баҳрида ёзилган бўлиб, турли тазкира ва таржимаи ҳол китобларида уларни «уржуза» деб номлаш ҳолатлари учрашининг сабаби шундадир. Аслида илк ўрта асрларда Ислом оламида илмий матнларнинг аксариятини айнан ражаз баҳрида назмга солиш анъанаси ҳам шаклланган эди. Хўш, нега айнан ражаз баҳри илмий матнлар вазнига айланди?

## АДАБИЁТЛАР ТАҲЛИЛИ ВА МЕТОДОЛОГИЯ

Арузнинг 16 баҳри орасида шоирлар томонидан энг кўп мурожаат қилинадиган ва шу боис «шоирларнинг хачири» дея таърифланадиган баҳр бу ражаздир<sup>1</sup>. «Ражаз» сўзи луғавий жиҳатдан туяларда учрайдиган ҳолсизликни ифода этади. Бу ҳолатда туя ўрнидан тураётганда унинг тиззалари ҳолсизликдан қалтирайди. Бадавий араблар шу дардни «ражаз» деб аташган<sup>2</sup>. Туянинг чарчоқ ва ҳолсизлик туфайли сарак-сарак қадам ташлаши ражаз баҳрининг вазнини ҳам эсга солади: ҳаракат-суқун, ҳаракат-суқун, ҳаракат-ҳаракат-суқун...

Арузшунослар яна ражаз баҳрининг бошқа баҳрлардан кўра насрга энг яқин эканини ҳам таъкидлашади<sup>3</sup>. Ражазнинг асосий рукни: mustaf'ilun бўлиб, бу рукннинг олти марта такрорланишидан ражаз баҳри ҳосил бўлади.

Шунингдек, ражазда нозим учун бир қатор эркинликлар ҳам мавжуд бўлиб, жумладан ҳар бир байтни бошқа байтларга боғлиқ бўлмаган мустақил қофия билан тузиш мумкин. Шундан келиб чиқиб, уржузада ёзилган асарнинг ҳар бир байтидаги ҳар бир мисра алоҳида байт деб ҳисобланиши ва мисранинг ўзида ички қофияланиш бўлиши табиий ҳолдир<sup>4</sup>.

Ражаз баҳрининг илмий матнлар «қуроли»га айланишининг яна бир сабаби, узундан-узун маълумотлар ва далилларни ёд олиш, эсда сақлаш ва такрорлашга жуда қулайлигидир. Чунки инсон фитратида назмга мойиллик бўлиб, қофия ёки сажъ билан ёзилган матнни осон ва тез хотирасида сақлаб қолади. Шу жиҳатлар ҳисобга олинса, мусаллас туридаги луғатларнинг ҳам нега айнан ражазда ёзилгани аён бўлади.

## НАТИЖАЛАР

Тадқиқотимиз объектларидан бири бўлган «Muthallath<sup>u</sup> Qutrub<sup>a</sup>» манзумасининг биринчи байтини тақтиъларга ажратиб чиқамиз:

يَا مُوَلَّعِنَ      بَلْعَضَبِي      وَلَهْجَرَوْت      تَجَنَّبِي

<sup>1</sup> Ahmad<sup>u</sup> Al-Hāshimiy<sup>u</sup>. Mīzān<sup>u</sup> adh-dhahab<sup>i</sup> fī ṣinā'at<sup>i</sup> shi'r<sup>i</sup> al-'arab<sup>i</sup>. –Al-Qāhirat<sup>u</sup>: Hindāwiy, 2016. –Ў.63.

<sup>2</sup> Mu'jamu al-wasīf.

<sup>3</sup> Ahmad<sup>u</sup> Al-Hāshimiy<sup>u</sup>. Mīzān<sup>u</sup> adh-dhahab<sup>i</sup> fī ṣinā'at<sup>i</sup> shi'r<sup>i</sup> al-'arab<sup>i</sup>. –Al-Qāhirat<sup>u</sup>: Hindāwiy, 2016. –Ў.63.

<sup>4</sup> Қаранг: ўша манба. –Ў.64.

ه//ه// مُسْتَفْعِلُنْ وَلَلْعَبِي	ه//ه//ه// مُسْتَفْعِلُنْ فِي جِدْهِي	ه//ه// مُسْتَفْعِلُنْ بِرَّحِ بِي	ه//ه//ه// مُسْتَفْعِلُنْ حُبُّكَ قَدْ
ه//ه// مُسْتَفْعِلُنْ	ه//ه//ه// مُسْتَفْعِلُنْ	ه//ه// مُسْتَفْعِلُنْ	ه//ه// مُسْتَفْعِلُنْ

Жадвалдан кўриниб турибдики, биринчи мисранинг «аруз» қисмида ўзгариш бор: *musta‘ilun*, яъни мажзуъ бўлиб келган. Демак, шунга асосланиб, бу манзуманинг ражази мусаддаси мажзуъда ёзилганини хулоса қила оламиз.

Қиёслаш учун Ибн Моликнинг «*Al-’i’lām<sup>u</sup> bi-muthallath<sup>i</sup> al-kalām<sup>i</sup>*» номли уржузасининг дастлабки байтини тақтиъларга ажратиб кўрамыз:

وَهَاهِي	دَلْمَالِكِ	إِنْبَاعَ حَمَّ
ه//ه//ه//	ه//ه//ه//	ه//ه//ه//
مُسْتَفْعِلُنْ	مُسْتَفْعِلُنْ	مُسْتَفْعِلُنْ
أَوْ أَبِي	عَلَّرَ رَضْلُ	صَلَّاتُهُو
ه//ه//ه//	ه//ه//	ه//ه//
مُسْتَفْعِلُنْ	مُسْتَفْعِلُنْ	مُسْتَفْعِلُنْ

Жадвалдан маълум бўлдики, бу манзума ражази мусаддаси мактуъ баҳрида ёзилган.

Таъкидлаш лозимки, бу мулоҳазалар уржуза асарлар учун якуний хулоса бўла олмайди. Чунки илмий адабиётларда уржузаларга нисбатан «муздаваж» истилоҳи ҳам қўлланадики, бу атама нозимнинг баъзан вазн, баъзан қофия борасида хилма-хил услубларни қўллаши мумкинлигини назарда тутати.

## МУҲОКАМА

Юқоридаги мулоҳазаларимиздан сўнг манзума мусалласларда вазн умумий хусусият экани равшанлашди. Бироқ сўзларни изоҳлаш ва мусалласларни назмга солишда ҳар бир нозимнинг ўз услуби бўлиши мумкин. Бу услубларни «شرب» ўзаги асосидаги мусалласнинг ҳар икки манзумада қандай изоҳланганини таҳлил қилиб кўрамыз. «*Muthallath<sup>u</sup> Quṭrub<sup>a</sup>*»нинг ўнинчи байти шу мусалласга бағишланган ва унда шундай дейилади:

ذَلَقْتُ نَحْوَ الشَّرْبِ وَ لَمْ أَذْ عَنْ شِرْبِي  
فَأَنْقَلَبُوا بِالشَّرْبِ وَ لَمْ يَخَافُوا عَضْيِي<sup>1</sup>

Маъноси: «(Ичимлик) ичувчилар гуруҳи томон ошиқдим – текин насибамдан тўсишмади, ичиш жойига кетишди – ғазабимдан кўрқишмади».

<sup>1</sup> Quṭrub<sup>u</sup>. Al-muthallath<sup>u</sup>. –Bayrut, 1990. –S.8.

Мазкур байтдаги «شَرْب», «شِرْب» ва «شُرْب» сўзлари «ичувчилар гурухи», «текин насиба» ва «ичиш жойи» маъноларини билдирмоқда.

Ибн Молик эса ўз «Al-'i'lām<sup>u</sup>»да бу мусалласни бундай назмга солади:

و الشَّرَابُونَ قِيلَ فِيهِمْ شَرْبٌ      وَ كُلُّ حَظٍّ مِنْ شَرَابٍ شِرْبٌ  
وَ شُرْبٌ وَ إِن تَشَأْ فَشُرْبٌ      جَمْعُ شُرُوبٍ مُكْتَبَرِ الشَّرَابِ<sup>1</sup>

Маъноси: «Ичувчилар (*tўғри кўплик*) дегани яна sharb (*синиқ кўплик*) ҳамдир, сувдан текин насиба shirbдир. Яна shurub, хоҳласанг, shurb – бу кўп ичувчи маъносидаги sharūbнинг кўплиги».

Ибн Моликнинг байтларини тўлиқ таржима қилиш имконсиз, чунки унинг манзумасида сўзларни ўз муродиф (синоним)лари билан изоҳлаш етакчилик қилади. Ибн Молик манзумаси «Al-'i'lām<sup>u</sup> bi-muthallath<sup>i</sup> al-kalām<sup>i</sup>» 2704 байтдан иборат, ҳажман жуда катта. Муаллиф унда 159 та сўз варианты, 1205 та омоним ва пароним сўзларни изоҳлаган. Ҳаракатлари ўзгариши билан маъноси ҳам ўзгарувчи (омоним ва пароним) сўзлар (1205та) миқдори бўйича Ибн Молик ўзидан аввал яшаб ўтган Ибн Саййид Баталявсийнинг «Al-muthallath<sup>u</sup>» луғатидаги миқдорни (695та) тўлдирди.

Манзуманинг муқаддима қисми қарийб 36 байтдан иборат. Унда китобнинг Носир Ҳуфайд Салоҳуддинга бағишлангани айтилган ва бу подшоҳ мадҳ этилган.

Сўнг муаллиф китобни тузишда тутган йўли, қандай тақсимотдан фойдалангани хусусида тўхталади. Унга кўра, дастлаб «المثلث المنفق المعني» – ҳаракатлари ўзгарса-да маъноси ўзгармайдиган (вариантдош) сўзлар келтирилган. Бу бобда аввал исмлар, кейин феъллар изоҳланган. Исмлар ўзак ҳарфларининг ҳаракати ўзгаришига биноан ҳам тақсимланган.

Бу бобнинг феълларга бағишланган фаслида эса фақат ўтган замон феълдан иборат мусалласлар мавжуд.

Манзуманинг «المثلث المختلف المعني» – ҳаракатлари ўзгариши билан маъноси ҳам ўзгарувчи (омоним ва пароним) сўзларга бағишланган боби нисбатан катта бўлиб, 28 фаслдан таркиб топган. Фасллар сўзнинг биринчи ўзак ҳарфи эътибори билан алифбо тартибида жойлаштирилган. Аммо фаслларнинг ички тартибида сўзларнинг иккинчи ва учинчи ўзак ҳарфлари эътиборга олинган.

Феъллар билан бирга уларнинг масдарлари ҳам келтирилган.

Аввал фатҳали, сўнг касрали ва охирида заммали сўзлар мусалласдан ўрин олган.

<sup>1</sup> 'Ibn Mālik<sup>in</sup>. Al-'i'lām<sup>u</sup> bi-muthallath<sup>i</sup> al-kalām<sup>i</sup>. –Bayrut, 1994. –S.301.

## ХУЛОСА

Ибн Молик ушбу манзумасида ҳам мусалласларнинг манбалари ҳақида бирор гап айтмаган. Бироқ айрим сўзлар изоҳидан сўнг унинг манбасига ишора қилиб ўтади. Шулар асосида Ибн Моликнинг манзума мусалласига асос бўлган манбаларни қуйидагича таснифлаш мумкин:

- 1) Ибн Саййиданинг «Al-muhkām<sup>u</sup>» асари;
- 2) Абу Исҳоқ Форобийнинг «Dīwān<sup>u</sup> al-'adab<sup>i</sup>» луғати;
- 3) «Muthallath<sup>u</sup> Quṭrub<sup>a</sup>» манзумаси;
- 4) Сибавайҳнинг «Al-kitāb<sup>u</sup>» асари;
- 5) Фарроънинг луғатлари;
- 6) Ибн Саййид Баталявсийнинг «Al-'iqtidhāb<sup>u</sup> fī sharh<sup>i</sup> 'ādāb<sup>i</sup> al-kuttāb<sup>i</sup>» асари.

Таъкидлаш керакки, «Al-'i'lām<sup>u</sup> bi-muthallath<sup>i</sup> al-kalām<sup>i</sup>» манзумасидаги 1205 та омоним ва пароним сўзларнинг 1030 таси исм, 175 таси (мозий) феъл сўз туркумига оиддир. Шунингдек, 1005 та сўз биринчи ўзак ҳарфининг ҳаракатига кўра, 180 таси иккинчи ўзак ҳарфининг ҳаракатига кўра, 5 та сўз учинчи ўзак ҳарфининг ҳаракатига кўра, 9 таси биринси ва иккинчи ўзак ҳарфининг ҳаракатига кўра, 6 та сўз биринчи ва учинчи ўзак ҳарфининг ҳаракатига кўра бир мусаллас жамланган.

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## MUQOBIL ENERGIYA MANBALARINI ENERGIYA SAMARADORLIGINI OSHIRISH

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FarPI tayanch doktorant

Bugungi kunda bir qator komplekslar mavjud global muammolar, ularning yechimi butun insoniyat kelajagiga xizmat qilishi mumkin. Muammo atrof-muhitni ifloslanishdan himoya qilish, odamlar va ishlab chiqarish o'rtasidagi munosabatlarni yaxshilash tarmoqlar. Bunday muammolarni ko'pincha asrimiz muammolari deb atashadi.[1]

Mamlakatimizda ham asosiy dolzarb bo'lgan elektr energiya manbalari ishlab chiqarish imkoniyatlarini oshirishni zamonaviy yashil energiya ishlab chiqarish imkoniyatlarini yaratish kunning asosiy mummosiga aylandi. Albatta bunga sabab elektr energiya iste'molchilarining elektr energiyaga bo'lgan talabning oshishi hisoblanadi.

Elektr energiya iste'molchilarini talablarini qondirish uchun hukumatimiz tomonidan O'zbekiston respublikasining "Qayta tiklanuvchi energiya manbalaridan foydalanish to'g'risida" qonuni 2019-yili qabul qilingan va joriy qilingan.

Ushbu qonunda 14-moddasida, Qayta tiklanuvchi energiya manbalaridan foydalanish sohasidagi intiyozlar ko'rsatib o'tilgan bo'lib, bular:

- Qayta tiklanuvchi energiya manbalaridan energiya ishlab chiqaruvchilar qayta tiklanuvchi energiya manbalari qurilmalarini (nominal quvvati 0,1 MVt va undan ortiq bo'lgan) o'rnatganlik uchun mol-mulk solig'ini to'lashdan hamda ushbu qurilmalar bilan band bo'lgan uchastkalar bo'yicha yer solig'ini to'lashdan ular foydalanishga topshirilgan paytdan e'tiboran o'n yil muddatga ozod etiladi.
- Amaldagi energetika resurslari tarmoqlaridan to'liq uzib qo'yilgan yashash uchun mo'ljallangan joylarda qayta tiklanuvchi energiya manbalaridan foydalanuvchi shaxslar egaligidagi mol-mulkka qayta tiklanuvchi energiya manbalaridan foydalanilgan oydan e'tiboran uch yil muddatga jismoniy shaxslardan olinadigan mol-mulk solig'i solinmaydi.
- Amaldagi energetika resurslari tarmoqlaridan to'liq uzib qo'yilgan yashash uchun mo'ljallangan joylarda qayta tiklanuvchi energiya manbalaridan foydalanuvchi shaxslar qayta tiklanuvchi energiya manbalaridan foydalanilgan oydan e'tiboran uch yil muddatga yer solig'idan ozod etiladi.[3]

Yuquridagi intiyozlar bilan bir qatorda muqobil energiya manbalari o‘rnatish bo‘yicha respublika mavjud banklari tomonidan kredit mablag‘lari ajratildi.

Mavjud imkoniyatlardan foydalangan holatda aholi tomonidan quyosh panellarini o‘rnatildi. Lekin o‘rnatish jarayonida ayrim eksplotatsion xatolarga yo‘l qo‘yilmoqda, bular:

- ❖ Quyosh panellarining ufq nuqtalari notog‘ri o‘rnatilishi-bu quyosh panellarini quyosh nuri tushish tomonga yetarlicha burulmaganligi;
- ❖ Quyosh panellarini invertorlarini sozlashdagi xatolar-bu invertorni kerakli rejimni tanlanmaganligi;
- ❖ Quyosh panellarini qo‘zg‘almas o‘rnatilganligi-bu mavsumiy holatda quyosh nurlarini yer sirtiga nisbatan optimal burchagi o‘zgarishi.[2,7,8]

Yuqoridagi xatoliklar evaziga quyosh panellaridan ishlab chiqarilayotgan elektr energiyadan to‘liq foydalanilmaganligi holatlari yuzaga keladi.

Mavjud A hududning A xonodoniga 2023 yil mart o‘yida o‘rnatilgan 5 kVtli quyosh elektr stansiyasi misolida tahlil qilamiz yuqorida yoritilgan hatoliklar evaziga qancha miqdorda elektr energiyadan foydalanilmaganligini.

A hududning A xonodoning ENHAT tizimi ma‘lumotlari 1-jadvalga kiritilgan aprel va sentabr oylari davomida iste‘mol qilgan elektr energiya miqdori.

1-jadval

№	Oy nomi	Iste‘mol qilingan elektr energiya, kVt*soat	
		2022 yil	2023 yil
1	Aprel	532	325
2	May	495	285
3	Iyun	685	245
4	Iyul	630	218
5	Avgust	520	210
6	Sentabr	515	285

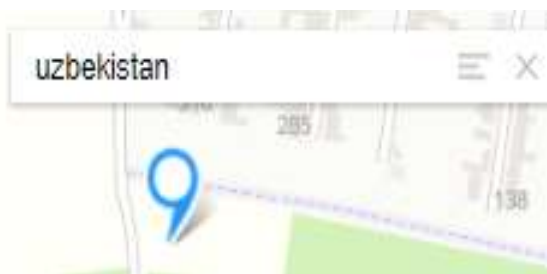
A xonadonning elektr energiya iste‘molchilarining kun davomida umumiy holatda qancha elektr energiya iste‘mol qilishini 2-jadvalda ko‘rsatilgan.



2-jadval

No	Nomi	Iste'mol quvvati, Vt	Soni, dona	Kun davomida ishlash vaqti, soat	Jami, kVt*soat
1	Elektr yoritish chiroqlari	60	10	7	4,2
2	Televizor	400	2	5	4
3	Sovitgich	600	1	10	6
4	Komputer	300	2	2	1,2
5	Kir yuvish mashinasi	1600	1	1	1,6
6	Chang yutgich	2000	1	1	2
7	Dazmol	2000	1	0,5	1
Jami					20

Onlayn kalkulyatorlar yordamida hisoblangan elektr energiya miqdori bilan real iste'molni ko'rib chiqamiz. Ush onlayn kalkulyator insolatsiya ma'lumotlari NASA serveri tomonidan taqdim etiladi hamda o'lchov tarixi 1984 yildan boshlanadi va bugungi kunda dunyodagi eng ishonchli ma'lumotdir.[4,6]

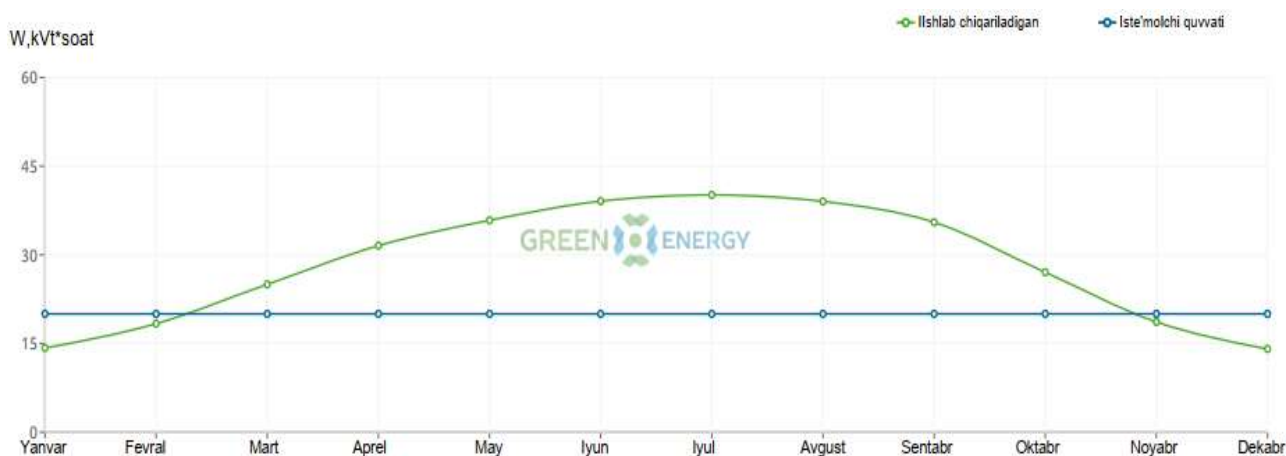


1-rasm. Joylashuv o'rni.

2-jadval asosida kunlik iste'mol miqdori kiritilgan va quyidagi 2-rasmda ko'rsatilgan grafik olindi.

Ushbu onlayn kalkulyator bo'limiga A xonadonning joylashgan o'rni belgilanadi.

Keyin kunlik iste'mol quvvati kiritiladi hamda quyosh panellarining quvvati va yer sirtiga nisbatan qanday burchakda joylashuvi belgilanadi va hisoblash natijalari olinadi.



2-rasm. Ishlab chiqilgan va iste'mol qilinadigan energiya miqdorlari.

3-jadvalda oylar kesimida o‘rtacha kunlik elektr energiya ishlab chiqariladigan elektr energiya miqdori berilgan kVt\*soatda. Yil davomida jami elektr energiyasi ishlab chiqarish miqdori: 10321,2 kVt/soat tashkil qiladiva joylashtirish burchagi 30°ni tashkil qilgan holatda.[4,5]

3-jadval

Yanvar	Fevral	Mapr	Aprel	May	Iyun	Iyul	Avgust	Sentabr	Oktabr	Noyabr	Dekabr
14.23	18.35	25	31.54	35.83	39.07	40.12	39.02	35.5	27.04	18.63	14.07

3-jadval asosida 2-jadvalda berilgan oylar kesimida ishlab chiqariladigan energiya miqdorlarini hisoblab 4-jadvalga kiritildi.

4-jadvalda 2023-yil malum davrida ya’ni quyosh panellarining o‘rnatilgandan keyingi davrda yuqorida aytib o‘tilgan xatoliklar sabab ishlab chiqarilmagan yoki iste’mol qilinmagan energiya miqdori hisoblangan.

4-jadval

№	Oy nomi	Iste’mol qilingan elektr energiya, kVt*soat		
		Real iste’mol qilingan (ENHAT tizimi ma’lumoti)	Ishlab chiqariladigan (hisoblab topilgan)	Ista’mol qilinmagan energiya
1	Aprel	325	946,2	621,2
2	May	285	1 110,73	825,73
3	Iyun	245	1 172,1	927,1
4	Iyul	218	1 243,72	1 025,72
5	Avgust	210	1 209,62	999,62
6	Sentabr	285	1065	780
Jami				5 179,37

4-jadvalda hisoblab topilgan qiymatlardan ko‘rinib turibdiki, eksplutatsion xatoliklar sabab 5179,37 kVt\*soat elektr energiyasi ishlab chiqarilmagan.

Hulosa qilib ush bu maqoladagi yoritib o‘tilgan eksplutatsion xatolar sabab mavjud elektr energiya ishlab chiqarish imkoniyatlarimizdan to‘laqonli foydalana olinmagan. Shu sababdan quyosh panellarini o‘rnatishga maqolada yoritilgan xatoliklarni oldini olishi kerak va bu bilan energiya resurslarimizni saqlaq qolish imkoniyatimizni oshiradi hamda elektr energiya iste’molchilarimizni talablarini qondirish imkoniyatimiz ortib boradi.

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## INGLIZ VA O‘ZBEK TILLARIDA DIPLOMATIK TERMINLAR VA ULARNING XUSUSIYATLARI

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**Annotatsiya:** Bu maqolada ingliz tilidagi teledasturlarning tili, vositalari, imkoniyatlari va uning xususiyatlari haqida ma’lumotlar mavjud.

**Kalit so‘zlar:** OAV, televideniya, teledastur, g‘oyaviy targ‘ibot, “Uzreport”, “O‘zbekiston 24”, KVS telekompaniyasi, tezkorlik, jahon televideniyalari.

**Annotation:** In this article, information is provided about the language, tools, capabilities, and features of English telecommunication programs.

**Keywords:** OAV, television, teleprogram, entertainment, "Uzreport," "Uzbekistan 24," KVS Telekompany, efficiency, international television.

Diplomatik termin — diplomatiya sohasida va davlatlararo munosabatlarda ishlatiladigan, ma’nosini aniq ifodalaydigan so‘z yoki iboradir. Bu terminlar, diplomatik muzokaralar, kelishmalarni tushuntirish, diplomatik hujjatlarni tuzatish, va boshqa diplomatik faoliyatlar davrida o‘ziga xos ma’nolarni anglatadi. Diplomatik terminologiya, mamlakatlar o‘rtasidagi mazmun va kelishmalarni tuzishda, hujjatlarni tuzatishda, diplomatik predmetlarni masalaga solishda va boshqa diplomatik faoliyatlar bo‘yicha ko‘proq aniq va moslashtirilgan so‘zlarni o‘z ichiga oladi.

Diplomatik terminlarning xususiyatlari quyidagilardir:

1. *Aniq va tuzatilgan ma’no:* Diplomatik terminlar aniq va tuzatilgan ma’noga ega bo‘lishi kerak. Ular mamlakatlar o‘rtasidagi muzmon muzokaralar va munosabatlarni tushuntirishda, hujjatlarni tuzatishda, va boshqa diplomatik faoliyatlar davrida foydalaniladi.
2. *O‘ziga xos so‘z qo‘llanish:* Diplomatik terminlar, o‘zlariga xos diplomatik mulohazalar, tadbirlar, va muammolar uchun maxsus so‘zlar bo‘lishi lozim. Bu so‘zlar, diplomatiya sohasidagi ma’ruzalar, muzokaralar, va kelishmalarda qo‘llaniladi.
3. *Tadbirlar va muzokaralar uchun maxsus:* Diplomatik terminlar, diplomatik tadbirlar va muzokaralar davrida intensiv ravishda ishlatiladi. Ular diplomatik

hujjatlarni va kommunikatsiyani tuzatishda, shuningdek, qonun hujjatlarni va kelishmalarni tushuntirishda ham foydalaniladi.

4. *Rasmiy huquqiy tarzda qo'llanish:* Diplomatik terminlar, rasmiy huquqiy tarzda ishlatiladi. Ularni rasmiy hujjatlar, muzokaralar, shartnomalar, va boshqa diplomatik hujjatlar tuzatishda foydalaniladi.
5. *Mamlakatlarning madaniyatiga mos keladigan so'zlaridir:* Diplomatik terminlar, har bir mamlakatning madaniyatiga mos keladigan so'zlar bo'lishi kerak. Ularning ifodasi va tushuntirish usullari o'zaro farqlanadi.
6. *Tarjima masalalari:* Diplomatik terminlar, qo'shma tarjimalarni ta'minlash va mamlakatlar o'rtasidagi mazmun va ma'nolarni to'g'ridan-to'g'ri yetkazishda katta ahamiyatga ega.
7. *Mahalliy tushunchalarga ko'ra farqli bo'lishi:* Ba'zi diplomatik terminlar, mamlakatlar o'rtasida farqli tushunchalarga ega bo'lishi mumkin. Bu esa ularni aniq va o'ziga xos qiladi.

Diplomatik terminlar, diplomatik faoliyatning tuzilishi va mamlakatlar o'rtasidagi munosabatlar tuzilishi bo'yicha juda muhimdir. Bu terminologiya o'zining aniq, hamkorlik, va o'zaro tushunchalarni qo'llashda katta ahamiyatga ega.

Ingliz va o'zbek tillarida diplomatik terminlar o'zaro farq qiladi. Quyidagi, ba'zi diplomatik terminlarning Ingliz va O'zbek tillaridagi o'ziga xos qismlarini ko'rsataman:

**Embassy / Elchixonona:** *Ingliz:* An embassy is the official residence and workplace of an ambassador in a foreign country. *O'zbek:* Elchixonona – Safar xonasining rasmiy joyi va ambassadorning ish joyi.

**Ambassador / Elchi:** *Ingliz:* An ambassador is a high-ranking diplomat who represents their country in another country. *O'zbek:* Elchon – Bir davlatni boshqa bir davlatda ifodalovchi, oliy martaba egallagan diplomat.

**Consulate / Konsullik:** *Ingliz:* A consulate is a smaller diplomatic office that handles certain legal matters for its citizens in a foreign country. *O'zbek:* Konsullik – Qisqa diplomatik idoraviy yoshi, jahondagi vatandoshlari uchun ma'lum qonuniy ishlar bilan shug'ullanadi.

**Diplomacy / Diplomatiya:** *Ingliz:* Diplomacy is the conduct of international relations and negotiations between countries. *O'zbek:* Diplomatiya – Davlatlararo munosabatlar va muzokaralar olib borishning uslubi.

**Protocol / Protokol:** *Ingliz:* Protocol refers to the formal rules and customs of diplomatic etiquette. *O'zbek:* Protokol – Diplomatik etiketning rasmiy qoida va adabiyoti.

**Crisis Management / Krisis boshqarish:** *Ingliz:* Crisis management involves handling and resolving diplomatic emergencies or critical situations. *O‘zbek:* Krisis boshqarish – Diplomatik kasalliklar yoki kritik holatlarni boshqarish va hal qilish.

**Bilateral Relations / Ikki tomonlama munosabatlar:** *Ingliz:* Bilateral relations refer to the diplomatic interactions and agreements between two countries. *O‘zbek:* Ikki tomonlama munosabatlar – Ikki davlat o‘rtasidagi diplomatik muloqotlar va kelishmalar.

**Multilateral Cooperation / Ko‘plik tomonlama hamkorlik:** *Ingliz:* Multilateral cooperation involves collaborative efforts and agreements among multiple countries. *O‘zbek:* Ko‘plik tomonlama hamkorlik – Bir nechta davlatlar o‘rtasidagi jamoaviy harakat va kelishmalar.

**Negotiation / Muzokara:** *Ingliz:* Negotiation is the process of discussing and reaching agreements between parties. *O‘zbek:* Muzokara – Qismlar o‘rtasidagi muzokaralar va kelishmalar jarayoni.

Bu misollar diplomatik sohada o‘zbek va ingliz tillaridagi turli terminlarni ko‘rsatadi. Bu sohada foydalaniladigan terminologiya davlatlararo munosabatlar va diplomatiya sohalarini tushunish uchun muhimdir.

Xulosa qilib aytadigan bo‘lsak, ingliz va o‘zbek tilida diplomatic terminlarga oid terminlar umumadabiy tilda ham qo‘llanilsada, diplomatic sohada ular chuqurroq ma’noga ega bo‘ladi. Shuningdek, so‘zlashuv uslubida qo‘llanilmaydigan sof diplomatik so‘zlar ham bo‘lib ulardan foydalanayotganda ehtiyotkorlik zarur va albatta diplomatik terminlar lug‘atidan foydalangan ma’qul.

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## BIOMETRIK AUTENTIFIKATSIYA TIZIMINING AFZALLIKLARI VA KAMCHILIKLARI

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*Annotatsiya:* Ushbu maqolada biometrik autentifikatsiya va identifikatsiyalash tizimlari, afzalliklari va kamchiliklari, o'ziga xoslik darajasi haqida tahliliy fikrlar ko'rsatib o'tilgan.

*Kalit so'zlar:* biometrik autentifikatsiya, biometrik identifikatsiya, False Access Rejection, False Access Grant.

## ПРЕИМУЩЕСТВА И НЕДОСТАТКИ БИОМЕТРИЧЕСКОЙ СИСТЕМЫ АУТЕНТИФИКАЦИИ

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*Аннотация:* В данной статье представлены аналитические мнения о биометрических системах аутентификации и идентификации, их достоинствах и недостатках, уровне уникальности.

*Ключевые слова:* биометрическая аутентификация, биометрическая идентификация, ложный отказ в доступе, ложное предоставление доступа.

## ADVANTAGES AND DISADVANTAGES OF A BIOMETRIC AUTHENTICATION SYSTEM

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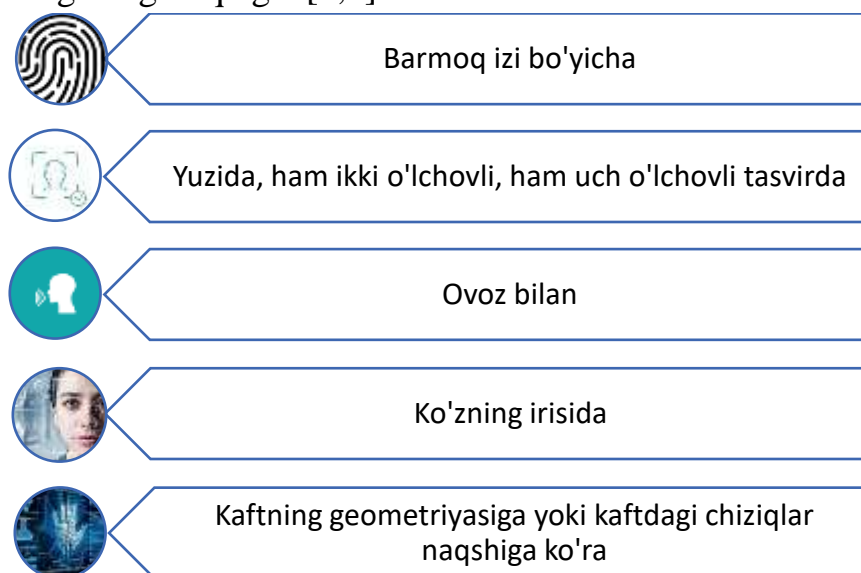
*Annotation:* This article presents analytical opinions about biometric authentication and identification systems, their advantages and disadvantages, and the level of uniqueness.

*Key words:* biometric authentication, biometric identification, False Access Rejection, False Access Grant.

Biometrik identifikatsiya/autentifikatsiya har yili ommalashib bormoqda. Bunday texnologiyalar butun dunyo bo‘ylab turli sohalarga faol integratsiya qilinmoqda va deyarli har bir insonning hayotiga mustahkam kirdi. Biometrik ko‘plab zamonaviy mobil qurilmalarda qo‘llaniladi. Biz viza olganimizda, masalan, Shengen vizasi, bizdan biometrik ma‘lumotlarni (barmoq izlari) taqdim etishimiz talab qilinadi. 2012 yildan boshlab O‘zbekistonda biometrik xorijiy pasportlar berila boshlandi[1,4]. Yuqori ehtimollik bilan oddiy umumiy pasport yoki uning analogi ham yaqin kelajakda biometrik bo‘ladi.

Yirik kompaniyalarda biometrik autentifikatsiya kirishni tashkil qilishda korporativ tarmoqda tobora ko‘proq foydalanilmoqda. ATM modellari paydo bo‘ldi, ularga kirish biometrik tekshiruvdan so‘ng amalga oshiriladi. Eng yirik biometrik identifikatsiya loyihalari davlat darajasida amalga oshirilmoqda. Dunyodagi eng yirik biometrik identifikatsiya tizimi Hindistonda joriy qilingan. 2018-yil boshida unda 1 milliarddan ortiq kishi ro‘yxatga olingan. Ayni paytda mamlakatimizda fuqarolarning bankka bormasdan turib bank xizmatlaridan foydalanishi uchun yuzma-yuz va ovozli aloqa orqali masofaviy biometrik autentifikatsiya qilish davlat loyihasi va boshqa qator xizmatlar amalga oshirilmoqda[1,4].

Hozirgi vaqtda biometrik identifikatsiya/autentifikatsiyaning quyidagi 1-rasmdagi turlari eng keng tarqalgan[1,4]:



1-rasm (identifikatsiya/autentifikatsiyaning turlari)

Biometrik identifikatsiya (BI) autentifikatsiyadan (BA) farq qiladi, chunki identifikatsiyalash paytida foydalanuvchi o‘zining biometrik ma‘lumotlarini tizimda mavjud bo‘lgan barcha ma‘lumotlar bilan solishtirish yo‘li bilan aniqlanadi. Biometrik autentifikatsiya yordamida foydalanuvchi tizimga kimligini aytadi (masalan, unikal login kiritadi), tizim ushbu login yordamida ma‘lumotlar bazasidan o‘zining biometrik



ma'lumotlarini o'qiydi va keyin ularni foydalanuvchi tomonidan taqdim etilganlar bilan tekshiradi.

Biometrik barmoq izini autentifikatsiya qilish hozirda dunyoda eng keng tarqalgan bo'lishiga qaramay, boshqa texnologiyalar faol rivojlanmoqda va yangilari paydo bo'lmoqda. Hozirgi vaqtda eng istiqbollilari kaftdagi chiziqlar naqshiga asoslangan va irisga asoslangan biometrik autentifikatsiya texnologiyalari bo'lib ko'rinadi (Samsung flagman smartfonlarida joriy etilgan). Tez orada ushbu texnologiya boshqa ishlab chiqaruvchilarning qurilmalarida paydo bo'lishini kutish mumkin.

Nega biometrik ma'lumotlar shunchalik jozibali?

Javob oddiy ko'rinadi: bu insonning ajralmas qismi bo'lib, vaqt o'tishi bilan o'zgarmaydi va uni o'ziga xos tarzda belgilaydi. Aslida bu haqiqat emas. Turli xil biometrik autentifikatsiya texnologiyalari uchun bu da'volar turli darajadagi ishonchlilikka ega. Barmoq izi yoki iris biometric identifikatsiya uchun uchta bayonot ham juda to'g'ri. Ovoz yoki yuz autentifikatsiyasi uchun endi bunday emas. Bu ko'rsatkichlar fiziologik o'zgarishlar tufayli inson hayoti davomida sezilarli darajada o'zgaradi. Yuzni autentifikatsiya qilishga kelsak, bu erda odamning o'zi qisqa vaqt ichida o'z qiyofasini tubdan o'zgartirishi mumkin[2,3].

Agar zamonaviy plastik jarrohlik imkoniyatlarini hisobga oladigan bo'lsak, unda identifikatorning (yuzning) uzoq vaqt davomida o'zgarmasligi haqidagi bayonot odatda ishonchliligini yo'qotadi. Xuddi shu narsa ovozga ham tegishli. U nafaqat hayot davomida o'zgaribgina qolmay, balki turli kasalliklarda, ayniqsa, sovuqlarda jiddiy o'zgarishlarga duchor bo'ladi, insonning vaqtincha ovozi yo'qotishi mumkinligi haqida gapirmaslik kerak, ya'ni aslida aniqlash vositalarini yo'qotadi.

Identifikatsiyaning o'ziga xoslik darajasi ham nisbiy tushunchadir. Bularning barchasi tizimda sozlangan identifikatsiya/autentifikatsiya jiddiyliги darajasiga bog'liq. Tashkilotimizda biometrik barmoq izlari autentifikatsiyasini joriy qilganimizda, deyarli har qanday odam turli xil barmoqlarni turli pozitsiyalarda qo'llash bilan 10-15 daqiqa davomida tajriba o'tkazgandan so'ng, boshqa foydalanuvchi hisobi ostida autentifikatsiya qilishiga duch keldik. Bu qanday, deb so'raysiz, chunki odamning barmoq izi noyobdir? Gap shundaki, biometrik autentifikatsiya tizimlari ikki barmoq izini to'g'ridan-to'g'ri solishtirmaydi. Dastlab, tizimda ro'yxatdan o'tishda odam barmog'ini qo'yadi, uni skanerlaydi va taxminan aytganda, papiller naqshning ma'lum nuqtalarida ma'lum bir matematik model (konvolyutsiya) hosil bo'ladi. Keyingi autentifikatsiya vaqtida barmoq namunasi skanerlanadi va matematik konvolyutsiya qayta hisoblab chiqiladi. Aynan u standart bilan taqqoslanadi. Ko'rinib turibdiki, odam har safar barmog'ini biroz boshqacha

qo'yganda, skanerlash maydoni boshqacha bo'ladi, shuning uchun tizim izlarning mos kelishining jiddiyligini belgilaydi.

Biometrik autentifikatsiya tizimlarining ikki xil xatosi[1,3]:

**1. False Access Rejection (FR)** - resursdan foydalanish huquqiga ega bo'lgan vakolatli shaxsga kirishni rad etish;

**2. False Access Grant (FA)** - ob'ektga kirish huquqiga ega bo'lmagan yoki undan mahrum bo'lgan shaxslarni resursga qabul qilish.

Birinchi holda, identifikatorni noto'g'ri ishlatish yoki biometrik xususiyatlarni noto'g'ri kiritish tufayli xato (FR) paydo bo'ladi.

Xato (FA) odatda dastlabki ma'lumotlarni noto'g'ri ro'yxatdan o'tkazish yoki oldingi foydalanuvchilardan qolgan uchinchi tomon yozuvlari mavjudligi bilan bog'liq.

Bundan tashqari, menejerlar ko'pincha qurilmalarning o'zlari bilan taqqoslash uchun ishonch chegarasini ortiqcha baholaydilar yoki kam baholaydilar. Ushbu chegarani oshirish ruxsatsiz shaxslarning ob'ektga kirish imkoniyatini minimallashtiradi, ammo bu holda ruxsat berilgan foydalanuvchilarga ko'proq kirish taqiqlanadi.

#### ***Biometrik tizimning afzalliklari:***

- Autentifikatsiyaning ishonchliligi va tezligi: barmoq izi yoki iris namunasi asosida elektron tahliliy qurilmalar bir yoki ikki soniya ichida shaxsni aniqlaydi;
- Xavfsizlikning yuqori darajasi: shaxsning biometrik xususiyatlari noyobdir, bu identifikatsiyalashda xatolar sonini kamaytiradi;
- Biometrik ma'lumotlarni yo'qotish yoki unutish mumkin emas;
- Biometrik autentifikatsiya qurilmalaridan foydalanish oson va tejamkorlik bilan ishlaydi.

#### ***Biometrik tizimning kamchiliklari:***

- Joriy ma'lumotlar bazasida biometrik xususiyatlarni o'zgartirish mumkin emas - parollardan farqli o'laroq, ular hayoti davomida ma'lum bir shaxs bilan bog'lanadi;
- Yoshga bog'liq o'zgarishlar, jarohatlar, amputatsiyalar va boshqa narsalar tufayli elektron hisoblash qurilmalari xotirasiga kiritilgan mos yozuvlar taqqoslash modellarini doimiy ravishda yangilab turish talab etiladi;
- Biometrik namunalarni yaratish uchun maxsus o'quvchilar talab qilinadi;
- Biometrik ma'lumotlarni sir saqlash mumkin emas, shuning uchun malakali hujumchilar barmoq izlari yoki qo'l izlari namunalarini soxtalashtirishi mumkin.

Hozirgi vaqtda biometrik ma'lumotlarni o'qish uchun eng ko'p qirrali qurilma bu mobil telefondir. Ehtimol, ushbu qurilmalarda yangi biometrik identifikatsiya

texnologiyalari joriy etiladi. Mobil telefonlar ko‘p faktorli biometrik skanerlarga aylanadi. Mutaxassislarning fikriga ko‘ra, elektronika davriga qadam qo‘yayotganimizni va tibbiy telemetriya sakrash va chegaralar bilan oldinga siljishini hisobga olsak, yaqin kelajakda o‘ziga xos kamchiliklardan xoli yangi biometrik identifikatsiya texnologiyalari paydo bo‘lishi mumkin[2,4].

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## NO‘XAT EKININI YETISHTIRISHDA EKISH MEYORLARINI QO‘LLASH

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### ANNOTATSIYA

*Respublikamizda don ekinlari bilan birgalikda dukkakli - don ekinlarini ekish, ularning maydonlarini kengaytirish va hosildorligini oshirish shu kunning dolzarb masalalaridan biri bo‘lib hisoblanadi. Ushbu maqolada Samarqand viloyatining sug‘oriladigan yerlarda yaratilgan no‘xatning “Umid” navi hosildorligiga ekish meyorlarining ta‘siri to‘g‘risidagi ma‘lumotlar bayon etilgan.*

***Kalit so‘zlar.** Dukkakli–don ekinlari, tuproq strukturasi, biologik azot, oqsil, chorva mollari oziqasi, unumdorlik, sug‘oriladigan maydonlar.*

## APPLICATION OF PLANTATION STANDARDS IN CHICKPEA CROP GROWING

### ABSTRACT

*One of the urgent issues of today in our republic, along with grain crops, is the sowing of leguminous crops, the expansion of their areas and the increase in yield. This article describes the impact of the planting rate on the yield of the chickpea variety "Umid" on irrigated lands of the Samarkand region.*

***Keywords.** Legumes-cereals, soil structure, biological nitrogen, protein, livestock feed, fertility, irrigated areas.*

## KIRISH.

Respublikamizda don ekinlari bilan birgalikda dukkakli - don ekinlarini ekish, ularning maydonlarini kengaytirish va hosildorligini oshirish shu kunning dolzarb masalalaridan biri bo'lib hisoblanadi. Dukkakli – don ekinlarini keng miqyosda ekish, tuproq strukturasi yaxshilab, uning unumdorligini oshishi hamda tuproqda biologik azotni to'plashda ahamiyati kattadir [1,3].

Dukkakli - don ekinlari orasida yuqori miqdorda oqsil va sifatli moy beruvchi no'xat o'simligi alohida ahamiyatga ega. Hozirgi kunda, yer yuzidagi rivojlangan mamlakatlarda chorva mollari oziqasida dukkakli ekinlardan - no'xat muhim o'rinni egallaydi [1,2,4].

Respublikamizning sug'oriladigan maydonlarida no'xat ekini boshqa dukkakli - don ekinlari singari tuproqning agrokimyoviy tarkibini va suv - fizikaviy xossalarini yaxshilashda muhim agrotexnik ahamiyatga ega.

## ADABIYOTLAR TAHLILI VA METODOLOGIYA.

No'xat asosan qurg'oqchilikka chidamli ekin bo'lganligi uchun respublikamiz xo'jaliklarida faqat lalmikor hududlarda yetishtiriladi va bu yerlarda bahor oylarida yog'in-sochinlar kam bo'lganligi uchun no'xatdan har bir gektar hisobiga o'rtacha 3-5 sentner, ayrim qurg'oqchilik kelgan yillari, umuman hosil olib bo'lmasligi kuzatilmoqda. Shuning uchun respublikamizning lalmikor yerlarida keyingi yillarda no'xat ekini kam maydonlarda yetishtirilmoqda [1,3,4, 7,8]

No'xatning "Umid" navi SamDVMCHIU olimlari I.Xamdamov, G.Suvonova S.B.Mustanov, M.M.Djumayevlar tomonidan yaratilgan "O'zbekiston – 8" no'xat navi hamda O'zbekiston Donchilik ilmiy-tadqiqot instituti olimlari P.P.Oleynik Q.E.Eshmirzayevlar tomonidan yaratilgan no'xatning "VIR-3211" nav namunalarini chatishtirib, yakka tanlash yo'li bilan yaratilgan.

Poyasi tik o'suvchi, bargi va poyasi ser tukli, bo'yi lalmi yerda 47-55 sm, sug'oriladigan yerlarda esa 80-100 sm, ostki dukkagining yer yuzasidan balandligi 40-45 sm. Guli oq, yirik bo'lib, barg qo'ltig'ida bittadan joylashgan. Urug'i och sarg'ish, oqish rangda, usti g'adir-budir, qaynatganda yaxshi pishadi. Urug'i ancha yirik, 1000 dona urug'ining og'irligi 300-340 grammgacha boradi. Askoxitoz kasalligiga chidamliligi o'rtacha. Bu nav qurg'oqchilikka chidamli bo'lib, dukkagi pishib yetilgach ochilib ketmaydi. O'suv davri 75-90 kunga boradi.

Tadqiqot Samarqand viloyati Toyloq tumani Bog'izog'on fermer xo'jaligining bo'z tuproqlari sharoitida o'tkazildi. Tajriba bir necha yillardan beri sug'oriladigan yerlarda ekib kelinayotgan «Umid» navi qator orasi 60 sm, urug'larni ekish meyorlari gektariga 60, 50, 40, 30 kg/ga variantlarda ekilib olib borildi

## **NATIJARLAR.**

Tajribada paykalning umumiy maydoni 12 m<sup>2</sup>, hisoblash maydoni 10 m<sup>2</sup>, takrorlar soni 3 ta, 4 xil variantda ya'ni urug'larni gektariga 60, 50, 40, 30 kg ekish meyorda ekildi. Har bir variantlarda sug'orishlar gektariga 700-800 m<sup>3</sup> suv sarfi hisobidan 3 marta ya'ni unib chiqish, g'unchalash va gullash davrlarida olib borildi.

Tajribada no'xatning o'sishi va rivojlanish borasidagi ko'rsatkichlari ekish meyorlariga hamda sug'orishga bog'liqligi aniqlandi.

O'simlik bo'yining balandligi ekish meyori gektariga 60 kg ekilgan variantda 88,6 sm ni, 50 kg/ga ekilganda 83,4 sm ni, 40 kg/ga ekilganda 80,7 sm ni, 30 kg/ga meyorda ekilgan variantda esa o'simlik bo'yining baladligi past bo'lishi kuzatildi va u 76,4 sm ni tashkil qildi. o'simlik bo'yining bo'yining balandligini aniqlashda eng yuqori ko'rsatkich ekish meyori 60 kg/ga ekilgan variantda kuzatildi va 30 kg/ga meyorda ekilgan variantga nisbatan 12,1 sm baland bo'lganligi aniqlandi.

O'simlikni ostki dukkagining yerdan balandligi (ODEB) o'simlik bo'yining baladligiga bog'liq.[1.2.4]. Tajribalarimizda o'simlikning ostki dukkagining yerdan balandligi kuzatilganda ekish meyori gektariga 60 kg/ga variantida ekilganda 28,7 sm balandlikda joylashgan bo'lsa, eng past ko'rsatkich 30 kg ekilgan variantda 22,3 sm ga teng bo'ldi.

## **MUHOKAMA.**

60 kg/ga meyorda ekilgan variantda o'simlik dukkaklarining yerdan baladligi 30 kg/ga ekilgan variantga nisbatan 6,4 sm yuqorida joylashganligi aniqlandi. O'simlikning bo'yi baland bo'lishi bilan ostki dukkagining yerdan balandligi xam mutonosib ravishda yuqori bo'lishi kuzatildi.

## **XULOSA.**

Xulosa qilib aytganda tajribalarimiz davomida Samarqand viloyatining bo'z tuproqli yerlarida erta bahorda tuproqning namgarchiligi yuqori muhitda no'xatning «Umid» navidan gektariga 700-800 m<sup>3</sup> suv sarfi hisobidan 3 marta sug'orib, ya'ni unib chiqish, g'unchalash va gullash davrlarida sug'orilganda ekish meyorini oshib borishi bilan o'simlik bo'yining balandligi, o'simlikdagi dukkaklar va dukkamdagi donlar soni qator orasi 60 sm, ekish meyori gektariga 30 kg urug' sarfi hisobidan ekish yuqori samara beradi.

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## ZAMONAVIY DUNYODA SIYOSIY YETAKCHILIK TO‘G‘RISIDAGI QARASHLAR

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*Siyosiy jarayonni va uning oqibatlarini tushunish uchun muhim ahamiyatga ega bo‘lgan siyosiy etakchilik tushunchasi ikki xil talqin qilinadi. Siyosiy yetakchilik bo‘yicha tadqiqotlar uzoq vaqt davomida ko‘plab fanlar - tarix, falsafa, siyosiy nazariya, psixologiya doirasida olib borilmoqda. Yetakchilik dinamik jarayon bo‘lib, unda yetakchilar va xodimlar ma‘lum bir vaziyat/kontekstda o‘zaro ta‘sir qiladi. Xodimlar bilan muloqot qilishda rahbarlar ularning kayfiyati va intilishlarini tushunishlari kerak. Rahbar va menejer o‘rtasidagi asosiy va operatsion farqlar kuzatiladi. Boshqaruv samaradorligi tashkiliy tuzilishga yo‘naltirilganlikni nazarda tutadi. Muvaffaqiyatli etakchilik ma‘naviyat va madaniyat tomonidan boshqariladi. “Yetakchi-xodim-vaziyat” o‘zaro ta‘sirining interaktiv tabiati bizga yetakchi-xodim munosabatlarining o‘zgaruvchan xarakterini va zamonaviy dunyoda ular duch keladigan vaziyatlarning tobora murakkablashib borayotganini yaxshiroq tushunish imkonini beradi. E‘tiborli etakchilik o‘zgarishlarni keltirib chiqaradi va bunga etakchilikka ta‘sir qiluvchi muhim omillarni chuqurroq tushunish orqali erishiladi. Zamonaviy dunyoda ro‘y berayotgan o‘zgarishlar yangi turdagi siyosiy liderlar, ularning xodimlari bilan o‘zaro munosabatlarining yangi shakllari va mexanizmlari paydo bo‘lishini talab qiladi, bu esa etakchilik samaradorligini ta‘minlaydi.*

**Kalit so‘zlar:** *siyosiy lider, siyosiy yetakchi, xodimlar/tarkiblar, siyosiy kuch, ta‘sir, identifikatsiya, xarizma.*

Siyosiy etakchilik siyosiy jarayonlar va natijalarni tushunish uchun markaziy tushunchadir, ammo uning ta‘rifi qiyin. Siyosiy etakchilikni o‘rganish uzoq tarixga ega. Ushbu tadqiqotga ko‘plab fanlar, jumladan, tarix, falsafa, siyosiy nazariya, psixologiya va h.k.lar hissa qo‘shgan. Liderlik - bu liderlar va xodimlarning muayyan vaziyat yoki kontekstda dinamik o‘zaro ta‘siri bo‘lgan jarayon. Rahbarlar ularning kayfiyati va tashabbuslarini tushunish uchun xodimlar bilan bog‘lana olishlari kerak. Rahbar va menejer o‘rtasida muhim va operatsion farqlar mavjud. Boshqaruv samaradorligi ratsionallik va tashkiliy tuzilishga urg‘u berish bilan bog‘liq. Etakchilik



samaradorligi ma'naviyat va madaniyat bilan bog'liq. Rahbar-xodimlar-vaziyatining interfaol tabiati bizga rahbar xodimlari munosabatlarining o'zgaruvchan tabiatini va zamonaviy dunyoda etakchilar va xodimlar duch keladigan vaziyatlarning tobora murakkablashishini yaxshiroq tushunishga yordam beradi. Yaxshi etakchilik o'zgarishlarni keltirib chiqaradi va uni etakchilik jarayoniga ta'sir qiluvchi muhim omillarni ko'proq bilish orqali oshirish mumkin. Bugungi dunyoda biz duch kelayotgan o'zgarishlar siyosiy liderlarning yangi zotini, samarali yetakchilikni ta'minlovchi yetakchi va xodimlar o'zaro munosabatlarining yangi shakllari va mexanizmlarini talab qilmoqda.

Insoniyat tarixida turli darajadagi rahbarlar, suverenlar va prezidentlar, turli darajadagi rahbarlar odamlarning harakatlarini ilhomlantirdi va yo'naltirdi, ularni mamlakat taqdiri uchun o'z kuchini va mas'uliyatini namoyon etishga majbur qildi. Aytish mumkinki, o'zining boshlang'ich davrida tarixni o'rganish yetakchilarni o'rganish bo'lgan. "Yetakchilik er yuzidagi eng aniq va eng kam tushunilgan hodisalardan biridir" (J.M. Berns). Eng muhim ijtimoiy hodisa sifatida etakchilik doimo umuminsoniy qiziqish uyg'otgan va uyg'otishda davom etmoqda. Olimlar - tarixchilar, faylasuflar, siyosatshunoslar, psixologlar etakchilikning shakllanishi va faoliyat ko'rsatish qonuniyatlarini, uning ta'sir qilish sabablari va omillarini o'rganadilar. Amaliyotchi psixologlar va menejment bo'yicha mutaxassislar potensial liderlarni aniqlashning turli usullari va etakchilik fazilatlarini yaxshilash texnologiyalarini ishlab chiqmoqdalar. O'zlari lider bo'lishni xohlaydiganlar o'zlarida buning uchun zarur bo'lgan fazilatlarni rivojlantirishga, kerakli ko'nikmalarni rivojlantirishga bor kuchlari bilan intiladilar. Rahbarga ergashganlar nafaqat ularni uning kuchi va ta'siriga bo'ysunishga majbur qiladigan narsa bilan emas, balki, o'z navbatida, ular rahbarga qanday ta'sir qilishi va uning harakatlariga ta'sir qilishi mumkinligini tushunish istagi bilan ham qiziqadi. Siyosiy yetakchilikka oid ilmiy tadqiqotlar ko'lamini, birinchi navbatda, G'arb mamlakatlarida, haqiqatan ham ulkan va integral xarakterga ega. Bu esa tabiiydir, chunki siyosiy yetakchilikda hokimiyatning psixologik va ijtimoiy asoslarining o'zaro bog'liqligi namoyon bo'ladi, jamiyatni boshqarish va integratsiyalash funksiyalari birlashtiriladi. Hokimiyatni qo'lga kiritish va qo'llab-quvvatlash strategiyalari, etakchi va xodimlar o'rtasidagi o'zaro ta'sir mexanizmlari, turli xil etakchilik uslublarining xususiyatlari, etakchilik tipologiyasi va boshqalar, ya'ni. Etakchilikning turli jihatlari faol fanlararo tadqiqot ob'ektiga aylandi. Biroq, zamonaviy dunyoda etakchilik va uning rolini baholashda "salbiy" yondashuv ham mavjud. Rahbarlarga bo'lgan ishonch va ularning jamiyat hayotidagi alohida o'rni ommaning noratsional intilishlariga asoslanadi, bu esa etakchilikni mifologiklashtirishga olib keladi, degan fikr mavjud. Rahbarlik muhim boshqaruv

ta'sirini ta'minlay olmaydi, rahbarning aniq harakatlari va uning faoliyati samaradorligi o'rtasida bog'liqlikni o'rnatish qiyin. Bundan tashqari, ba'zilar "rahbarlik" tushunchasi sun'iy ravishda o'ylab topilgan tushuncha deb hisoblashadi. Shunday qilib, menejment va murabbiylik sohasidagi avstraliyalik mutaxassis F.Ralf o'zining "Kumush o'qlarsiz yetakchilik: yetakchilikni rivojlantirish bo'yicha qo'llanma" nomli asarida hozirda yetakchilik turli sabablarga ko'ra umuman "ishlamaydi" degan pozitsiyani asoslab beradi. Uning fikricha, olimlar samarali rahbar bo'lish uchun qanday fazilatlar zarurligini aniq belgilab bera olmaydilar, buning sababi shundaki, ba'zi odamlar boshqalarni ilhomlantirib, o'zlarining eng yaxshi fazilatlarini yuzaga chiqarishga qodir, boshqalari esa kutish va sabr-toqatni afzal ko'radi 1. Bu yo'nalishda bahs yuritib, G.Gemmil va J.Oakli (Sirakuz universiteti, Gretsiya) begonalashuvning ijtimoiy afsonasi sifatida o'ziga xos yetakchilik "nazariyasi"ni ishlab chiqdi. Ijtimoiy hodisa sifatida etakchilik umuman mavjud emas, ular ta'kidlaydilar va odamlarning uning zarurligiga ishonishlari ularning noratsional tuyg'ulariga asoslanadi. Bu shaxslar va ijtimoiy guruhlarning "asosiy vazifasi odamlar birgalikda yashashda qabul qilinishi mumkin bo'lmagan ehtiyojlar, his-tuyg'ular va istaklarni bostirish" va marosimlar va marosimlarga muvofiq harakat qilishdan iborat himoya mexanizmlarini yaratish istagi bu mualliflarning fikricha, virtual tuzilmalarni qurishga, "rahbarlik" deb nomlangan mifni yaratishga olib keladi 2. Bizning nuqtai nazarimizdan, etakchilik afsona emas. U haqiqatan ham mavjud, bundan tashqari, u jamiyatning ijtimoiy-siyosiy faolligining katalizatori va ko'rsatkichidir. Etakchiliksiz ijtimoiy guruhlar va jamoalar, tashkilotlar, siyosiy partiyalar va umuman jamiyatning samaradorligi pasayadi. O'tmishda o'xshashi bo'lmagan yangi siyosiy sharoitlar yuzaga kelganda, ayniqsa, etakchilikning roli katta; Qachon vaziyat murakkab va ziddiyatli; turli siyosiy yechimlar o'rtasida tanlov mavjud bo'lganda. Milliy liderlar jamiyatning timsoli, siyosiy xulq-atvor namunalari. Turli mamlakatlar va xalqlar hayotidagi butun davrlar odamlar ongida muayyan rahbarlarning nomlari va faoliyati bilan uzviy bog'langanligi bejiz emas. Qaysi rahbarni buyuk deb hisoblash mumkin, degan savolga turli mamlakatlarda eng avvalo o'z xalqiga ozodlik va mustaqillik olib kelganlarning nomini aytadilar. AQSh fuqarolari prezidentlarni Jorj Vashington va A. Linkoln, britaniyaliklar – Bosh vazir V. Cherchill, fransuzlar – Prezident Sharl de Goll deb atashadi. Janubiy Amerikada esa ko'plab Lotin Amerikasi siyosatchilarining buti, afsonasi, ustoz S. Bolivardir<sup>3</sup>. (Mashhur Britaniya jamoat arbobi E. Pauell bayonotining qat'iyligi shubhali bo'lib, u har qanday, hatto eng yorqin siyosiy martaba oxirida hokimiyatni tark etish muqarrarligiga ishora qilib, shunday degan edi: "Barcha siyosiy hayot, agar ular parvoz paytida uzilib, muvaffaqiyatsiz tugaydi. Bu siyosat va inson tabiatining mohiyatidir.") Biroq, etakchilikning mavjud "nazariyalari" bu

hodisaning mohiyati haqida to'liq tasavvurga ega emasligini tan olmay bo'lmaydi. bugungi kunda siyosiy rahbarlikda sodir bo'layotgan o'zgarishlarni to'liq aks ettirmaydi. Siyosiy yetakchilar o'z mamlakatlaridagi ichki siyosatni umumjahon, global jarayonning bir qismi sifatida ko'rib chiqishga majbur bo'lib, o'z sa'y-harakatlarini tobora ko'proq ijtimoiy-iqtisodiy muammolarni hal qilishga jamlashlari kerak. Bu, ayniqsa, butun dunyoda ijtimoiy adolatga talab ortib borayotganligi sababli dolzarbdir. Siyosiy yetakchilarni tayyorlashning ahamiyati ortib bormoqda, ularning ongliligi va bilim darajasi tobora muhim rol o'ynamoqda. Tez o'zgaruvchan vaziyatlar, jadal ijtimoiy rivojlanish va yangi muammolar paydo bo'lishi sharoitida har qachongidan ham ko'proq ijtimoiy hayotning turli sohalarda - iqtisodiy, siyosiy, ijtimoiy-madaniy sohalarda ko'p ma'lumotlarga ega bo'lishlari kerak. Rahbarlarning "kelajak qiyofasini" yaratish qobiliyati katta ahamiyatga ega, ya'ni. "ko'rish" 5. Faqat shart-sharoit va voqelikni hisobga olgan holda o'zgartirishga qodir, bilim va yuqori kasbiy mahoratga ega, mas'uliyat va halollikni namoyon eta oladigan, xodimlarning ishonchi va e'tirofini uyg'otadigan yetakchilargina samarali bo'lishi mumkin. Aynan mana shu fazilatlar bugungi kunda kamchiligi juda keskin sezilib, yetakchilik va yetakchilarga nisbatan tubdan yangi yondashuvlarni shakllantirishni zudlik bilan taqozo etmoqda. Bularning barchasi "zamonaviy voqelikka adekvat bo'lgan prinsipial yangi yetakchilik paradigmasini tushunish va topish" zarurligini yaqqol ko'rsatib turibdi 6. Siyosiy lider va xodimlar: tushunchalarga oydinlik kiritish Garchi liderlik fenomeni uzoq vaqtdan beri mavjud bo'lsa-da, "rahbar" atamasining o'zi faqat 19-asr oxirida paydo bo'lgan. Bu atama odatda kuch, ta'sir va hokimiyatga ega bo'lgan shaxsni belgilash uchun ishlatiladi. Ilmiy adabiyotlarda turli tadqiqot pozitsiyalaridan kelib chiqqan holda siyosiy etakchilikning ko'plab ta'riflari mavjud. Amerikalik tadqiqotchi B.M. ta'kidlaydi: "Etakchilikka ta'rif berishga harakat qilganlar qancha bo'lsa, shuncha ta'riflar mavjud". 7. Etakchilik guruh jarayonlarining markazi, hokimiyat munosabatlari, ta'sir ko'rsatish, tadbirkorlikning alohida turi va boshqalar sifatida qaraladi. Siyosiy yetakchilik faoliyati hokimiyat va o'zaro ta'sir munosabatlarini amalga oshirishga, yetakchi va xodim munosabatlarining murakkab mexanizmiga asoslanadi. Siyosiy etakchilikni siyosiy hokimiyatni amalga oshirish mexanizmi sifatida ta'riflash mumkin, u rahbarning ijtimoiy hamjamiyat/jamiyat manfaatlarini va ehtiyojlarini ifodalovchi va xodimlari o'rtasidagi o'zaro ta'sir munosabatlariga asoslanadi, unga o'z vakolatlarini amalga oshirish uchun topshiradi. manfaatlarini ifodalaydi va amalga oshiradi. Ushbu o'zaro ta'sir davomida hokimiyat va ta'sirning qonuniy mexanizmlari orqali ijtimoiy hamjamiyat/jamiyatning integratsiyalashuvi jarayoni amalga oshiriladi.

Rahbarning muhim xususiyati uning ta'sir qilish qobiliyatidir. Ta'sir munosabatlarning asosi (bu tushuncha, ma'lumki, "hokimiyat" tushunchasidan kengroqdir) ijtimoiy hamjamiyat/jamiyat a'zolarining ixtiyoriy roziligidir. Bunday munosabatlar shaxsiy namuna, ishontirish va rahbarning obro'si orqali amalga oshiriladi. Boshqacha qilib aytadigan bo'lsak, etakchilik zo'ravonlik yoki boshqa bostirishga emas, balki rahbarning qo'llab-quvvatlashiga, umumiy maqsadlarga erishish uchun xodimlarni safarbar qilish qobiliyatiga asoslangan hokimiyatni amalga oshirish usulidir. Biroq, yigirmanchi asr davomida. dunyo dahshatli kataklizmlarni boshdan kechirdi. Turli mamlakatlarda o'nlab yillar davomida totalitar va avtoritar rejimlar o'rnatildi va amalda bo'ldi, ularda siyosiy rahbarlar (rahbarlar) uzoq o'tmishdagi despotlarning qilmishlaridan ham ortiq shafqatsizlik ko'rsatdilar. Ular milliy va mafkuraviy g'oyalar ortiga uyalmasdan yashirinib, hokimiyatga bo'lgan nafs va adabiy g'oyalar qurbongohida millionlab insonlarning hayotini qurbon qildilar. S.E. ta'kidlaganidek. Lec, "diktatorlar kuchga ega emas, ular zo'ravonlikka ega". Ba'zi tadqiqotchilar (masalan, J. Adair, L. Stout) "hokimiyat mavqeini saqlab qolish uchun asossiz boshqaruv choralarini qo'llagan" siyosatchilarni siyosiy lider deb hisoblash mumkin emas, deb ta'kidlaydilar

8. Amerikalik tadqiqotchi B.Kellerman bunday siyosatchilar faoliyatini tavsiflash uchun "yomon rahbarlik" 9 tushunchasidan foydalanadi. Rahbarlar o'z-o'zidan mavjud emas, ularning xodimlari bo'lishi kerak, ya'ni. boshqalarga rahbarlik qilish huquqini tan olganlar. Siyosiy etakchilikning faoliyati sub'ekt-sub'ekt jarayon bo'lib, bu jarayonda yetakchilar ham, ularning xodimlari ham muhim rol o'ynaydi. Agar xodimlar ularga ishonishga tayyor bo'lmasa, rahbarlar o'z kuchini saqlab qololmaydilar. Biroq yaqin vaqtlargacha siyosiy yetakchilik haqidagi tadqiqotlarda yetakchilarning siyosiy jarayondagi roli, ularning shaxsiy xususiyatlarini tahlil qilish, nomzodlarni ilgari surish, hokimiyat va ta'sir ko'rsatish usullariga ko'proq e'tibor qaratildi. Ammo uning ishlashida xodimlarning roliga bag'ishlangan ish juda kam. Ayni paytda, 20-21-asrlar oxirida dunyoda sodir bo'layotgan voqealar. o'zgarishlar - globallashuv, "global siyosiy uyg'onish" (Z.Bjezinski), yangi ommaviy kommunikatsiya vositalarining paydo bo'lishi va boshqalar - liderga asoslangan yondashuvni qayta ko'rib chiqishni taqozo etadi.

Xitoy tushunchalari. Bir qator mualliflarning asarlarida izdoshlar rolining ortib borishi rahbarlar faoliyati uchun yanada murakkab shart-sharoit yaratib, ularning shaxsiy fazilatlarini va siyosiy faoliyatiga talabni kuchaytirayotganini ishonchli ko'rsatib turibdi. Siyosiy liderlar pozitsiyalarining zaifligi ortib bormoqda, zamonaviy axborot jamiyatida ular "doimiy ravishda jamoatchilik muhokamasi markazida bo'lib, ularga tobora ko'proq tanqidiy munosabatda bo'lmoqdalar"

10. Germaniya fuqarolari tomonidan kansler Angela Merkel faoliyati va uning muhojirlarga nisbatan siyosatiga

berilgan bahoni misol tariqasida keltirish kifoya. "Xodim" tushunchasining o'zi ham tushuntirishga muhtoj. Ba'zi tadqiqotchilar uning biroz haqoratli ma'noga ega ekanligiga ishonishadi va uni ishlatmaslikka harakat qilishadi. Amerikalik muallif J. Gardner: "Xodim" so'zining ma'nosi passivlik va qaramlikning o'ta kuchli tuslariga ega bo'lib, uni yetakchilar bilan muloqotda bo'lganlarni belgilash uchun yaxshi atama deb hisoblaydi" 11. J. Gardner kontseptsiyani afzal ko'radi "ta'sis" (inglizcha). "Ta'sischi" so'zini rus tiliga "element", "tizim komponenti", "saylovchi" deb tarjima qilish mumkin. Hozirgi vaqtda "xodim" va "ta'sis" tushunchalari ko'pincha ingliz tilidagi (va mahalliy) ilmiy adabiyotlarda ekvivalent sifatida qo'llaniladi. Amerikalik tadqiqotchi R.Kelli esa "xodim" tushunchasi bilan bir qatorda "kuzatish" (kuzatish, topshirish) atamasiga qonuniylik berishga intiladi

12. Xodimlariga ega bo'lish - bu liderlarni etakchi bo'lmaganlardan aniq ajratib turadigan narsa. Xodimlar bilan aloqa vositachilik institutlari, ommaviy axborot vositalari va aloqalar orqali amalga oshiriladi. O'zaro munosabatlarning bunday dinamik tabiati samarali bo'lishi uchun rahbarlar o'z xodimlarining turli guruhlariga haqida iloji boricha ko'proq bilishlari kerak. AQSHning 28-prezidenti Uilyam Uilson aytganidek, "xalq ovozi yetakchining qulog'ida jaranglashi kerak". Rahbarlar o'z manfaatlarini ifoda etgan ijtimoiy hamjamiyatlarning so'rovlariga o'z vaqtida javob berishga chaqiriladi. Bundan tashqari, yetakchilar faoliyati chegaralarini nafaqat xodimlar, balki teng darajali yetakchilar ham "belgilaydi", bu ayniqsa globallashtirish sharoitida milliy yetakchilar faoliyatida seziladi.

Tadqiqotchilar va oddiy fuqarolar rahbarlarning salbiy fazilatlarini (hokimiyatni suiiste'mol qilish, adolatsizlik, voqealar rivojini oldindan ko'ra olmaslik va hokazo) va ularning oqibatlariga katta e'tibor berishadi. Lekin siyosiy yetakchilik samaradorligiga xodimlarning kamchiliklari - ularning passivligi, mamlakat ijtimoiy-siyosiy hayotida qatnashishni istamasligi muqarrar. Faoliyat va qo'llab-quvvatlash darajasiga ko'ra, rahbarning xodimlarini bir necha toifalarga bo'lish mumkin: oddiy fuqarolar, faollar va qizg'in xodimlar. Siyosiy rahbarlar va xodimlarning o'zaro ta'sir mexanizmi, ikkinchisi bir qarashda qarama-qarshi ko'rinadigan xususiyatlarni - faollik va shu bilan birga o'ziga xos "passivlik" ni birlashtiradi deb taxmin qiladi; siyosiy sohadan tashqarida turli jarayonlarda ishtirok etishi bilan muvozanatlashgan siyosiy jarayonga aralashish; mantiqiylik va shu bilan birga siyosiy rahbarlar va hokimiyatga hissiy bog'liqlik, buning asosida fuqarolarning birligi yuzaga keladi.

Rahbarlik quyi tizimi bir ma'noli hukumat qarorlarining qabul qilinishini ta'minlaydi, ularning bajarilishi uchun javobgarlikni siyosiy rahbariyat vakillariga yuklaydi. Etarli darajadagi siyosiy kapitalga, muayyan jamoa (partiya, harakat, mintaqa, mamlakat) miqyosida qaror qabul qilish jarayonida vakolatlariga ega bo'lish

va hokimiyatning mavjudligi siyosiy rahbarga kun tartibini belgilash va muayyan siyosiy yo'nalishni amalga oshirish imkonini beradi. chiziq. Prezidentlik respublikalarida siyosiy liderlarning roli ayniqsa katta, chunki ular davlat faoliyatining asosiy yo'nalishlarini nazorat qiladi va hokimiyat tarkibiy qismi ustidan nazoratni saqlab qoladi. Davlat boshqaruvi tuzilmasi rasmiy tartibga solingan va har doim ham muammolarga o'z vaqtida javob berishga qodir emas. Rahbarlar orasida jamiyat uchun muhim bo'lgan qarorlarni yakka o'zi qabul qilish uchun ba'zan ommaviy munozaralar va jamoaviy muhokamalarga e'tibor bermay, real imkoniyat mavjud. Biroq, bu erda ham jiddiy muammolar mavjud. Rahbarlar ko'pincha jamoat muammolaridan jamiyatga kerak bo'lgan muammolarni emas, balki ularga ovoz beradigan muammolarni tanlaydilar. "Rahbarlar hukumatning harakatlari tizimiga qo'shimcha nomuvofiqlik, munosabatni o'zgartirish, oldingi majburiyatlardan voz kechish, ritorika va amaliy harakatlar o'rtasidagi nomuvofiqlikni keltirib chiqaradi", deb ta'kidlaydi A.I. Solovyov. "Shunday qilib, yetakchilik quyi tizimi nafaqat davlat boshqaruvi tizimining tarkibiy kamchiliklarini kamaytiradi, balki qarorlar qabul qilish xavfini ham oshiradi". 40. Harakatlarning nomuvofiqligi, oldingi majburiyatlardan voz kechish, albatta, jamiyatda rahbarlarga, umuman, siyosiy hokimiyatga nisbatan ishonchsizlikni keltirib chiqaradi, jamiyatning birlashishiga to'sqinlik qiladi. Zamonaviy dunyoda rahbarlar oldida turgan vazifalarning hajmi va murakkabligi shunchalik kattaki, ular o'z vazifalarini yolg'iz bajara olmaydilar. Rahbarlar o'zlarining boshqaruv faoliyatini juda keng doiradagi maslahatchilar va yordamchilar bilan bo'lishadi. Milliy darajadagi siyosiy liderlar, qoida tariqasida, o'zlarining yaqin doiralarini tanlash va shakllantirishda keng imkoniyatlarga ega. Biroq, ular har doim ham xodimlarning malakasi va tajribasi mezonlariga amal qilmaydi, ba'zida rahbarga sodiqlik omili birinchi o'ringa chiqadi. Ko'p narsa rahbarning jamoa a'zolarining malakasi va unga bo'lgan sadoqati o'rtasidagi muvozanatni topa olish qobiliyatiga bog'liq. Rahbar va uning jamoasi o'rtasidagi ishonchning yuqori darajasi va uning hamjihatligi ko'p jihatdan etakchilik faoliyatining muvaffaqiyatini belgilaydigan ijtimoiy qatlamlar manfaatlarini hisobga olishni, jamiyatda murosas va konsensusga erishishni, uni muvaffaqiyatli rivojlantirishni talab qiladi.

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## YO‘L BELGILARINING HARAKAT XAVFSIZLIGI KO‘RSATGICHLARIGA TA‘SIRI

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**Kirish.** Respublikamizdagi hozirgi ijtimoiy-iqtisodiy va siyosiy rivojlanishda avtomobilsozlik sanoati va transport tizimining rivojlanishi hamda transport infratuzilmaning eng muhim yo‘nalishlaridan biri magistral avtomobil yo‘llari tarmog‘ini rivojlantirish bo‘lib, bu yo‘llardan yaqin va uzoq davlatlar bilan tranzit aloqalarni amalga oshirishdir. Avtomobil yo‘llarida harakat xavfsizligini tashkil etish bugungi kundagi muhim muammolardan biriga aylanib bormoqda. Avtomobilning atrof-muhitga etkazadigan zararlari miqdori kundan-kunga oshib bormoqda, eng asosiysi esa, yo‘llarda sodir etilayotgan yo‘l-transport hodisalari natijasida ko‘plab odamlarning jabr ko‘rishlari va hayotdan ko‘z yumishlaridir. Yo‘l-transport hodisalarining oldini olish uchun ko‘rilayotgan qator tadbirlarga qaramasdan, ularning miqdori kamayishiga erishib bo‘lmayapti. Bu esa, yo‘l harakati xavfsizligi muammolariga o‘ta jiddiy yondoshish zarur ekanligini mutaxassislar oldiga vazifa qilib qo‘ymoqda. Harakat xavfsizligini ta‘minlash uchun unga ilmiy yondoshish, uning barcha serqirra jarayonlarini tahlil etish zarur. Buning uchun yo‘l harakati xavfsizligi bo‘yicha mutaxassislar yo‘l harakatining asosiy ko‘rsatkichlarini, yo‘llardagi sharoitlarning transport oqimlari harakatlariga qanday ta‘sir ko‘rsatishlarini, transport oqimlarini boshqarishning texnik vositalari orqali yo‘l harakatini boshqarish bo‘yicha bilimlarga ega bo‘lishlari zarur.

**Tatqiqot masalalari.** Yo‘l harakatini tashkil etish transport vositalari oqimini maksimal darajada yo‘lning geometrik o‘lcham imkoniyatlaridan foydalanib, uning har xil bo‘laklarida xavfsiz harakat rejimini va yuqori o‘tkazish qobiliyatini ta‘minlashga qaratilgan tadbirlar tizimidan iborat. Yo‘l harakatini tashkil etish tamoyillari transport oqimini to‘g‘ri yunaltirishga, kerak xollarda ularni tezliklar bo‘yicha guruhlariga ajratishga, har bir yo‘l bo‘lagi uchun ratsional tezliklarni belgilashga, haydovchilarga o‘z vaqtida harakat marshruti va yo‘l sharoiti to‘g‘risida axborot berishga qaratilgan.



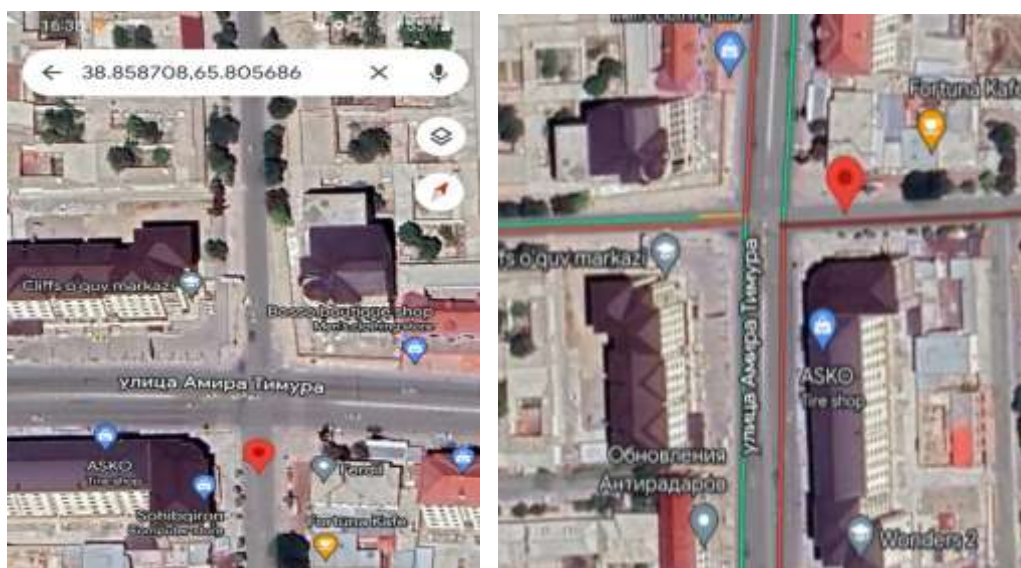
Yo‘l harakatini tashkil qilishning asosiy maqsadi deb har xil transport vositalarini yuqori tezlik bilan yo‘lning turli bo‘lagidan yilning har qanday ob-havo sharoitlarida xavfsiz o‘tkazish tushuniladi.

Harakatni tashkil etishning asosiy vazifalari quyidagilardan iborat:

- transport vositalarining harakat tartibini belgilash va ta‘minlash;
- avtomobillarning yuqori samaradorlik bilan ishlashini har qanday ob-havo sharoitida ta‘minlash va eng yaxshi yo‘l sharoitlarini vujudga keltirish;
- harakat xavfsizligini yo‘lning har qanday bo‘lagida va turli ob-havo sharoitlarida ta‘minlash;
- atrof - muhitni bulg‘atmaslik;

transport vositalarining va yo‘l inshootlarining tez ishdan chiqmasligini ta‘minlash.

Qarshi shahri Amir Temur-Ko‘chabog‘ ko‘chasida harakat xavfsizligini ta‘minlash tadbirlari doirasida chorraxa infratuzilmasi ko‘rsatgichlari tahlil qilib chiqildi.



**1-rasm.** Qarshi shahri Amir Temur-Ko‘chabog‘ chorrahasining yuqoridan ko‘rinishi

Qarshi shahri Amir Temur-Ko‘chabog‘ chorrahasida tig‘iz paytlarda harakat jadalligi o‘ta yuqori hisoblanadi. Shuning uchun chorrhada harakatlanish ushbu paytlarda tirbandlikni keltirib chiqaradi. Xronometraj ma‘lumotlariga ko‘ra ish kunlari tig‘iz paytlarida Amir Temur ko‘chasida harakat jadalligi soatiga 1800 ta avtomobilni tashkil qilsa, Ko‘chabog‘ ko‘chasida soatiga 950 avtomobilni tashkil qiladi.



## 2-rasm. Qarshi shahri Amir Temur ko‘chasi – Ko‘chabog‘ ko‘chasida yo‘l belgilarini o‘rnatilishi.

Yo‘l belgilari past darajadagi harakat xavfsizligiga ta’siri bo‘yicha quyidagicha bo‘lishi mumkin.

Past darajadagi harakat xavfsizligiga sabab bo‘ladigan avtomobillar harakatini uchta o‘ziga xos xususiyatlarini ko‘rsatish mumkin.

1. Avtomobil transportining o‘z ko‘rsatkichlariga ko‘ra mos keladigan avtomobil-transport foydalanish ko‘rsatkichlariga ega bo‘lgan avtomobil yo‘llari bilan etarli darajada ta’minlanmaganligi.

2. Avtomobillar harakatining yo‘l harakati boshqa qatnashchilaridan etarli darajada ajratilmaganligi va piyodalar harakatlanish madaniyatining pastligi.

3. Haydovchilik kasbining ommaviyligi va ular orasida past malakali va kam ko‘nikmaga ega bo‘lgan havaskor haydovchilarning ko‘pligi.

Yo‘l harakati xavfsizligi to‘g‘risidagi qonunda quyidagi asosiy tushunchalar qabul qilingan:

**Yo‘l** – transport vositalari qatnovi uchun ko‘rilgan yoki moslashtirilgan va xuddi shu maqsadda foydalanishga er mintaqasi yoxud sun’iy inshoot yuzasi;

**Yo‘l harakati** – odamlar va yuklarni transport vositalari yordamida yoki bunday vositalarsiz yo‘llar doirasida harakatlanishi jarayonida yuzaga keluvchi munosabatlar majmui;

**Yo‘l harakati katnashchisi** – yo‘l harakati jarayonida transport vositasining haydovchisi, yo‘lovchisi yoki piyoda tariqasida bevosita ishtirok etayotgan shaxs;

**Yo‘l harakati xavfsizligi** – yo‘l harakati katnashchilarning yo‘l – transport hodisalari va ularning oqibatlaridan himoyalanganlik darajasini aks ettiruvchi yo‘l harakati holati;

**Yo‘l – transport hodisasi** – transport vositasining yo‘ldagi qatnovi jarayonida sodir bo‘lib, fuqarolarning o‘limi yoki ularning sog‘lig‘iga zarar etishiga, transport vositalariga, inshootlar, yuklar shikastlanishiga yoki boshqa tarzda moddiy zarar etkazilishiga sabab bo‘lgan hodisa:

**Yo‘l harakati xavfsizligini ta‘minlash** - yo‘l - transport hodisa-larining yuzaga kelish sabablarini oldini olishga, bunday hodisalar oqibatlarining og‘irligini engillashtirishga qaratilgan faoliyat;

**Transport vositasi** – odamlarni, yuklarni tashishga yoki maxsus ishlarni bajarishga mo‘ljallangan qurilma.

O‘zbekiston Respublikasi hududida harakatlanish xavfsizligini ta‘minlash yo‘l transport hodisalarning oldini olish va bu borada yagona davlat siyosatini yuritish, yo‘l harakati koidalarini xalkaro «Yo‘l harakati haqidagi» konventsiya talablariga muvofiqlashtirish maqsadida hamda «Yo‘l harakati xavsizligi» to‘g‘risidagi qonunning 5-moddasiga asosan vazirlar mahkamasi muntazam ravishda «Yo‘l harakati qoidalari» ni ko‘rib chiqib, takomillashtirilgan variantini tasdiqlaydi. Hozirgi O‘zbekiston Respublikasi Vazirlar Mahkamasining 2000 yil 11 dekabr 472-sonli qaroriga asosan «Yo‘l harakati qoidalari» 2001 yil 1 martdan e‘tiboran amalga kiritildi.

«Yo‘l harakati qoidalari» asosida vazirliklar, davlat qo‘mitalari, korporatsiyalar, uyushmalar, kontsernlr va boshka tashkilotlar va muassasalar, Qoraqalpog‘iston Respublikasi Vazirlar kengashi, viloyatlar, shaharlar, xokimliklar yo‘l harakatini tashkil etishi bilan bog‘lik bo‘lgan barcha ishlarni amalga oshirish chora-tadbirlarni belgilaydilar hamda u yo‘l harakati tartiblarini belgilovchi asosiy hujjat bo‘lib hisoblanadi.



**3-rasm. Amir Temur ko‘chasida joylashgan avtobekatning ko‘rinishi**

Xavfsiz harakatni tashkil etishda transport va piyodalar harakatini tavsiflovchi ko'rsatkichlarni tadqiq qilish birinchi navbatdagi vazifa hisoblanadi. Quyida ular to'g'risidagi asosiy tushunchalarga to'xtalib o'tamiz.

Harakat miqdori (jadalligi) - yo'lning biron-bir ko'ndalang kesimidan vaqt birligi ichida o'tgan transport vositalarining soni (avt/sut yoki avt/soat) - bu ko'rsatkich kuzatish va avtomatik usullar bilan o'lchanishi mumkin.

Kuzatish (viziual ham deyiladi) usulida harakat miqdori yo'lning ko'rsatilgan bo'lagida bir yoki bir necha soat davomida hisobchilar yordamida maxsus tayyorlangan blankaga transport vositalarining o'tishini belgilash orqali aniqlanadi. Bu usuldan foydalanilganda soha me'yoriy ko'rsatmalariga amal qilinishi maqsadga muvofiq bo'ladi. Ko'pchilik davlatlarda, shuningdek, O'zbekistonda ham avtomobil yo'llaridagi harakat miqdorini kuzatuvchilar orqali aniqlanadi.

Avtomatik usulda harakat miqdori har xil uslubda ishlaydigan datchiklar yordamida hisoblanadi. Hozirda bu maqsad uchun quyidagi keng tarqalgan datchiklar ishlatiladi: Pnevmatik; fotoelektrik; ultratovush; mexanik; radiolakatsion; induktiv; elektron; infraqizil nurli.

O'zbekiston Respublikasi umum foydalanuvdagi avtomobil yo'llarida elektron ko'p kanallik schetchiklar ASD-5 va uning modifikatsiyalaridan foydalanilgan (engil va og'ir yuk avtomobillarini alohida-alohida hisoblash mumkin).

Harakat tarkibi - transport oqimida har xil transport vositalarining nisbatini belgilovchi ko'rsatkich bo'lib, u foizda yoki ulushda o'lchanadi. Bu ko'rsatkich transport oqimining tezligiga va zichligiga katta ta'sir ko'rsatadi.

SHahar ko'chalarida harakat tarkibining o'zgarishi quyidagicha: engil avtomobillar 60-80 %; avtobuslar 5-15 %; trolleybuslar 5-10 %; yuk avtomobillari 9-15 %.

SHahar tashqarisidagi umum foydalanuvdagi avtomobil yo'llarida harakat tarkibi quyidagi qiymatlarga ega bo'lishi kuzatiladi: engil avtomobillar 30-60 %; avtobuslar 2-5 %; yuk avtomobillari 30-40 %; avtopoezdlar 5-8 %; traktor va qishloq xo'jalik mashinalari 5-10 %. Umuman olganda harakat tarkibining o'zgarishi avtomobil yo'lining xalq xo'jaligida tutgan ahamiyatiga bog'liq, masalan, qishloq xo'jaligidagi ichki yo'llarda yuk va traktor mashinalari katta miqdorda bo'lsa, shahar yo'llarida uning aksidir. Harakat tarkibini avvalgi ko'rsatkichga o'xshab kuzatish yoki avtomatik usullar yordamida aniqlanadi.

Harakat oqimining tezligi - yo'l bo'laklari bo'yicha har xil transport vositalarining tezligini alohida va umuman o'zgarishini ko'rsatuvchi ko'rsatkich, o'lchov birligi m/s yoki km/soat.

Maqsad va vazifalariga qarab tezlik (hisobiy, oniy, aloqa, konstruktiv, texnik tezlik) quyidagi turlarga bo‘linadi:

Hisobiy tezlik - yakka avtomobillarning (xavfsizlik va ustuvorlik sharti bo‘yicha) ob-havoning muqim sharoitida, avtomobil shinasining yo‘l qatnov qismi yuzasi bilan me‘yoriy tishlashish holatida, yo‘lning eng noqulay ruxsat etilgan elementlariga ega bo‘laklarida mumkin bo‘lgan eng katta tezlikdagi harakatiga aytiladi. Bu tezlik bo‘yicha yo‘lning rejadagi, bo‘ylanma va ko‘ndalang kesimdagi barcha geometrik elementlari loyihalangani. Hisobiy tezlik avtomobil yo‘llarining darajasiga qarab SHNQ 2.05.02-07 ko‘rsatmalariga asosan 2.1-jadvaldagi qiymatlar bo‘yicha belgilanadi.

Oniy tezlik - aniq kichik masofadagi real yo‘l sharoitidagi haqiqiy tezlik. U yakka avtomobillarning yoki transport oqimining u yoki bu belgilangan qisqa masofadagi (odatda masofa 50, 100, 150, 200 metr belgilanadi) tezligini bildiradi. Bu tezlikdan ma‘lum yo‘l bo‘laklarida harakatni tashkil qilishda keng ko‘lamda foydalaniladi.

1.-jadval

Avtomobil yo‘lining darajasi		Ia	Ib	II	III	IV	V
Hisobiy tezlik, km/soat	Asosiy	150	120	120	100	80	60
	Past-baland	120	100	100	80	60	40
	Tog‘li joylar uchun	80	60	60	50	40	30

Aloqa tezligi - ma‘lum marshrutdagi ushlanib qolishlar (bir sathli chorrahalar, temir yo‘l pereezdlari, qoplamaning notekis bo‘laklari mavjudligidan hamda transport oqimidagi avtomobillarning o‘zaro ta‘siri natijasida) hisobiy aniqlanadigan tezlik. Bu tezlik harakatlanuvchi laboratoriya yordamida bir necha marotaba real marshrut uzunasi bo‘yicha harakat tezligini o‘lchash orqali topiladi. Aloqa tezligi avtomobil yo‘lining transport inshooti sifatida qanday ishlashini belgilovchi asosiy ko‘rsatkich sifatida yuritiladi.

*Avtomobilning konstruktiv tezligi* - ma‘lum konstruksiyali avtomobilning maksimal tezligi, u asosan avtomobilning turiga bog‘liq ravishda o‘zgaradi, masalan, o‘rta va kichik litrajli engil avtomobillar 200÷260 km/soat; kichik litrajli engil avtomobillar 150÷200 km/soat; kichik yuk ko‘taruvchi avtomobillar 100÷120 km/soat va h.k. ni tashkil etadi.

*Texnik tezlik* - ma‘lum marshrutdagi ushlanib qolishlarni hisobga olmagan ravishda aniqlangan harakat tezligi, uning qiymati asosan avtomobil yo‘lining

geometrik o'lchamlariga va yo'l sharoitiga, shuningdek, transport oqimining tarkibiga bog'liq.

Transport harakatini tavsiflovchi keyingi ko'rsatkich bu *transport oqimining zichligi* - transport vositalarining 1 km uzunlikdagi bitta harakat polosasiga joylashgan soni bilan o'lchanadi ( $q$  - km/dona). Bu ko'rsatkich harakat tarkibiga, uning tezligiga va yo'l sharoitiga nisbatan o'zgaradi. Engil avtomobillardan iborat maksimal transport oqimining zichligi  $q_{\max} = 200$  avt/km, bunda  $V=0$  km/soat; shu transport oqimining optimal zichligi  $q_{\text{onm}} = 15-25$  avt/km tashkil etadi.

Harakatning ushlanishi - yo'l uchastkasida hisobiy tezlikka nisbatan transport vositalari tezligining pasayishi tushuniladi, uni m/s yoki km/soatda, shuningdek, sekund miqdorida ham aniqlash mumkin.

Piyodalar harakatini tavsiflovchi ko'rsatkichlar ham asosan harakat miqdori, tezlik va zichlik orqali belgilanadi va fizik jihatdan avval keltirilgan birliklarda o'lchanadi.

Piyodalarning harakat miqdori - ma'lum yo'l kesimidan vaqt birligi ichida o'tgan piyodalar soni bilan o'lchanadi. Piyodalar harakat miqdori o'zgaruvchan ko'rsatkich bo'lib, u oylar, hafta kunlari va sutka soatlari ichida yo'nalishlar bo'yicha o'zgarib turadi hamda ko'chani ahamiyatiga bog'liq. Masalan, yirik shaharlarning markaziy ko'chalarida  $5 \div 6$  ming piyoda/soat miqdorida kuzatilsa, tuman ko'chalarida esa  $50 \div 150$  piyoda/soatni tashkil etadi.



**4-rasm. Ko'chabog' ko'chasidagi avtobekatning ko'rinishi.**

Piyodalar oqimining zichligi bir metr kvadrat trotuar maydoniga to'g'ri keladigan qiymat bilan aniqlanadi. Piyodalar oqimining zichligi trotuarning eniga va piyodalarning harakat miqdoriga to'g'ridan-to'g'ri bog'liq bo'lib, ularning nisbati piyodalarning harakatlanish qulayligini belgilaydi.

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## AVTOMOBIL ILASHISH MUFTALARIGA TUSHADIGAN YUKLANISHLARNI HISOBLASH METODLARINI O'RGANISH

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### ANNOTATSIYA

*Avtomobil uzul va agregatlarining vazifasiga ko'ra ularga qator talablarni qo'yish mumkin, shu talablarni bajarilishi ularni boshqa agregatlar bilan birga ishlaganda funksional vazifasini to'liq bajarilishini ta'minlaydi. Qo'yiladigan talablarni bir necha konstruktiv echimlari bilan qondirish mumkin, lekin bunda konstruktiviyalarning murakkabligi, narxi, chidamliligi va hokozolar ham har xil bo'ladi.*

**Kalit so'zlar:** Hisoblash rejimi, zahira koeffitsiyenti, disklar, ilashish muftalari, yuklanish rejimlari, konstruktiviyalar.

## STUDY OF METHODS OF CALCULATING LOADS ON VEHICLE COUPLINGS

### ABSTRACT

*According to the function of car units and aggregates, a number of requirements can be imposed on them, the fulfillment of these requirements ensures that they will fully fulfill their functional tasks when working together with other aggregates. The requirements can be met with several structural solutions, but the complexity, cost, durability and cost of the structures will also be different.*

**Keywords:** Calculation mode, reserve factor, discs, couplings, load modes, constructions.

### KIRISH

Ma'lumki, avtomobil harakatlanishi uchun dvigatel validan hosil bo'layotgan burovchi moment oshiqcha tebranishlarsiz muttasil ravishda yetakchi g'ildiraklarga uzatilishi lozim. Buning uchun avtomobilning o'rnidan ravon (silintirilmasdan) qo'zg'alishini, dvigatelning validan yetakchi g'ildiraklarga uzatilayotgan burovchi momentning qiymatini sekin - asta uzluksiz ko'paytirishni ta'minlash kerak bo'ladi. Aks holda burovchi momentni muttasil uzatish jarayoni yo'qoladi. Bundan tashqari, avtomobil turli yo'l sharoitida yurganda uning yetakchi g'ildiraklarga uzatilayotgan burovchi momentning qiymatini sekin - asta uzluksiz ko'paytirishini ta'minlash kerak bo'ladi. Agarda bu jarayon bajarilmasa, kuchning kattaligini o'zgartirish va uni uzatish qiyinlashadi va dvigatel o'chib qolishi mumkin. Bu vazifalarni bevosita va uzluksiz bajarish uchun dvigatel bilan kuch uzatmani kerakli paytda birga ilashtiruvchi yoki ajratib qo'yuvchi tuzilma - ilashish muftasi kerak bo'ladi.



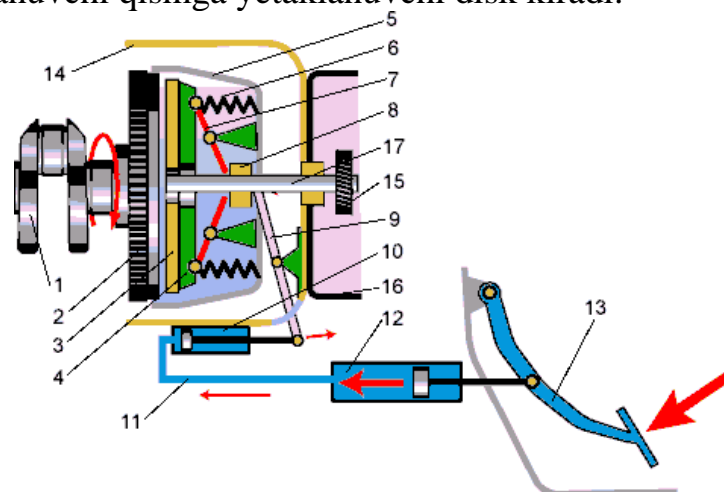
**Muhokama.** Ilashish muftasi uzatmalarni almashtirishda kuch uzatmani dvigatelning tirsakli validan qisqa muddatga vaqtincha ajratish va ravon qo‘shish vazifasini bajaradi. Bundan tashqari, ilashish muftasi kuch uzatma detallarini dvigatelning har bir maromda ishlashi natijasida sodir bo‘luvchi oshiqcha kuchlanishlardan saqlab, ularning ishonchli ishlashini ta‘mirlaydi. Ilashish muftasi yetaklovchi va yetaklanuvchi qismlardan tashkil topgan bo‘lib, dvigatel ishlaganda, yetaklovchi qismi doimo tirsakli val bilan aylanadi, yetaklanuvchi qismi esa ilashish muftasi dvigateldan ajratilishi bilan oq aylanishdan to‘xtaydi. Yetaklovchi va yetaklanuvchi qismlarning ulanish vositasiga ko‘ra friksion ilashish muftasi ishlatilib, ular dvigatellarda burovchi momentni uzatmalar qutisiga o‘zaro ishqalanuvchi - yetakchi, yetaklanuvchi disklar yordamida uzatadi.

Yuqoridagi ma‘lumotlardan kelib chiqadigan bo‘lsak, ilashish muftasi quyidagi funksional vazifalarni bajaradi:

Dvigatel tirsakli valini uzatmalar qutisidan vaqtincha ajratish va ravon ulash.

Bu esa:

- Avtomobilning ravon qo‘zg‘alishini ta‘minlaydi;
- Detallardagi yuklanishlarni oshirmay, pog‘onalarni almashtirishni ta‘minlaydi;
- Dvigatelni o‘chirmay turib avtomobilni to‘xtatish imkonini beradi.
- Ilashish muftasi yetaklovchi va yetaklanuvchi qismlardan tashkil topgan;
- Yetaklovchi qismga tirsakli val bilan bog‘langan (doimo aylanuvchi) detallar kiradi.
- Yetaklanuvchi qismga yetaklanuvchi disk kiradi.



**1-rasm. Friksion ilashish muftasi sxemasi.**

1-tirsakli val, 2-maxovik, 3-yetaklanuvchi disk, 4-siquvchi disk, 5-g‘ilof, 6-ilashish muftasini ulash prujinalari, 7-richaglar, 8-podshipnikli ajratish muftasi, 9-vilka, 10-ishchi silindr, 11-truba, 12-asosiy silindr, 13-pedal, 14-ilashish muftasining karteri, 15-birlamchi tishli g‘ildirak, 16-uzatmalar qutisining karteri, 17-uzatmalar qutisining birlamchi vali.

Hisoblash rejimi bu detallarni mustaxkamlikka va chidamlilikka hisoblash uchun qabul qilingan real yoki shartli yuklanish rejimi. Hisoblash rejimi yuklanish rejimini taxlil etish natijasida tanlab olinadi. Detallarni chidamkorlikka hisoblaganda o'zgaruvchan kuchlar ta'sirida detalning sinishi aniqlanadi. Ishlash jarayonida detallarni sinishiga quyidagilar sabab bo'lishi mumkin:

- metallning bir jinsli emasligi;
- yuzalarga yaxshi ishlov berilmaganligi;
- ichki zo'riqishlar;
- katta yuklanishlar;
- detal materialini charchashi;
- ishchi yuzalarni shikastlanishi.

O'zgaruvchan kuchlar ta'sirida detalni chidamkorligi deformatsiya turiga (egilish yoki buralish) va ularni vaqt davomida o'zgarishiga bog'liq.

#### **Ilashish muftasiga qo'yiladigan talablar.**

Ilashish muftasi o'z vazifasini to'liq bajarish uchun quyidagi talablarga javob berishi kerak:

- Burovchi momentni dvigateldan transmissiyaga ishonchli o'tkazish;
- Ravon va to'la ulanish;
- Toza ajralish;
- Yetaklanuvchi qismlarning inertsia momentini minimal bo'lishi;
- Ishqalanuvchi yuzalardan issiqlikni yaxshi tarqatish;
- Transmissiyani dinamik yuklanishlardan saqlash;
- Siquvchi kuchlarni bir me'yorda saqlab turish;
- Boshqarish uchun kam jismoniy kuch sarflash;
- Umumiy talablar.

#### **Burovchi momentni dvigateldan transmissiyaga ishonchli o'tkazish.**

Bu talabni bajarish uchun ilashish muftasini maksimal ishqalanish momenti  $M_{im\ max}$  dvigatelning maksimal burovchi momentidan  $M_{d\ max}$  bir muncha katta bo'lishi kerak.

$$M_{im\ max} = M_{d\ max} \times \beta;$$

bu yerda bu erda:  $\beta$  - ilashish muftasining zahira koeffitsenti.

$$\beta = 1,2 \div 1,75 - \text{yengil avtomobillar uchun};$$

$$\beta = 1,5 \div 2,2 - \text{yuk avtomobillari va avtobuslar uchun};$$

$$\beta = 1,8 \div 3,0 - \text{yuqori o'tag'onlikka ega avtomobillar uchun}.$$

Ilashish muftasining zahira koeffitsienti ichki yonuv dvigateli maksimal burovchi momentga bog'liq holda o'zgaradi (1-jadval).

*1-jadval*

**Ilashish muftasining zahira koeffitsienti.**

$M_{e \max}, H \times M$	100–250	250–600	700–1800
$\beta$	1,75	2,2	2,5

Disklarning o‘rtacha radiusi quyidagi formula orqali topiladi:

$$R_c = \frac{R_t + R_i}{2}$$

Bu erda:  $R_c$  - diskning o‘rtacha radiusi, m;  $R_t$  va  $R_i$  mos holda friksion nakladkalarining tashqi va ichki radiusilari, m.

Disklarning tashqi radiusi quyidagi formula yordamida aniqlanadi:

$$R_t = 5 \cdot 10^{-3} \cdot \sqrt{\frac{10 \cdot M_{e \max}}{A}}$$

Bu erda:  $M_{e \max}$  - dvigatelning maksimal burovchi momenti, Nm;

A - koeffitsient.

Ilashish muftasi o‘lcham va massasi kichik bo‘lishi, tuzilishi va texnik xizmat ko‘rsatish sodda, shovqinsiz, ta‘mirlashga layoqatli bo‘lishi va boshqalar. Bundan tashqari ilashish muftasiga qo‘yiladigan ishonchlik talablari, tizimning ishonchli bo‘lishi, chidamliligi, ta‘mirga moyillik ko‘rsatkichlari, hamda saqlanuvchanlik ko‘rsatkichlari ham kiradi.

**XULOSA**

Xulosa qilib aytganda, avtomobil harakatlanishi uchun dvigatel valida hosil bo‘layotgan burovchi moment oshiqcha tebranishlarsiz muttasil ravishda yetakchi g‘ildiraklarga uzatilishi lozim. Buning uchun avtomobilning o‘rnidan ravon (silintirilmadan) qo‘zg‘alishini, dvigatelning validan yetakchi g‘ildiraklarga uzatilayotgan burovchi momentning qiymatini sekin - asta uzluksiz ko‘paytirishni ta‘minlash kerak bo‘ladi. Agarda bu jarayon bajarilmasa, kuchning kattaligini o‘zgartirish va uni uzatish qiyinlashadi va dvigatel o‘chib qolishi mumkin. Bu vazifalarni bevosita va uzluksiz bajarish uchun dvigatel bilan kuch uzatmani kerakli paytda birga ilashtiruvchi yoki ajratib qo‘yuvchi tuzilma - *ilashish muftasi* kerak bo‘ladi. Demak, ilashish muftasi uzatmalarni almashtirishda kuch uzatmani dvigatelning tirsakli validan qisqa muddatga vaqtincha ajratish va ravon qo‘shish vazifasini bajaradi. Ilashish muftalarini konstruksiyalashda yuqorida keltirilgan hisoblash rejimlaridan foydalanish samaraliroq hisoblanadi.

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## ZAMONAVIY, INNOVATSION YO‘L BELGILARI

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### ANNOTATSIYA

*Shahar ko‘chalarida transport vositalarining miqdori ortishi bilan shahar ko‘cha-yo‘l tizimini yuklanishiga, harakat tezligini pasayishiga, harakat xavfsizligini yomonlashishiga olib keladi. Bu o‘z navbatida avtomobillarning vaqtinchalik to‘xtab turish joylariga bo‘lgan talabning ortishiga olib keladi. Vaqtinchalik to‘xtash joylarini qurish uchun albatta bir qancha talablar qo‘yiladi.*

**Kalit so‘zlar:** *Innovatsion axborot-ishora yo‘l belgilari , Vaqtincha saqlash joylari, A darajasi, B darajasi, D darajasi.*

## MODERN, INNOVATIVE ROAD SIGNS

### ABSTRACT

*With the increase in the number of vehicles on the city streets, it causes a load on the city street-road system, a decrease in the speed of movement, and a deterioration of traffic safety. This, in turn, leads to an increase in the demand for temporary parking spaces. There are certain requirements for the construction of temporary parking lots.*

**Keywords:** *Innovative information-signal road signs, temporary storage places, level A, level B, level D.*

### KIRISH

Shahar ko‘chalarida harakatlanish xavfsizligini ta‘minlashda haydovchilarga aniq axborotni berish muxim omil hisoblanadi. Shundan kelib chiqqan holda biz quydagi innovatsion axborot-ishora yo‘l belgilari tavsiya qilamiz.

Shahar ko‘chalarida transport vositalarining miqdori ortishi bilan shahar ko‘cha-yo‘l tizimini yuklanishiga, harakat tezligini pasayishiga, harakat xavfsizligini yomonlashishiga olib keladi. Bu o‘z navbatida avtomobillarning vaqtinchalik to‘xtab turish joylariga bo‘lgan talabning ortishiga olib keladi. Vaqtinchalik to‘xtash joylarini qurish uchun albatta bir qancha talablar qo‘yiladi.



1-rasm. Tavsiya etilayotgan innovasion axborot-ishora yo‘l belgilari

**Masalaning qo‘yilishi va tadqiqot usuli.** Vaqtincha saqlash joylaridan piyodalar yo‘lagi, vokzallarning yo‘lovchilar binolari, savdo markazlarigacha bo‘lgan masofa 150 m dan oshiq bo‘lmasligi, boshqa ob‘ektlar uchun 300 m dan oshiq qabul qilinmasligi zarur. Tadqiqot natijalariga tayangan holda ko‘chalarda harakatlanish xavfsizligini oshirish, tirbadliklarni oldini olish maqsadida ko‘cha to‘xtash joylarini ko‘chadan tashqarida joylashtirishni 1-jadvaldagi kabi belgilashni tavsiya qilish mumkin[1].

### 1-jadval

#### To‘xtash joylarini joylashtirish bo‘yicha tavsiyalar

Xarakatlanish bo‘lagi soni, ta	Bir yo‘nalishdagi xarakat jadalligi, avto/h	To‘xtash joyini ko‘cha bo‘ylab joylashtirish	To‘xtash joyini ko‘chadan tashqarida joylashtirish
II	$\leq 2000$	+	+
	$\geq 2000$	-	+
III	$\leq 3000$	+	+
	$\geq 3000$	-	+
IV	$\leq 3500$	+	+
	$\geq 3500$	-	+

V va undan ortiq bo‘lakli yo‘llarda to‘xtash joylarini imkon qadar ko‘chadan tashqarida joylashtirish shart

**Tadqiqot natijalari va ularning muhokamasi.** O‘tkazilgan o‘rganish va tadqiqotlarga asoslangan holda ko‘cha bo‘ylab to‘xtab turish joylari mavjud ko‘chalarda ko‘chani xizmat ko‘rsatish darajasini (LOS) quyidagi darajalari tavsiya etiladi[2].

## 2-jadval

## Xizmat ko'rsatish darajalari

Yo'l xarakati xizmati darajasi (LOS)	O'rtacha kechikish, c
A	$\leq 5$
B	$\leq 10$
C	$\leq 20$
D	$\leq 25$
E	$> 30$
F	-
Eslatma - F darajasi faqat yuklanganlik darajasi 1 dan kata bo'lganda paydo bo'ladi.	

Xizmat ko'rsatish darajalariga ko'ra ikkinchi darajali harakatlanish yo'nalishlari transport oqimlarining sifat holati:

A darajasi - Ko'pchilik haydovchilar yo'l bo'lagidan to'siqsiz o'tadilar. Kechikish juda kichik.

B darajasi - ko'cha bo'ylab to'xtab turish joylarining transport oqimi harakatlanish imkoniyatiga ta'siri sezilarli bo'ladi. Biroq, kechikish ahamiyatsiz.

C darajasi - ko'cha bo'ylab to'xtab turish joylarining transport oqimi harakatlanish imkoniyatiga ta'siri sezilarli bo'ladi. Kechikish sezilarli darajada oshadi. To'xtash joyiga yaqinlashganda transport vositalarining navbatlari shakllana boshlaydi, ular uzunligi va mavjudligi nuqtai nazaridan jiddiy muammo tug'dirmaydi.

D darajasi - haydovchilarning ko'pchiligi to'xtash joyiga yaqinlashib, uzoq to'xtashga majbur bo'lishadi. Vaqti-vaqti bilan to'xtash joyiga kirishda navbatlar paydo bo'ladi, biroq ko'chani barqaror ishlash imkoni kam.

E darajasi - Yo'l harakati holati saqlanib qolgan holda, transport oqimining to'xtab qolish darajasidagi navbat hosil bo'ladi. Avtomobillar katta kechikishlarga duch kelishadi. Yo'l harakati holatining ozgina o'zgarishi tirbandlikning shakllanishiga olib kelishi mumkin. Ko'cha bo'ylab to'xtab turish joylarida (ya'ni, bir yoki bir nechta harakat yo'nalishlari) o'tkazuvchanligi yo'qoladi[3].

F darajasi - Ko'cha bo'ylab to'xtab turish joylariga transport vositalarining kirish imkoniyati qolmaydi. Transport vositalarining to'xtash joyini qidirish bilan bog'liq navbati ortadi. Kechikish darajasi juda yuqori bo'ladi. Vaziyatni faqat transport vositalarining kelishi intensivligini sezilarli darajada kamaytirish bilan hal qilish mumkin. Ko'cha bo'ylab to'xtab turish joylari mavjud yo'l haddan tashqari yuklangan deb hisoblanadi.

Shahar ko'cha-yo'l tarmog'ida ko'cha bo'ylab to'xtab turish joylari bilan bog'liq yo'qotishlarni iqtisodiy-ijtimoiy baholash. Yo'l-transport hodisalaridan

ko‘rilgan ijtimoiy-iqtisodiy zarar baholashda “Yo‘l-transport hodisalaridan iqtisodiy yo‘qotishlarni aniqlash uslubi” bo‘yicha hisoblab topish mumkin.

YTH umumiy yo‘qotishlar tarkibiga muvofiq, bitta YTH dan umumiy yo‘qotishlarni (so‘m) quyidagi formula ko‘rinishida ifodalash mumkin:

$$Y = \sum (Y_{1i} + Y_{2i} + Y_{3i} + \dots + Y_{8i})$$

Bunda:

Y -aniq bitta YTH dan yo‘qotishlarning umumiy miqdori, so‘m;

$Y_{1i}$ -buzilgan transport vositasini keltirish, ta‘mirlanguncha bekor turish, tiklash va ta‘mirlash xarajatlari, so‘m;

$Y_{2i}$  -buzilgan yo‘l bo‘lagi(ko‘cha), yo‘l-muhandislik inshooti(to‘siqlar, harakatni boshqarish texnik vositalari, ko‘prik panjaralari, yo‘l o‘tkazgich ko‘prik tayanchlari va h.k.) ta‘mirlash xarajatlari, so‘m;

$Y_{3i}$ -yuklarni buzilishidan yo‘qotishlar, so‘m;

$Y_{4i}$ -YTH bo‘lgan xududda harakatlanish me‘yoriy sharoitining buzilish oqibatidan (ushlanib qolish, aylanib o‘tish oqibatida transport vositasining ortiqcha yo‘l bosishi va h.k.) yo‘qotishlar, so‘m;

$Y_{5i}$ - DYHXB va xuquqiy muassasalarni YTH rasmiylashtirish bo‘yicha xarajatlari (surishtiruv ishlarini olib borish, guvohlarni chaqirish, ishni sudga ko‘rish va h.k.), so‘m;

$Y_{6i}$ - harakat qanashchilarining ishtimoiy himoyasi va ma‘naviy yo‘qotishlar (nafaqalar, boquvchisiz qolganligi uchun nafaqalar va h.k.), so‘m;

$Y_{7i}$ - YTH ekologik yo‘qotishlar, bunga ifloslangan yo‘l qatnov qismini va yo‘l oldi tasmalarni tozalash (yong‘in, yonilg‘i, kislota, og‘ir yuklarning to‘kilishi ) xarajatlari kiradi, so‘m;

$Y_{8i}$ - odamlarni YTHga uchrashidan xalq xo‘jaligi yo‘qotishlari, bunga milliy daromadning yo‘qotilgan qismi jarrohlik xarajatlari, davolash xarajatlari, kasallik varaqasiga to‘lovlar kiradi, so‘m;

i-bitta YTHga uchragan odamlar, transport vositalarining,( yuklarining va h.k.) soni.

### XULOSA.

Xulosa qilib aytganda, avtomobillarni yo‘l tarmog‘ida to‘xtash jarayoni bilan bog‘liq iqtisodiy zararni ikkita asosiy tarkibiy qismga bo‘lish mumkin bo‘ladi:

- to‘xtash jarayoni bilan bog‘liq bo‘lgan yo‘l-transport hodisalaridan kelib chiqadigan zararlar;

- yo‘llarni bir bo‘lakdan ikkinchisiga to‘xtash joylaridan kirish va chiqishlar natijasida transport oqimining kechikishi bilan bog‘liq yo‘qotishlar.

Yo‘l-transport hodisalaridan keladigan ijtimoiy-iqtisodiy zararni baholash. Shahar ko‘chalarida to‘xtash jarayoni bilan bog‘liq bo‘lgan yo‘l-transport hodisalarining statistik ma‘lumotlarini tahlil qilish orqali ko‘cha bo‘ylab to‘xtab turish joylari bilan bog‘liq bo‘lgan yo‘l-transport hodisalarini ajratib ko‘rsatishga imkon beradi[3].



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## COMMUNICATIVE COMPETENCE IN ENGLISH LANGUAGE TEACHING

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**Abstract.** *This article is dedicated to provide reader with necessary theoretical background when we defined the key concepts and supported them with references to leading research authorities in the field. The introduction of the term communicative competence briefly commented on possible difficulties which speakers of foreign language may encounter in communication and that brought us to summarizing reasons for why it is important to develop communicative competence in English language learners.*

**Keywords:** *communicative competence, discourse competence, strategic competence, school, classroom, English subjects, language, grammar.*

Communicative competence has been defined and discussed in many different ways by language scholars of different fields. The successful language use for communication presupposes the development of communicative competence in the users of that language and that the use of language is constrained by the socio-cultural norms of the society where the language is used. It has been several decades since the communicative approach to language teaching first appeared in print in the field of second language acquisition (SLA). In various types of language programs, language educators and curriculum researchers have implemented communicative-oriented teaching syllabuses to seek for more effective ways for improving students' communication skills to replace the traditional, grammar-oriented approach in the past. To some English educators, however, a Communicative Language Teaching (CLT) approach is challenging to adopt in their classroom.

- As the current model, communicative competence, which is viewed as the basis of CLT, has been developed on native-speaker norms that are different socioculturally and educationally from those of the non native speaker (Samimy and Kobayashi, 2004). The idea of communicative competence is originally derived from Chomsky's distinction between „*competence*“ and „*performance*“. The former is the linguistic knowledge of the idealized native speaker, an innate biological function of the mind that allows individuals to generate the infinite set of grammatical sentences that constitutes their language, and the latter is the actual

use of language in concrete situations. By competence, Chomsky (1965) means the shared knowledge of the ideal speaker-listener set in a completely homogenous speech community. Such underlying knowledge enables a user of a language to produce and understand an infinite set of sentences out of a finite set of rules. The transformational grammar provides for an explicit account of this tacit knowledge of language structures, which is usually not conscious but is necessarily implicit. Hymes (1972) says that “the transformational theory carries to its perfection the desire to deal in practice only with what is internal to language, yet to find in that internality that in theory is of the widest or deepest human significance”. Hymes (1972) considers Chomsky’s monolithic, idealized notion of linguistic competence inadequate and he introduces the broader, more elaborated and extensive concept of communicative competence, which includes both linguistic competence or implicit and explicit knowledge of the rules of grammar, and contextual or sociolinguistic knowledge of the rules of language use in contexts. Hymes views communicative competence as having the following four types: what is formally possible, what is feasible, what is the social meaning or value of a given utterance, and what actually occurs. Hymes (1974), retaining the idea of Chomsky’s underlying grammatical competence, looks at contextual relevance as one of the crucial aspects of one’s knowledge of language and claims that meaning in communication is determined by its speech community and actual communicative events. In addition, Hymes was inspired by Noam Chomsky’s distinction on linguistic competence and performance. He proposes that the speakers should study the knowledge that people have when they communicate. Just like linguistic competence which tells one whether a sentence is grammatical or not, communicative competence tells one whether an utterance is appropriate or not within a situation. Hymes was among the first to use the term *communicative competence*. For Hymes, the ability to speak competently not only entails knowing the grammatical rules of a language, but also knowing what to say to whom in what circumstances and how to say it (Scarcella, Andersen, and Krashen, 1990). Hymes was also among the first anthropologist/ethnographer to point out that Chomsky’s linguistic competence lacks consideration of the most important linguistic ability of being able to produce and comprehend utterances which are appropriate to the context in which they are made. It is part of that ability to know when to use, “*Would you like to start now, Sir/Mom?*” and when to use, “*Hey, you wanna start now, Mike?*” The competence is that all the adult native speakers of a language process must include their ability to handle linguistic variation and the various uses of language in the

context. It should encompass a much wider range of abilities than the homogenous linguistic competence of the Chomskyan tradition. Canale and Swain (1980) define communicative competence in the context of second language teaching as “a synthesis of knowledge of basic grammatical principles, knowledge of how language is used in social settings to perform communicative functions, and knowledge of how utterances and communicative functions can be combined according to the principles of discourse”. Canale (1983) views communicative competence as “the underlying systems of knowledge and skills required for communication”. The communicative competence is, then, distinguished from what Canale calls “actual communication”, which is defined as “the realization of such knowledge and skills under limiting psychological and environmental conditions such as memory and perceptual constraints, fatigue, nervousness, distractions, and interfering background noises” 33 (Canale, 1983: 5). As far as performance is concerned, Chomsky’s performance and Canale and Swain’s actual communication point to roughly the same phenomenon of uttering sentences in real communicative situations. Hymes views communicative competence as having the following four types: what is formally possible, what is feasible, what is the social meaning or value of a given utterance, and what actually occurs. It is Canale and Swain (1980) who define communicative competence in the context of second language teaching. Their view of communicative competence is a synthesis of knowledge of basic grammatical principles, knowledge of how language is used in social settings to perform communicative functions, and knowledge of how utterances and communicative functions can be combined according to the principles of discourse. Accordingly they explain the above-mentioned Hymes’ four types of communicative competence in the following way. The first type, „what is formally possible“, is the interaction of the grammatical system of competence. Hence the utterance “*the was cheese green*” is not grammatical. The second type, „what is feasible“, is the psycholinguistic system of competence. The utterance “*the cheese the rat the cat the dog saw chased ate was green*” is grammatical but not acceptable in that its multiple center-embedded clause is difficult to comprehend in terms of human information processing. To make it feasible, the utterance must be changed to the right branching structure common in English as in “*the dog saw the cat that chased the rat that ate the cheese that was green*”. The third type, „what is the social meaning or value of a given utterance“, is the socio-cultural system of competence. For example, if one says „good-bye” in greeting someone, it is inappropriate in a particular social context. And the last type, „what actually

occurs", is the probabilistic rule of occurrence that something is in fact done or actually performed. Canale and Swain's framework brings together various expanded notions of communicative competence (Scarcella, Andersen, and Krashen, 1990). In their view, communicative competence involves four areas of knowledge and skills. These 34 include *grammatical competence*, which reflects knowledge of the linguistic code itself and includes knowledge of vocabulary and rules of word formation, pronunciation, spelling, and sentence formation. Grammatical competence means the acquisition of phonological rules, morphological rules, syntactic rules, semantic rules and lexical items. Today it is usually called linguistic competence. Next, there is *sociolinguistic competence*, which addresses the extent to which utterances are produced and understood appropriately. Sociolinguistic competence refers to the learning of pragmatic aspects of various speech acts, namely, the cultural values, norms, and other socio-cultural conventions in social contexts. They are the context and topic of a discourse, the participants' social status, sex, and age, and other factors which influence the styles and registers of speech. Since different situations call for different types of expressions as well as different beliefs, views, values, and attitudes, the development of sociolinguistic competence is essential for communicative social actions. Then, there is *discourse competence*, which involves mastery of how to combine grammatical forms and meanings to achieve a unified written text in different genres such as narratives, argumentative essays, scientific reports, business letters, etc. Discourse competence is the knowledge of rules regarding the cohesion (grammatical links) and coherence (appropriate combination of communicative functions) of various types of discourse. Canale and Swain emphasize that sociolinguistic rules of use and rules of discourse are crucial in interpreting utterances for social meaning, particularly when the literal meaning of an utterance does not lead to the speaker's intention easily. And there is *strategic competence*, which refers to the mastery of the communication strategies that may be called into action either to enhance the effectiveness of communication or to compensate for breakdowns in communication due to limiting factors in actual communication or to insufficient competence in one or more of the other components of communicative competence. Strategic competence is to do with the knowledge of verbal and non verbal strategies to compensate for breakdowns such as recognizing discourse structures, activating background knowledge, contextual guessing, and tolerating ambiguity. 35 As it is clear from the way their framework is described, their intention is to discover the kinds of knowledge and skills that an L2 learner needs to be taught and to develop

the theoretical basis for a communicative approach in the second language teaching based on an understanding of the nature of human communication (Canale and Swain, 1980). A communicative approach in designing a syllabus is a broad way to language teaching that focuses on communication as the organizing principle for teaching rather than a focus on the mastery of the grammatical system of the language (Richards, 2001: 36). The emergence of ESP with its emphasis on needs analysis as a starting point in a language program design is an important factor in the development of this current approach to language curriculum development. A second influence is the communicative approach to language teaching that emerges in the late 1960s and 1970s as a replacement for the structural-situational method. Communicative language teaching is a response to the changes in the field of linguistics in the 1970s, as well as a response to the need for new approaches to language teaching. Linguistics moves away from a focus on grammar as the core component of language abilities to a consideration of how language is used by speakers in different contexts of communication. The communicative approach relates to communicative competence which refers to the capacity to use language appropriately in 37 communication based on the setting, the roles of the participants, and the nature of the transaction. The communicative approach appears to have become synonymous with progressive and innovative language teaching. The communicative approach is then referred to as the identification of behaviors of people considered successful at what they do, specifically, the identification of the characteristics of good communicators (Savignon, 1997: 9). The communicative approach is a continuous process of expression, interpretation, and negotiation of meaning. In addition, it is a dynamic rather than a static concept. It depends on the negotiation of meaning between two or more people who share something, or in other words, it can be said to be an interpersonal rather than an intrapersonal trait. Further, the communicative approach is closely related with competence and performance, where competence is a presumed underlying ability and performance is the overt manifestation of that ability. Competence is what one knows, while performance is what one does. Hymes (1971) is concerned with the communicative approach as the integration between communication and culture, where members of the community will behave and interpret the behavior of others according to the knowledge of the communicative system they have available to them. This knowledge includes, but is not limited to, the formal possibilities of the linguistic code. So, an adequate theory of communicative competence must be sufficiently general to account for

all forms of communication. And Halliday (1970) has another perspective to the elaboration of the communicative approach, that of the functions of language. Halliday concerns with moving away from the purely formal or structural preoccupations that have dominated linguistic theory toward a synthesis of functional approaches in the study of language. Then, a theory of the communicative approach rests on a broad perspective of all culture as communication or meaning and it is the patterned relationship of social roles and social setting to linguistic expressions. It is in line with Paulston (1974) who emphasizes the communicative approach. She points out that the communicative approach is the social rule of language use. She views that communicative activities in language classroom are devoid of social meaning and it is impossible to engage successfully in interaction activities with no knowledge of the rules of the social use. A different perspective of the communicative approach is put forward by Widdowson (1978). He regards the communicative approach in language teaching as an ability to interpret discourse. The focus of an L2 study must be on the interpretation of discourse. The interpretation of discourse should relate directly to the needs and present knowledge of the learners. He adds that L2 acquisition will be most effective where the learners may rely on their existing knowledge of the world, that is, to interpret discourse or meaning.

The procedure for determining communicative competencies has been based on the current theories of English language teaching. The procedure for determining the tasks has been verified through needs analysis; they were classified into four competencies and ten task types. The figure below shows how the competencies and tasks, that has been identified in this book, are determined and classified into competencies and task types as the results of the needs analysis stage.

As indicated in the figure, there are four major communicative competencies and ten major tasks carried out during the teaching and learning processes. The communicative competencies consist of: a) grammatical competence, b) sociolinguistic competence, c) discourse competence, d) strategic competence. 1. The competency of grammatical competence consist of five tasks: a) spelling alphabets/letters and numbers, and pronouncing English sounds; b) understanding main words and functional words; c) understanding the rules of noun phrases & constructing and presenting description texts which describe objects by using noun phrases; d) understanding rules of word and sentence formations or structural skills: tenses, active and passive voices, direct and indirect speeches, degrees of comparison, gerunds and infinitives, affixes and derivatives, conditional sentences, relative/adjective clauses, causatives, use of wish, etc., e) constructing sentence types:

simple, compound, and complex sentences; and constructing sentence forms: statement, interrogative, imperative, request, and exclamation sentences. 2. The competency of sociolinguistic competence consist of three tasks: a) understanding English language teaching for elementary schools students such as interesting strategies: singing songs, playing simple film/drama, playing games/playing for fun; creating interesting media, etc. based on the socio cultural context; b) being able to teach by using English as the language of bilingual instruction in the social context of the elementary school level; c) producing appropriate utterances of self introduction. 3. The competency of discourse competence contain one task: combining grammatical forms and meanings to achieve texts in different genres in the form of different text types: poems, procedures, descriptions, reports, news items, narratives, recounts, spoofs, discussions, expositions, argumentatives, reports, letters, announcements, etc. 4. The competency of strategic competence consist of one task: being able to use relevant language contents such as language functions/English expressions 52 clearly in an organized and coherent way, according to the genre and communicative situation; selecting the relevant contents and expressing them using the appropriate tones of voice, body language, and gestures. For the purpose of analysis, each task is referred to as the competency with an understanding that the task was a part of the competency. Each task including the topics is integrated with the language functions/English expressions during the task completion.

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creating interesting media, etc. based on the socio cultural context; b) being able to teach by using English as the language of bilingual instruction in the social context of the elementary school level; c) producing appropriate utterances of self introduction.

3. The competency of discourse competence contain one task: combining grammatical forms and meanings to achieve texts in different genres in the form of different text types: poems, procedures, descriptions, reports, news items, narratives, recounts, spoofs, discussions, expositions, argumentatives, reports, letters, announcements, etc.

4. The competency of strategic competence consist of one task: being able to use relevant language contents such as language functions/English expressions 52 clearly in an organized and coherent way, according to the genre and communicative situation; selecting the relevant contents and expressing them using the appropriate tones of voice, body language, and gestures. For the purpose of analysis, each task is referred to as the competency with an understanding that the task was a part of the competency. Each task including the topics is integrated with the language functions/English expressions during the task completion.

The task of understanding English language teaching for elementary school students such as interesting strategies: singing songs, playing simple film/drama, playing games/playing for fun; creating interesting media, etc. based on the socio cultural context is the first task of the sociolinguistic competence. English language teaching for elementary students is very important especially for the students of ESTD, because they will become elementary school teachers who would teach English subjects or would use English as the language of bilingual instruction in the classroom. So, in ESTD, understanding English language teaching for elementary school students belong to the important and basic competence in the teaching and learning process. The students should know children's characteristics and what competencies, topics, and tasks they have to deliver. The students also should understand interesting strategies well: singing songs, playing simple film/drama, playing games/playing for fun; creating interesting media, etc. based on the socio cultural context, and other aspects implemented in teaching English subjects or a number of subjects where English was used as the language of instruction. The next task is that of being able to teach a number of subjects by using English as the language of bilingual instruction in the social context of the elementary school level. The analysis of this task is drawn from the questionnaires, interviews, and the observation and filed notes of the classroom teaching and learning process. It is highly required and become the foundation skills when they would teach in elementary schools where all teachers should teach a number of subjects by using English as the language of instruction. To get the maximum result, one of the lecturers carry out this task in a „*classroom action research*“ entitled

*“Improving Students Achievement of Speaking Skill through Role Playing in ESTD, Faculty of Education, State University of Yogyakarta.* In this case, the lecturer takes the students into the role as a teacher and as students. The result shows that there is a significant increase of the students’ achievement of speaking. In addition, it could provide the 18 students with the competency of teaching a number of subjects by using English as the language of instruction. Producing utterances of self introduction appropriately is the next task identified in the needs analysis. The students are expected to improve their speaking skills through this task. Speaking is very important especially for the students of ESTD because they will be teachers who would use English for bilingual instruction in the classroom. So, in ESTD, the speaking skills belong to the important and basic competence in the teaching and learning of English. There are some methods or strategies implemented in improving speaking skills such as producing utterances of self introduction, retelling stories, describing things or objects, etc. Producing utterances of self introduction appropriately has been chosen as one of the strategies in improving speaking skills because the lecturers and students think it is not so difficult to do, where the students explain or give some information related to the students’ real conditions; for example, the names, dates of birth, addresses, status, professions, etc. Besides, it consist of some simple sentences and some English expressions/language functions such as greetings, opening/asking permission, informing facts, closing, leave taking, etc. The competency of discourse competence consists of one task: combining grammatical forms and meanings to achieve texts in different genres in the form of different text types: poems, procedures, descriptions, reports, news items, narratives, recounts, spoofs, discussions, expositions, argumentatives, reports, letters, announcements, etc. This task is analyzed from the students’ needs and the observation of the classroom teaching and learning process, where the students need to understand it well, because it is very useful for the students to combine grammatical forms and meanings to achieve texts in different genres both spoken and written. Combining grammatical forms and meanings to achieve texts in different genres in the form of different text types, both spoken and written texts, belong to the important skill in learning the English language. So in this case, the students are 19 expected be able to construct texts in different genres in groups or individually. The texts could be poems, prose, lyrics, procedures, descriptions, reports, news items, narratives, recounts, spoofs, discussions, expositions, argumentatives, reports, letters, announcements, etc. As elementary school teachers in the future, the students need a qualification, skill, or ability to make texts in different genres because some of them will teach a number of subjects by using English for bilingual classes or some of them would teach English subjects in their classroom. The last is the

competency of strategic competence, where there is one task: being able to use relevant language contents, such as language functions/English expressions, clearly in an organized and coherent way, according to the genre and communicative situation; selecting the relevant contents and expressing them using appropriate tones of voice, body language and gestures. Relatively the same with the task of understanding English language teaching for elementary school students, this task does not carry the topics and language function independently like the other competencies, but they are carried out integratedly in every task of the previous competencies. The analysis of this task is also drawn from the students' needs and the observation of the classroom teaching and learning process. At the beginning of every teaching and learning process, in every competency, and in every task, the lecturer give a slight general preliminary information about English expressions because it is needed and became the basic knowledge and skills when they will teach English subjects or a number of subjects where English is used as the language of instruction. So, in ESTD, mastering English expressions belongs to the important and basic competence in the teaching and learning of the English subject. The students should understand well about some English expressions, such as, how to greet someone, how to express what is in mind, etc. This competency focuses not only on English 20 expressions used by the lecturers, but also on those used by the students in the process of teaching and learning in the classrooms.

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## ROMANSHUNOS ADIB – ABDULLA QODIRIY

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Islom Karimov nomidagi Toshkent davlat texnika universiteti  
“Hayot faoliyati xavfsizligi” kafedrasida 3 kurs talabalari

**Annotatsiya:** Ushbu maqolada O‘zbek xalqiga romannafislikning ilk tamal toshini qo‘ygan, ma’naviyat sarchashmasidan insonlarga ma’rifatni singdirgan buyuk siymolarimizdan biri-Abdulla Qodiriyning ijod faoliyati keng ko‘lamda targ‘ib qilish orqali o‘zbek xalqining naqadar buyukligini isbotini yuzaga chiqargan.

**Kalit so‘zlar:** Abdulla Qodiriy, romannafis adib, adabiy fenomen, qodiriyshunoslik fan tarmog‘i, tekstologik o‘zgarishlar.

**Аннотация:** В этой статье будет преувеличением сказать, что величие узбекской культуры раскрывается широкой пропагандой творчества Абдуллы Кадири, одного из наших великих деятелей, заложившего первый камень в фундамент новой элегантности для узбекского народа, внушавший людям мудрость от душевной смуты.

**Ключевые слова:** Абдулла Кадири, писатель, литературный феномен, направление кадиристики, текстологические изменения

**Annotation:** In this article, we want to reveal the greatness of the Uzbek culture by widely promoting the creative work of one of our great figures, Abdulla Qadiri, who laid the first foundation stone of the novel elegance for the Uzbek people, who instilled wisdom in people from the spiritual turmoil. no exaggeration.

**Key words:** Abdulla Kadiri, novelistic writer, literary phenomenon, branch of Kadiri studies, textological changes.

O‘zbek klassik adabiyotining yetuk romannavis namoyondasi, o‘zbek adabiyotiga romanchilik yo‘nalishiga asos solgan, yozuvchi romannavis, tarixiy asarlar qoldirib, kitobxonlar qalbidan joy olgan Abdulla Qodiriy- o‘zining asarlari bilan, o‘zbek an‘anasini ko‘rsatish, o‘zbek xalqining milliy o‘zligini anglashda beqiyos ahamiyatga ega.

Yurt boshimiz Shavkat Mirziyoyev Miromonovich ta‘biri bilan aytganda: “Buyuk adibimiz o‘zbek romanchilik maktabining asoschisi Abdulla Qodiriy badiiy daxosi bilan yaratilgan yetuk asarlar, milliy o‘zligini anglashda, bugun ham beqiyos ahamiyat kasb etmoqda.” deb bejiz aytmaganlar.

Bizga ma‘lumki insoniyat hayotida ma‘naviyatsiz yashash aslo mumkin emaski, chunki bunday ulug‘ siymolar har ming yillikda bir bor dunyoga keladi.

Inson tug‘ulibdiki, ma‘naviyat bulog‘idan suv ichmagan, uning ziyosi ostida ko‘karmagan, aqliy jabhalarda teran fikrlab hayot yo‘lini yorug‘lik tezligi kabi yoritib nurafshon qilib bormagan, buning tub negizida ham asl ma‘noda Abdulla Qodiriy kabi bir qancha buyuk siymolarimizning xizmati, ularning bizga qoldirgan ma‘naviy boyliklari zulmatdan ziyo tarqatib bormoqda. Abdulla Qodiriyning bu ishlari tillardan-tillarga, dillardan-dillarga ko‘chib, qalbimizda armug‘on bo‘lib kelmoqda. Teran ko‘z bilan qaralganda ham, o‘zbek romanchiligiga tamal toshini qo‘ygan buyuk romannavis- o‘tkir qalam soxibidir. Tom ma‘noda bir nazar solsak, Abdulla Qodiriyning adabiyotga, ma‘naviy olamga juda katta tog‘ barpo etdi. Buning ifodasini esa uning romanlarni o‘qigandan so‘ng insonning terisi jumbushga keltiradigan, qalbini quyosh nuridek yoritib, isitib, uning hayotga bo‘lgan qarashlarini o‘tgan zamon adiblarimiz, xalqimizning kechmishlarini o‘z asarlarida, shunday mohirona usulda yoritib beradiki, haqiqatdan ham bu olamni mo‘jizalaridan biri desak mubolag‘a bolmas aslo.

Shuni ta‘kidlash joizki, Abdulla Qodiriy turmush tarzida ham o‘zbek xalqiga o‘rnak bo‘la oladigan darajaga yetgan yetuk adib desak hech ham adashmagan bo‘lamiz. Buning isboti esa .farzandlari Habibullo Qodiriyning so‘zlarida o‘z ifodasini topadi: “Men dadam oldida hech mahal reja yoki shunga o‘xshash biror dastur ko‘rmaganman. Chamasi, u kishi hamma plan-rejalarini ipidan –ignasigacha miyada obdon pishirib olardilar.” deb xotirlaydi.

Ko‘p asrli o‘zbek adabiyoti tarixidagi ikki adabiy asrni milliy adabiyotimiz tarixining oltin sahifalari, desak adolatdan bo‘ladi. Agar shu ikki asrning biri buyuk Navoiy nomi bilan munavvar bo‘lgan XV asr to‘g‘ri kelsa, ikkinchisi Abdulla Qodiriy, Fitrat va Cho‘lponning porloq ijodlari bilan boshlangan o‘zbek adabiyoti - tarixining yangi davri — XX asrdir. Shu ikki oltin asrning mash‘allari bo‘lgan bu

buyuk siymolarning har biri o'zbek adabiyotimiz tarixidagi mo'jizaviy voqealardan biri va har biri adabiy fenomendir.

Shuni mamnuniyat bilan aytib o'tish joizki, Abdulla Qodiriy ijodini o'rganish ishlarini xatarli 30-yillarda ustoz Oybek boshlab bergan. Undan keyin Izzat Sultonov, Matyoqub Qo'shjonov, Ibrohim Mirzayev, Umarali Normatov, Ahmad Aliyev, Sobir Mirvaliyev, Sherali Turdiyev, Bahodir Karimov, Aliboy Qahramonov, Xadicha Lutfullayeva, Nabijon Boqiy singari olim va jurnalistlar, shuningdek, adibning farzand va nevaralari Habibulla, Mas'ud, Xondamir va Sherkon Qodiriylar bu sohada ibratli ishlarni amalga oshirdilar. Ularning fidokorona ilmiy va targ'ibotchilik faoliyatlari tufayli, o'zbek adabiyotshunosligida qodiriyshunoslik fan tarmog'i yuzaga keldi. Biz qodiriyshunoslik ilmiga katta hissa qo'shgan olim va jurnalistlarning o'sha davrning eng shov-shuvli paytlarida o'z qimmatini yo'qotmagan asarlaridan foydalanish va ulardan olinajak adabiy-tarixiy va adabiy-nazariy lavhalarni ular nomi bilan e'lon qilish niyatidamiz.

Abdulla Qodiriyning tarixiy romanlari 20-yillardagi yangi o'zbek adabiyoti oldida turgan murakkab g'oyaviy-badiiy muammolarning juda ko'pini yechib berib, adabiy taraqqiyotning tezlanishiga xizmat etdi. Keyinroq o'zbek adabiyotining atoqli vakillari qatoriga ko'tarilgan Oybek, G'afur G'ulom, Abdulla Qahhor Abdulla Qodiriy ijodining katta ta'siri ostida yetuk yozuvchi bo'lib yetishdilar. Abdulla Qodiriy ijodining milliy adabiyotlarga ta'sirini tojik, turkman, qozoq va qirg'iz adabiyotining Sadridin Ayniy, M. Avezov, X. Deryayev, Chingiz Aytmatov singari yirik vakillari ham qayta-qayta qayd etishgan. Nemis adabiyotshunoslari N.Tun, I. Baddauf, amerikalik tadqiqotchilar E. Olvort, Xristofor Murfi, asli eronlik amerika olimi Eden Nabi Abdulla Qodiriy ijodi bo'yicha jiddiy ishlar qilganlar.

Abdulla Qodiriy ijodidagi chuqur mazmuni jozibador va ravshan shaklda ifoda eta olish, hayotdan yirik va salmoqli voqealarni tasvir uchun tanlay olish, hayotdagi dramatik vaziyatlarga e'tibor, shaklning ixchamligi va katta prozada ortiqchaliklardan xoli ifodaning ustunligi, so'zning ma'noga mosligi va yorqinligi, hammadan ham muhimi – kishilar harakteridagi muhim xususiyatlarni ko'ra olish va tasvir eta bilish yosh avlod uchun doimo ibrat namunasi bo'lib kelmoqda. Oybek aytganidek, "O'tkan kunlar" romanida yozuvchi til ustida katta mahorat ko'rsatadi. Romanning tili haqiqatan boy, bo'yoqli, sodda, ifoda kuchi zo'r, ommaga anglashilarlik bir tildir. O'zbek adabiy tilining shakllanishida bu asarning roli, shubhasiz, katta. Abdulla Qodiriy yosh adabiy avlodni doimo jahon realistik adabiyotidan o'rganishga chaqirar, o'zi ham jahon klassiklarini mutolaa etish va ularning asarlarini o'zbekchaga tarjima qilish jarayonida realizm ustalaridan o'qib-o'rganib borar edi. Adib o'z kasbi haqida to'xtalib shunday degan edi: „Yozuvchilikda bir qonun bor: hammadan ilgari ma'no,

undan soʻng shu maʼnoni ifoda qilish uchun soʻz qurish, soʻzgina emas, sanʼatkorona, yaʼni shundogʻ soʻzki, aytmoqchi boʻlgan fikringizning ifodasi uchungina maxsus yaratilgan boʻlib, yasama boʻlmasin. Mana shu shartni bajarib, bu jihatdan taʼmin etilgach, boshqa masalalarga oʻtishga haq olgan boʻlasan“. Unda xilma-xil insoniy taqdirlar, ijtimoiy-siyosiy, maʼnaviy-axloqiy, oilaviyishqiy muammolar qalamga olingan. Biroq ular orasida yurtning, millatning taqdiri, mustaqilligi masalasi alohida ajralib turadi. Binobarin el-yurtning mustaqilligi, birligi masalasi romanning asosini tashkil etadi. Asarning bosh qahramonlari Otabek va Yusufbek hojilar shu yurt istiqloli, faravonligi, osoyishtaligi yoʻliga hayotini, jonini tikkan fidoyi kishilardir. “Oʻtkan kunlar” bamisoli ulkan va tiniq koʻzgu, unda oʻzbek millatining muayyan tarixiy sharoit, vaziyatdagi turmushi, urf-odatlarini, ruhiy-maʼnaviy dunyosi, boʻy-basti, qiyofasi keng koʻlamda aniq-ravshan gavdalantirilgan. “Oʻtkan kunlar”, bir qarashda, anʼanaviy ishq dostonlarini ham eslatadi. Unda Otabek bilan Kumushning ishqiy sarguzashtlari, fojiasi juda katta mahorat bilan tasvir etilgan. Asardagi ishqiy sarguzashtlar kitobxonni hayajonga soladi, Otabek bilan Kumushning goʻzal baxtini barbod etgan omillar kishini chuqur oʻyga toldiradi. Muallif oshiqlarning ishqiy sarguzashtlari bahonasida muayyan tarixiy davrni Turkistonning rus bosqini arafasidagi ahvoli, qora kunlarini koʻz oldimizda gavdalantiradi. Abdulla Qodiriy ishqiy sarguzashtlar koʻrinishida oʻlkaning tutqunlikka tushishining bosh sababi jaholat, qoloqlik va oʻzaro ichki nizolardir degan fikrni gʻoyat ustalik bilan aytadi. Garchi romanda adib shaxs harakteri va qismatini muhit, sharoit, ijtimoiy muammolar bilan chambarchas aloqadorlikda tasvir va tahlil etsa-da, inson shaxsining muhit va sharoitga bogʻliq boʻlmagan tugʻma, sirli-sehrli gʻaroyib shevalariga ham eʼtiborni tortadi. Bu jihatdan bir oila, bir xil sharoitda tugʻilib voyaga yetgan saviya-xarakter, surat va siymo vajidan ikki olam – egachi -singil Zaynab va Xushroʻybibi obrazlarining talqini gʻoyat ibratlidir. Biri mute, itoatkor, nuqul oʻzgalar izni bilan ish koʻradi; ikkinchisi esa dadil, mustaqil, oʻz baxti va taqdiri uchun faol kurash olib boradi. Yozuvchi bu ikki shaxs xarakteriga xos tugʻma xususiyatlarni sharhlash bilangina cheklanmaydi, bunday xislatlarning oʻsha kimsalar, qolaversa, oʻzgalar taqdiriga koʻrsatgan taʼsiri, fojeiy oqibatlarini ham ifoda etadi. Oʻzini boshqalar ixtiyoriga topshirib qoʻygan Zaynab shu oqibati tufayli oʻz baxtiga zomin boʻlibgina qolmay, yana oʻsha oqibati tufayli oʻzgalar qutqusi orqasida beixtiyor jinoyatga qoʻl uradi – Kumushga zahar beradi. Mustaqillik, dadillik – yaxshi hislat, biroq unga xudbinlik aralashsa baloi azimga aylanishi mumkin. Xushroʻybibi oʻz baxti uchun kurashadi; shaxsiy manfaatlari yoʻlida hech narsadan qaytmaydi; birovlarining koʻz yoshlari hisobiga, oʻzgalarning baxtiqaroligi evaziga oʻz baxtini tiklaydi. Romandagi Oʻzbek oyim obrazi ham nihoyatda tabiiy va goʻzal siymolardan biridir. Dumbul tabiat bu ayol



o'g'li Otabek, qolaversa kelinlari – Kumush, Zaynab taqdirlarining chig'allashib ketishi, oxiri fojiaga yuz tutishida bosh sababchi ekani ayon. Biroq har qancha gunohkor bo'lmasin, o'ta andishali adib uni keskin qoralashga tili bormaydi. Nima bo'lganda ham, O'zbek oyim, baribir ona... Ayni paytda rostgo'y, realist yozuvchi onaning pala-partish, dovdur xattiharakatlaridan, tabiatidagi ayrim kamchiliklaridan ko'z yumib o'tolmaydi. Bu borada adibga xalqona yumor qo'l keladi. Bu obraz tasviri boshdan-oyoq ajib serjilo – ham kinoya-kesatiqgarga, ham ardoq-mehrga to'la yumor bilan yo'g'rilgan. Xullas, "O'tkan kunlar" romani to'qima qahramonlarning hayotiylik kasb etishi va tarixiy voqealarga uyg'unligi jihatidan ham, mujassamot butunligi va tilidagi nafosati jihatidan ham o'zbek adabiyoti xazinasidagi durdonalar qatoridan o'rin olgandir. "O'tkan kunlar" o'zbek adabiyotida ilk roman bo'lishining o'zi bilanoq ilgari bosilgan katta qadam edi. Unda realizmning asosiy tamoyillari yuqori badiiy saviyada amalga oshirildi. Roman, umuman, o'zbek adabiyotida yetuk realizmga asos soluvchilik rolini o'ynadi.

Abdulla Qodiriy qalamiga mansub birorta asar matni bizgacha yetib kelmagani boisi shundaki, ular tintuv paytida olib ketilib, kuydirib tashlangan, ularni nashr nusxalari bilan solishtirish imkoniyati ham afsuslar bo'sin kim iloji yo'q. Ammo shu narsa aniqlandiki, adibning ayrim asarlari dastlab gazeta yoki jurnalda, keyin esa kitob shaklida nashr etilganida, ma'lum bir tekstologik ya'ni matniy o'zgarishlarga uchragan. Bu hol "qomus"da adib asarlari matni tarixini berishdan avval jiddiy tekstologik tadqiqotlar olib borilishni taqozo etadi. Yozuvchining tarixiy romanlarining esa asosiy mavzusi – millat taqdiri, birligi, el-yurt qayg'usi, mustaqilligi, shaxs erki, ijtimoiy adolat uchun kurash g'oyalari bilan yo'g'rilganligi tufayli ham hukmron mafkuraga zid asarlar bo'lib chiqdi. Millat ruhini yorqin aks ettirgan, xalqning, o'zga millat kitobxonlarining sevimli asarlariga aylangan bu romanlar sho'ro davri siyosati uchun zararli kitoblar sifatida bot-bot qoralandi. 30-yillar o'rtalariga kelib, bu mash'um kompaniya avjiga chiqdi. G'ofir G'ulom, Abdulla Qahhor, Uyg'un kabi shogirdlarining "donos"lari ortidan Abdulla Qodiriy 1937-yil 31-dekabr kuni xibsga olindi. 9 oylik qamoqdagi so'roq-tergov, qiynoq, xo'rlikdan so'ng Cho'lpon, Fitrat kabi maslakdoshlari bilan birga qatl etildi. Qodiriy xibsga olingach, asarlari "zararli" sanalib o'tda yoqildi, kutubxonalardan yo'qotildi, ularni o'qish ta'qiqlandi.

Qodiriyshunoslar adibning badiiy til bobidagi mahoratiga qoyil qoldi, tan berdi. Hatto o'sha 30-yillar muhitida turib, "O'tkan kunlar"ni ayamay tanqid etgan Sotti Husayn ham yozuvchining "o'zbek adabiy tilining takomilida katta xizmati bor"ligini ta'kidladi: "A.Qodiriy "O'tkan kunlar" ro'manini asosan hozirg'i adabiy til bilan yozg'an. Adabiy tilimizning yaxshi ishlanmaganidan xalq orasida iste'moldag'i

soʻzlarni diqqat bilan terib, oʻz oʻrnida ishlatmishdir. Til ustida maxtarliq, taqdir etarlik ish koʻrsatgan”. S.Husayn Qodiriy qoʻllagan soʻzlarni tasniflaydi; romandagi jozibali tasviriy nuqталarga diqqat qaratadi, xalq jonli tildan, ogʻzaki ijod namunalari dan oʻrinli foydalanganiga urgʻu beradi.

Bunday mulohazalar Abdulla Qodiriyning nomi oqlanayotgan 60-yillar arafasida ham, qatigni puflab ichayotgan ziyolilar masalaning mafkuraviy tomoniga nihoyatda ehtiyot boʻlib yondashgani holda “har ikki romanning tili boy, sodda va badiiy jihatdan yuksak boʻlishi bilan, avtorning mohirligi bilan katta soʻz sanʼatkorligidan darak berar edi” (S.Abdulla fikri), “mening nazarimda, Abdulla Qodiriy oʻsha paytda oʻz tili va mahorati bilan boshqalardan ajralib turadigan isteʼdodli soʻz sanʼatkori ekanini koʻrsatgan edi” (M.Muhamedov fikri) kabi qarashlarni eʼtirof etdilar.

Mamlakatimizning muhtaram birinchi Prezidenti I.A. Karimov buyuk adib haqida shunday fikrlarni taʼkidlab oʻtganlar: «Yurtimizda Abdulla Qodiriy asarlari kirib bormagan birorta ham xonadon boʻlmasa kerak. U faqat oʻzbeklarning emas, balki Turkiston xalqlarining ham sevimli adibi, ozodlik va istiqlol kuychisidir». Darhaqiqat, oradan sal kam bir asr oʻtgan boʻlsa-da, bugun ham Abdulla Qodiriyning oʻzbek adabiy til taraqqiyotiga qoʻshgan beqiyos xizmatlari yurak-yurakdan eʼtirof etishga, adibning mahorati, goʻzal yozgʻichi - qalamiga tahsin aytishga majburmiz.

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## ПРЕПОДАВАТЕЛИ И ТЕХНОЛОГИИ: РОЛЬ ПРЕПОДАВАТЕЛЕЙ В ЭПОХУ ЭЛЕКТРОННОГО ОБУЧЕНИЯ

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**Аннотация:** Эта статья исследует эволюцию роли преподавателей в контексте электронного обучения и дистанционного образования. В эпоху, когда доступ к информации и технологиям стал более обширным, преподаватели играют ключевую роль как навигаторы, менторы, организаторы образовательного процесса. Статья подробно рассматривает, как преподаватели адаптируются к вызовам современного обучения, создают персонализированные образовательные опыты и поддерживают студентов на пути к успеху.

**Ключевые слова:** преподаватели, электронное обучение, индивидуализация обучения, навигация в образовании, менторство в обучении, обратная связь студентам, организация образования, технологии в образовании.

## O'QITUVCHILAR VA TEXNOLOGIYALAR: INFORMATSION ASRDA O'QITUVCHILARNING O'RNI

**Annotatsiya:** Ushbu maqola bugungi davrda elektron va masofaviy ta'lim rivojida o'qituvchilarning roli va o'rni tahlil qilingan. O'qituvchilar, murabbiylar va mentorlar ta'limni tashkil etishda axborot va texnologiyalardan foydalanish imkoniyatlari kengaymoqda. Maqolada o'qituvchilarning zamonaviy ta'lim muammolariga moslashuvchanlik, shaxsiy tajribaga ega bo'lishi, yaratishi va muvaffaqiyatga erishish yo'lida talabalarni rag'batlantirish, qo'llab-quvvatlashi mexanizmlari ko'rib chiqildi.

**Kalit so'zlar:** o'qituvchilar, elektron ta'lim, ta'limni individuallashtirish, ta'limda navigatsiya, o'rganishda mentorlik, talabalar bilan fikr almashish, ta'limni tashkil etish, ta'limda texnologiya.

## TEACHERS AND TECHNOLOGY: THE ROLE OF TEACHERS IN THE AGE OF E-LEARNING

**Abstract:** *This article explores the evolution of the role of teachers in the context of e-learning and distance education. In an era when access to information and technology has become more extensive, teachers play a key role as navigators, mentors, and organizers of the educational process. The article takes an in-depth look at how educators are adapting to the challenges of modern learning, creating personalized learning experiences, and supporting students on their path to success.*

**Key words:** *teachers, e-learning, individualization of learning, navigation in education, mentoring in learning, feedback to students, organization of education, technology in education.*

В современном мире, пронизанном быстро развивающимися технологиями, образование неизбежно подвергается преобразованиям. Эпоха электронного обучения и дистанционного образования стала неразрывной частью нашей образовательной реальности. В этом новом учебном ландшафте, в котором информация стала более доступной, а образовательные ресурсы стали многообразными, роль преподавателей становится более актуальной и значимой, чем когда-либо. Данная статья приглашает вас исследовать эволюцию образования и роль преподавателей в контексте электронного обучения. Мы рассмотрим, каким образом преподаватели, несмотря на внедрение современных технологий, остаются неотъемлемой частью образовательного процесса. Мы рассмотрим, как они становятся менторами и организаторами, а также как они вносят персонализацию и качество в обучение студентов. В эпоху, когда информация и знания легко доступны на нажатие кнопки, преподаватели играют ключевую роль в том, как эти знания передаются и усваиваются. Давайте подробнее рассмотрим, как преподаватели адаптируются к вызовам современного образования и влияют на будущее образования. [1.55-60]

Эпоха электронного обучения сопровождается изменением роли преподавателей в образовательном процессе. Если ранее преподаватель часто выступал в качестве источника знаний, то с появлением интернета и доступа к огромному объему информации студенты получили возможность самостоятельно исследовать темы.

В современной эпохе электронного обучения преподаватели стали настоящими навигаторами и менторами в мире знаний. Их роль перестала ограничиваться простой передачей информации, и теперь они выполняют

ключевые функции по ориентации и поддержке студентов в океане доступной информации. В этой части мы рассмотрим, каким образом преподаватели превращаются в навигаторов и менторов и какие преимущества это приносит образовательному процессу. [2. 39-41] Когда мы говорим о преподавателях как навигаторах, мы обращаем внимание на их способность ориентировать студентов в мире образования и информации. В интернете доступно огромное количество информации на самые разные темы, и студенты часто ощущают потребность в руководстве, чтобы выбрать правильные источники и материалы для изучения.

Преподаватели помогают студентам искать и выбирать качественные образовательные ресурсы, что позволяет им уделять больше времени изучению, а не поиску. Они могут рекомендовать учебники, научные статьи, видео уроки, онлайн-курсы и другие источники, которые соответствуют учебной программе и целям обучения. Важной частью роли навигатора является обучение студентов критическому мышлению. [3.109-113] Преподаватели научают их анализировать и оценивать информацию, проверять ее на достоверность и адекватность. Эти навыки не только помогают студентам справляться с текущими заданиями, но и развивают навык самостоятельного обучения, который будет полезен им в будущем. Преподаватели также выступают в роли менторов, предоставляя студентам поддержку и руководство на протяжении их образовательного пути. [4.163-166] Эта функция становится особенно важной в дистанционном обучении, где студенты могут чувствовать себя более изолированными.

Менторы помогают студентам разрабатывать цели обучения и планы развития. Они могут обсуждать с ними их интересы и амбиции, а также помогать выбирать курсы и проекты, которые соответствуют их карьерным планам. Таким образом, преподаватели становятся частью пути студентов к личному и профессиональному росту. Менторы предоставляют студентам мотивацию и обратную связь. Они помогают студентам преодолевать трудности и преодолевать препятствия на пути к образовательным целям. Обратная связь от ментора может быть вдохновляющей и помогать студентам повышать качество своих работ и достигать лучших результатов. Роль преподавателей как навигаторов и менторов в мире электронного обучения становится все более значимой. Их способность помогать студентам ориентироваться в огромном объеме информации и обеспечивать поддержку на пути обучения делает образовательный процесс более эффективным и значимым для студентов. [5.76-80] В этой эпохе электронного обучения преподаватели не просто передают

знания, они создают ценные образовательные опыты и помогают студентам развиваться как личности и профессионалы.

Одним из важных аспектов роли преподавателей в современной эпохе электронного обучения является индивидуализация обучения. Электронные технологии и дистанционное обучение предоставляют уникальную возможность адаптировать учебный процесс под индивидуальные потребности каждого студента. В этой части мы рассмотрим, каким образом преподаватели создают персонализированные образовательные опыты и какие преимущества это приносит обучению. Преподаватели используют данные о знаниях и навыках студентов, чтобы создавать учебные планы, соответствующие их текущему уровню. Это позволяет избегать избыточного материала для продвинутых студентов и обеспечивать дополнительную поддержку для тех, кто нуждается в укреплении базы.[6.15-30] Преподаватели также могут выбирать методики обучения, которые лучше всего подходят для каждого студента. Например, некоторые студенты могут предпочитать обучение через видеолекции, в то время как другие лучше усваивают информацию из текстовых материалов или интерактивных заданий. Индивидуализация методик позволяет учиться более эффективно. Преподаватели помогают студентам определить свои сильные и слабые стороны в учебе. Это может включать в себя оценку их интересов, предпочтений и целей. На основе этой информации преподаватели могут предоставлять дополнительные задания и ресурсы для развития конкретных навыков.[7.42-45]

Индивидуализированный подход позволяет студентам участвовать в проектах и заданиях, которые соответствуют их интересам и карьерным целям. Это может способствовать более глубокому пониманию и мотивации, так как студенты видят практическую применимость учебного материала. Индивидуализированное обучение способствует развитию навыков самостоятельного обучения. Студенты учатся самостоятельно планировать свое обучение, управлять временем и анализировать свой прогресс. Эти навыки будут полезны им в будущем, когда им придется продолжать обучение и самостоятельно развиваться. Индивидуализация обучения также способствует активному участию студентов в учебном процессе.[8.98-104] Студенты более мотивированы изучать материал, который они считают релевантным для своих целей. Кроме того, они могут лучше контролировать свой образовательный опыт и учиться на основе своих собственных потребностей. Индивидуализация обучения под руководством преподавателей открывает двери для более эффективного и адаптированного обучения. Этот персонализированный подход

позволяет студентам развивать свой потенциал, развивать уникальные навыки и подготавливаться к будущим вызовам.

Организация обучения – это одна из важнейших функций преподавателей в эпоху электронного обучения. В современном мире, где технологии и интернет проникли в образование, преподаватели остаются организаторами образовательного процесса. В этой части мы рассмотрим, каким образом преподаватели эффективно организуют обучение и какие методы они используют для обеспечения качественного образования. Преподаватели разрабатывают учебные планы, которые соответствуют учебной программе и целям обучения. Важно, чтобы учебный материал был структурирован и легко доступен для студентов. Преподаватели также могут создавать дополнительные материалы, задания и ресурсы, чтобы адаптировать учебный процесс под конкретные потребности студентов. С развитием технологий преподаватели могут использовать интерактивные методики обучения, такие как вебинары, виртуальные лекции и образовательные платформы. Эти методики способствуют активному взаимодействию студентов и облегчают доступ к учебному материалу. Преподаватели организуют коммуникацию между студентами и сами собой. Они могут использовать электронную почту, чаты, форумы и видеоконференции для обсуждения учебных вопросов, заданий и проектов. Эффективная коммуникация способствует пониманию и учебному процессу.

Организация обучения в онлайн-среде требует от преподавателей умения управлять учебным контентом и ресурсами в виртуальной среде. Преподаватели могут использовать специализированные образовательные платформы, устанавливать сроки выполнения заданий и оценивать студентов через онлайн-системы. Преподаватели оценивают успеваемость студентов и предоставляют им обратную связь. Это позволяет студентам видеть свой прогресс и мотивирует их к улучшению. Оценка может быть как количественной, так и качественной, и она важна для оценки уровня усвоения материала. Преподаватели предоставляют индивидуальную обратную связь студентам, помогая им понять свои сильные и слабые стороны и давая рекомендации по улучшению. Эта обратная связь может быть особенно ценной в дистанционном обучении, где студенты могут чувствовать себя более изолированными. Организация обучения – это ключевая роль преподавателей в эпоху электронного обучения. Они разрабатывают учебные планы, организуют учебный процесс, поддерживают коммуникацию и обеспечивают оценку успеваемости студентов. Эффективная

организация обучения создает благоприятные условия для качественного образования и помогает студентам достичь своих учебных целей.

В эпоху электронного обучения, где технологии и доступ к информации играют центральную роль, роль преподавателей остается несомненно важной и влиятельной. Преподаватели становятся навигаторами, менторами, индивидуализаторами, организаторами и оценщиками в учебном процессе, создавая образовательные опыты, которые способствуют развитию студентов и их успешной подготовке к будущим вызовам.

Как навигаторы, преподаватели помогают студентам ориентироваться в огромном мире информации, находить релевантные ресурсы и развивать критическое мышление. Как менторы, они поддерживают студентов на пути обучения, помогают им определять свои цели и мотивируют к самосовершенствованию. Как индивидуализаторы, преподаватели создают учебные планы и материалы, соответствующие индивидуальным потребностям студентов, позволяя им развиваться в своем собственном темпе. Как организаторы, они структурируют учебный процесс, обеспечивают доступ к ресурсам и обеспечивают эффективную коммуникацию. Как оценщики, они оценивают успеваемость студентов и предоставляют обратную связь, позволяя им совершенствоваться. Электронное обучение и технологии создают уникальные возможности для образования, но они становятся более эффективными и ценными под руководством опытных и преданных преподавателей. Совместное взаимодействие между технологией и человеческим опытом позволяет создавать наилучшие образовательные возможности для студентов. Преподаватели продолжают оставаться сердцем и душой образовательного процесса, и их роль нельзя переоценить в создании будущих лидеров и инноваторов.



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## GREEN ECONOMY - THE CONCEPT OF ECONOMIC DEVELOPMENT

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**Abstract:** *In the contemporary world, environmental concerns and sustainable development are increasingly taking center stage. Within this context, the concept of the green economy emerges as a pivotal component of a strategy aimed at achieving balanced socio-economic progress while respecting the environment. The green economy represents an innovative approach to organizing production and consumption, seeking to minimize the negative impact on the environment. This article explores the fundamental principles and advantages of the green economy, examining its role in shaping a sustainable future. From the implementation of efficient technologies to the creation of sustainable business models, we delve into how the green economy can be a decisive factor in achieving global sustainability and preserving the richness of natural resources for future generations.*

**Keywords:** *Green Economy, Sustainable Development, Socio-economic Progress, Efficient Technologies, Global Sustainability.*

## ЗЕЛЕНАЯ ЭКОНОМИКА - КОНЦЕПЦИЯ ЭКОНОМИЧЕСКОГО РАЗВИТИЯ

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**Аннотация:** *В современном мире проблемы окружающей среды и устойчивого развития все более занимают центральное место. В этом контексте концепция зеленой экономики выступает в качестве ключевого компонента стратегии, направленной на достижение сбалансированного социально-экономического прогресса с уважением к окружающей среде. Зеленая экономика представляет собой инновационный подход к организации производства и потребления, направленный на минимизацию негативного воздействия на окружающую среду. В данной статье рассматриваются основные принципы и преимущества зеленой экономики, исследуется ее роль в формировании устойчивого будущего. От внедрения эффективных технологий*

до создания устойчивых бизнес-моделей мы глубоко погружаемся в то, как зеленая экономика может стать решающим фактором в достижении глобальной устойчивости и сохранении богатства природных ресурсов для будущих поколений.

**Ключевые слова:** Зеленая Экономика, Устойчивое Развитие, Социально-экономический Прогресс, Эффективные Технологии, Глобальная Устойчивость.

## YASHIL IQTISODIYOT - IQTISODIY RIVOJLANISH KONSEPSIYASI

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**Annotatsiya:** Zamonaviy dunyoda ekologik muammolar va barqaror rivojlanish borgan sari markaziy o'rinni egallab bormoqda. Shu nuqtai nazardan, yashil iqtisodiyot kontsepsiyasi atrof-muhitga nisbatan muvozanatli ijtimoiy va iqtisodiy taraqqiyotga erishishga qaratilgan strategiyaning asosiy tarkibiy qismi sifatida namoyon bo'ladi. Yashil iqtisodiyot - ishlab chiqarish va iste'molni tashkil etishning innovatsion yondashuvi bo'lib, atrof-muhitga salbiy ta'sirni minimallashtirishga qaratilgan. Ushbu davlat yashil iqtisodiyotning asosiy tamoyillari va afzalliklarini o'rganadi va uning barqaror ruhni shakllantirishdagi rolini o'rganadi. Samarali texnologiyalarni qabul qilish va barqaror biznes modellarini yaratish yashil iqtisodiyot global barqarorlikka erishish va kelajak avlodlar uchun tabiiy resurslarni saqlashda muhim omil bo'lishi mumkinligiga chuqur asoslanadi.

**Kalit so'zlar:** "Yashil iqtisodiyot", "Barqaror rivojlanish", "Ijtimoiy-iqtisodiy taraqqiyot", "Samarali texnologiyalar", "Global barqarorlik".

### Introduction

The green economy is a concept of economic development aimed at the sustainable use of resources and environmental protection. It seeks to minimize the negative impact on nature and maximize the social responsibility of businesses. The green economy involves the development of new technologies, increased resource efficiency, the implementation of waste processing and disposal methods, reduction of pollutant emissions, and more. Its main goals include job creation, improving the well-being of the population, and reducing the threat of climate change.

In the modern world, the green economy is becoming increasingly popular, with many countries and companies recognizing the need for its implementation. For instance, the European Union has set a goal to achieve climate neutrality by 2050, and

some companies are transitioning to the use of renewable energy sources and environmentally friendly technologies [1].

The green economy is an economic model based on the use of eco-friendly technologies and resources, with the goal of reducing the negative impact of human activities on the environment and achieving sustainable societal development. This model is built on the concept of "triple bottom line" – combining economic, environmental, and social efficiency [2].

A crucial aspect of the green economy is waste disposal and resource reuse. This allows for a reduction in the negative impact on the environment and creates additional opportunities for the development of new business directions.

### **Main part**

The transition to a green economy is also crucial in terms of creating new jobs and developing new sectors of the economy that contribute to sustainable development and reduce dependence on oil and gas revenues [3]. Additionally, the green economy allows for a reduction in resource exploitation costs, which is economically beneficial and contributes to a decrease in the carbon footprint.

However, transitioning to a green economy requires significant investments in new technologies, infrastructure development, and workforce training. It is also necessary to amend many laws and regulations governing economic activities to create a conducive environment for the development of green industries.

In summary, the transition to a green economy will not only help reduce the negative impact of human activities on the environment but will also act as a driving force for economic development and social progress.

Moreover, the shift to a green economy can have a positive effect on public health. The reduction of emissions of pollutants into the air and water can lead to a decrease in respiratory, cardiovascular diseases, and cancer [4]. The green economy can also generate new job opportunities in various sectors, such as the manufacturing and installation of equipment for renewable energy sources, environmentally friendly transportation systems, waste processing, and more.

However, the transition to a green economy may also have some negative consequences. Some industries related to the use of fossil fuels may decrease their activity, leading to job losses [5]. Additionally, the transition to a green economy may require significant investments and time, posing a challenge for many countries.

In conclusion, the transition to a green economy is of great significance for preserving natural resources, protecting the environment, and creating a more sustainable and healthy future economy. However, further research and improvements

in technologies are necessary to ensure a more efficient and safe transition to a green economy.

### **Key Elements of the Green Economy:**

The green economy is a multidimensional concept that encompasses various elements. The key elements of the green economy include:

#### 1. Environmentally Sustainable Production and Consumption:

- Production and consumption that take into account environmental aspects such as energy efficiency, reduction of harmful substance emissions, waste recycling, and the use of renewable energy sources.

#### 2. Green Investments:

- Investments in projects aimed at reducing negative environmental impact. Such projects include the production of renewable energy, energy efficiency in buildings and transportation, and the purification of water and air.

#### 3. Development of Green Technologies:

- The development and utilization of technologies that allow more efficient use of natural resources and reduce negative environmental impact. Examples of such technologies include solar panels, wind energy, electric vehicles, emissions reduction, and more [6].

#### 4. Environmental Education and Information:

- The process of increasing awareness and educating the population about the principles of the green economy and environmental sustainability. This can be implemented through educational programs, informational campaigns, public events, etc.

#### 5. Development of Environmental Standards and Regulations:

- The development and implementation of standards and regulations ensuring the sustainable use of natural resources and environmental protection. These standards and regulations may relate to production processes, consumer products, emissions of harmful substances, etc.

### **Advantages of Transitioning to a Green Economy:**

The transition to a green economy can bring numerous benefits to society, the economy, and the environment:

#### 1. Reduction of Harmful Substance Emissions and Environmental Pollution:

- Contributing to a healthier life for people and improving the global environmental situation.

#### 2. Creation of New Jobs in Ecology and Energy Sectors:

- Fostering economic development and increasing employment levels.

#### 3. Reduced Dependence on Oil and Gas:

- Enhancing energy security and reducing dependence on the import of energy resources.

4. Increased Resource Use Efficiency and Reduced Production Costs:

- Lowering company expenses and promoting competitiveness.

5. Stimulation of Innovation and Adoption of New Technologies:

- Contributing to the advancement of science and technology and improving the standard of living [7].

6. Mitigation of Global Warming and Prevention of Climate Change Consequences:

- Addressing the long-term impact of climate change.

7. Establishment of a Sustainable Economic Model:

- Ensuring sustainable development for society in the long run.

In conclusion, the transition to a green economy can yield many positive outcomes that will have a beneficial impact on the economy, society, and the environment as a whole [8].

## Conclusion

The transition to a green economy is an essential step to ensure the sustainable future of our planet and preserve its natural resources for future generations. In the face of climate change, environmental pollution, and depletion of natural resources, the shift towards a more environmentally friendly economy becomes increasingly crucial. The future generation deserves to live in a world where natural resources are preserved, air and water are clean, and the climate is stable. Therefore, transitioning to a green economy should become a priority for every state and society as a whole to guarantee a sustainable future for all.

The green economy is a key element of sustainable development, capable of providing essential resources for future generations and preserving the environment for subsequent ones. The transition to a green economy will not only reduce carbon emissions and other harmful substances but also create new jobs in various economic sectors. Furthermore, sustainable production practices and products will become the standard in the future, enhancing competitiveness and ensuring a more stable economic environment for future generations.

Moreover, the transition to a green economy will help reduce dependence on oil and other unsustainable energy sources, making the economy more resilient to fluctuations in energy resource prices and geopolitical risks. It will also contribute to energy cost savings, benefiting all citizens, including future generations.

Finally, the transition to a green economy supports the United Nations' Sustainable Development Goals, including the reduction of inequality, poverty, and hunger, as well as ensuring the health and well-being of both people and the planet. Overall, transitioning to a green economy is a necessary step to ensure a sustainable future for the upcoming generations and create a more favorable economic environment for all citizens.

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## MARKAZIY OSIYO ENERGETIKA XAVFSIZLIGIGA DOIR MUAMMOLAR VA ULARNI HAL QILISH ISTIQBOLLARI

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*Annotatsiya:* Maqolada Markaziy Osiyo davlatlarining jahon energetika sohasidagi o'rnini va ahamiyati, mamlakatlardagi energetika sohasidagi muammolar tahlil qilinadi. Shuningdek mavjud muammolarni hal qilish borasida olib borilayotgan hamkorlik aloqalari, muqobil energiya manbalari borasida amalga oshirilayotgan ishlar, energetika sohasidagi istiqbolli loyihalar haqida so'z yuritilib, yuzaga kelishi mumkin bo'lgan xavf va muammolarni bartaraf etish strategiyalari taklif qilinadi.

*Abstract.* This article analyzes the role and importance of the countries of Central Asia in the world energy sector, and the problems in the energy sector in the countries. Also, it is discussed about the cooperation relations that are being carried out to solve the existing problems, the work being done on alternative energy sources, prospective projects in the field of energy, and strategies for eliminating possible risks and problems are proposed.

*Kalit so'zlar:* Markaziy Osiyo, Energetika xavfsizligi, geosiyosiy muammolar, Xalqaro hamkorlik, Qayta tiklanadigan energiya manbalari, Yevropa Ittifoqi, Infratuzilma, Muvofiqlashtiruvchi-dispatcherlik markazi, energiya zaxiralari, Rog'un GESi, "energetika halqasi", atom elektr stansiyalari.

### KIRISH

Markaziy Osiyo dunyo kuch markazlari uchun global nazoratni amalga oshirish yo'lidagi eng muhim mintaqaga hisoblanadi. AQSh va Rossiya Federatsiyasi o'rtasidagi qarama-qarshilik eng kulminatsiyasiga chiqqan va Xitoy Xalq Respublikasi 1-davlat maqomiga ochiq davo qilib turgan bugungi kunda Markaziy Osiyoning geosiyosiy ahamiyati har qachongidan ortib bormoqda. Mintaqa davlatlarining katta tabiiy boyliklar zaxiralari ega ekanligi ushbu hududni qudratli davlatlarning geosiyosiy manfaatlari kesishgan nuqtaga aylantiradi. Markaziy Osiyo mamlakatlarining energetika siyosati iqtisodiy jihatdan rivojlanishning muhim tarkibiy qismi sifatida energiya manbalari uchun qattiq raqobat sharoitida davlatlarning energetika xavfsizliginida minlash zarurati bilan belgilanadi. Tasdiqlangan ma'lumotlarga ko'ra,



Markaziy Osiyo mamlakatlarida neft zaxiralarining umumiy hajmi 15-31 milliard barrel, tabiiy gaz zaxiralarining umumiy hajmi esa 230-360 trln. kub metr bo‘lib bu ko‘rsatgich jahon neft resurslarining 7,2% va gaz resurslarining 7% ni tashkil qiladi.

Bugungi globallashuv sharoitida davlatlarning energetika xavfsizligi global siyosiy jarayonlarning eng muhim vazifasiga aylanmoqda. Tabiiy zaxiralarning kamayib borishi, yirik neft zaxiralariga ega mamlakatlardagi siyosiy va iqtisodiy inqirozlarning kuchayish jarayoni xom ashyo istemolining keskin ortib borish jarayoni bilan birgalikda kechmoqda. Bu vaziyatda energetika xavfsizligi muammosi dolzarb ahamiyat kasb etib, xalqaro vaziyatning keskinlashishi sharoitida energetika xavfsizligini ta‘minlash xalqaro munosabatlar ishtirokchilari uchun muhim vazifaga aylanmoqda. Shu o‘rinda aytib o‘tish joizki, “Energetik xavfsizlik” muammosi nafaqat iqtisodiy, balki davlatning tashqi va ichki siyosatini ma‘lum darajada belgilab beruvchi siyosiy masala hamdir. Energetik xavfsizlik – bu butun jahon, jamiyat, mamlakat, fuqarolar va ular iqtisodiyotining ichki va tashqi tahdid omillari ta‘sirida iqtisodiy jihatdan olishi mumkin bo‘lgan miqdor ma‘lum sifat darajasidagi yoqilg‘i-energetik resurslarining kamyob bo‘lib, yetishmay qolishidan himoyalangan holati. Umuman olganda, Markaziy Osiyo mintaqasi jahon miqyosida ahamiyatga molik, jahon mamlakatlari qo‘lga kiritishdan manfaatdor bo‘lgan gaz, neft kabi energiya resurslari hamda oltin, uran, kumush, nodir metallar singari boy tabiiy resurs konlariga ega bo‘lgan hudud sanaladi.

### **ADABIYOTLAR TAHLILI VA METODOLOGIYA**

Markaziy Osiyo davlatlarining energetika sohasiga oid ma‘lumotlar va materiallar bilan tanishib chiqish jarayonida shuni guvohi bo‘lamizki, mintaqamizda energetika xavfsizligi sohasida bir qator muammolar mavjud. Birinchidan, energiya resurslarining notekis taqsimlanganligi. Ma‘lumki, mintaqani shartli ravishda ikkiga bo‘lish mumkin: yuqori oqim mamlakatlari (Qirg‘iziston, Tojikiston) hamda quyi oqim mamlakatlari (O‘zbekiston, Qozog‘iston va Turkmaniston). Yuqori oqim mamlakatlari o‘zining boy suv resurslariga egalik qilishi bilan ajralib tursa, quyi oqim davlatlari ulkan neft- gaz manbalariga ega. Ikkinchidan, mamlakatlarning energetika xavfsizligi ularning xom ashyo eksportiga bog‘liq. Markaziy Osiyoning aksariyat davlatlari neft, gaz va ko‘mir kabi energiya resurslarini eksport qilishadi. Bu global energiya narxlarining o‘zgarishi va asosiy iste‘molchilar talabiga nisbatan zaiflikni keltirib chiqaradi. Uchinchidan, mintaqada davlatlarining deyarli barchasida energetika sohasiga doir infratuzilmaviy muammolar bor. Eskirgan infratuzilma barqaror energiya oqimini ta‘minlashda to‘siq bo‘lishi va ta‘minot xavfsizligiga tahdid solishi mumkin. To‘rtinchidan, mintaqada davlatlari iqlim o‘zgarishlariga nisbatan nihoyatda ta‘sirchan.

Iqlim o'zgarishi mintaqada energiya ishlab chiqarishga salbiy ta'sir ko'rsatishi mumkin. Qurg'oqchilik va haroratning ko'tarilishi kabi ekstremal iqlim sharoitlari energiya jarayonlari samaradorligini pasaytirishi va energiya xavfsizligiga tahdid solishi mumkin<sup>1</sup>. Ayniqsa, energiya ishlab chiqarish uchun suvga qaram bo'lgan mamlakatlar o'rtasida bu holat keskinlik keltirib chiqaruvchi asosiy omilga aylanmoqda.

## NATIJALAR

Iqtisodiyot va aholi sonining o'sib botayotgan bugungi kunda Markaziy Osiyo mamlakatlari o'z rivojlanishi uchun ko'proq energiyaga muhtoj. Mintaqada iqlim o'zgarishining kuchayib borayotgan ta'siri mamlakatlar uglerod chiqindilarini sezilarli darajada kamaytirishi, toza va qayta tiklanadigan energiya manbalariga o'tishni tezlashtirishi kerakligini anglatadi. Osiyo taraqqiyot banki (OTB) tomonidan CAREC (Central Asian Regional Economic Cooperation - Markaziy Osiyo Mintaqaviy Iqtisodiy Hamkorligi) "Energetika istiqboli 2030" hisobotida Markaziy Osiya davlatlarining energetika manzarasi va bozor tendensiyalari, mintaqaviy hamkorlikka hissa qo'shayotgan mamlakatlar va hamkorlik aloqalarini tahlil qilish orqali mintaqaning energetika kelajagini tanqidiy baholangan.<sup>2</sup> Jumladan CAREC mintaqasida energiyaga bo'lgan talab 2030-yilga borib 30 foizdan ortiq o'sadi. 2020-yilda CAREC mamlakatlarida energiyaga talab 204 million tonna neft ekvivalentini tashkil etdi. 2030-yilga borib, bu ko'rsatkich taxminan 32 foizga oshadi, bunda elektr energiyasi eng yirik iste'mol manbalaridan biriga aylanadi. Energiya tarkibidagi tabiiy gaz iste'moli ham o'sishi kutilmoqda, bu uning elektr energiyasini ishlab chiqarish va turar-joy hamda sanoat tarmoqlarida to'g'ridan-to'g'ri iste'mol qilish uchun yonilg'i sifatidagi ustun mavqei aks ettiradi. Birgina mintaqadagi O'zbekiston energetikasida bugungi kundagi vaziyat bir muncha og'ir holatda. O'rnatilgan quvvat qog'ozda 12 GVtni tashkil etsa-da, amalda 10 GVt mavjud, bizga esa taxminan 15–20 GVt quvvat kerak. Unda ishlab chiqariladigan elektr energiyasining asosiy qismi IESlarda ishlab chiqariladi va mamlakatdagi Angren IES dan boshqa barcha IESlarda asosiy yonilg'i tabiiy gazdir.<sup>3</sup> Bu holatga "Ma'no" tadqiqot tashabbuslari markazi direktori Baxtiyor

<sup>1</sup> Kurbanabayev M.A, Maksetov O.X, Sultonov D.Q. MARKAZIY OSIYODA ENERGIYA XAVFSIZLIGI: HOZIRGI HOLAT VA RIVOJLANISH ISTIQBOLLARI. Multidisciplinary Scientific Journal. ISSN: 2181-4147 VOLUME 1 | ISSUE 32 | 2023 November, 2023.

<sup>2</sup> ASIAN DEVELOPMENT BANK. CAREC Energy Outlook 2030 | DECEMBER 2022. ISBN 978-92-9269-954-3. [CAREC Energy Outlook 2030 | Asian Development Bank \(adb.org\)](https://www.adb.org/publications/carec-energy-outlook-2030)

<sup>3</sup> Xo'janov R. O'zbekistonning elektr energetikasi kelajagi xususida: insoniyat uchun axloqiy energiya ta'minoti, muqobil energiya va yashil narx-tarifni qanday tadbir etish mumkin. Noyabr, 2018. <https://www.spot.uz/oz/2018/11/11/elektr/>

Ergashev quyidagicha o‘z munosabatini bildiradi: “Hozir O‘zbekistonda 70 milliard kilovatt-soatdan ortiq elektr energiyasi ishlab chiqariladi va foydalaniladi, 15-yildan keyin talab kamida 110 milliardga oshishi kutilmoqda. Shuningdek, O‘zbekistonda elektr energiyasining qariyb 85 foizi tabiiy gaz yoqiladigan issiqlik elektr stansiyalari yordamida ishlab chiqariladi.<sup>1</sup> Ushbu holatda muammolarning yechim topishi uchun Markaziy Osiyo davlatlarining har biridan muammoga manzilli yondashuvni talab qiluvchi bir qator chora tadbirlar talab qilinadi. Jumladan, resurslar notekis taqsimlangan sharoitda mintqa davlatlari o‘zaro integratsiya jarayonlarini rivojlantirishi, muammolarga kollektiv yondashgan holatda, aniq amaliy harakatlarni amalgah oshirish, muqobil energiya manbalarini tadbiriq qilish sari harakatlarni jadallashtirishlari lozim. Potentsial mojarolarning oldini olish uchun suvni boshqarish bo‘yicha izchil yondashuvlarni ishlab chiqish, diplomatik stol atrofida talab va ehtiyojlardan kelib chiqqan holatda muammolarga birgalikda yechim topishga harakat qilinishi samarodorlikni ta‘minlaydi. Shuningdek, energetika resurslarini xom ashyo sifatida eksport qilinishi ushbu sohani geosiyosiy vaziyatga nisbatan o‘ta ta‘sirchan holatga kelib qolgan vaziyatda iqtisodiyotlarni diversifikatsiya qilish va qayta tiklanadigan energiya manbalarini rivojlantirish sari harakat qilmog‘imiz zarur. Bundan tashqari, energiya ishlab chiqarish, tashish va qayta ishlash infratuzilmasini rivojlantirish va takomillashtirish zarurati ustuvor vazifalardan biri hisoblanadi. Sovet Ittifoqining eskirgan energetika infratuzilmasidan foydalanishda davom etayotgan alohida Markaziy Osiyo davlatlari bugungi kunda dunyodagi energiya tejamkorligi past 20 ta davlat qatoriga kiradi.<sup>2</sup> Elektr sohasida energiya yo‘qotishlari 20 foizga yetishi mumkin. Elektr tarmog‘ini yangilash va aqlli hisoblagichlarni o‘rnatish energiya yo‘qotishlarini minimallashtirish, mintaqadagi energetika kompaniyalarining moliyaviy barqarorligini oshirishga yordam beradi. Hozirgi kunda mintaqasida uzatish va tarqatish infratuzilmasini yangilash 25-49 milliard dollarga baholanmoqda.

Aytish joizki energetika sohasidagi muammoli vaziyat Markaziy Osiyoning deyarli barcha davlatlarida mavjud. Kelayotgan bir necha o‘n yillarda hudud aholisi soni ildam o‘ishi va iqtisodiy rivojlanish bilan birga ushbu muammo yanada dolzarb tus olishi kutilmoqda.

Ikkinchidan mintaqada suv tanqisligi muammosi ham yildan yilga tobora sezilarli bo‘lib bormoqda. Bu esa o‘z navbatida yangi GESlar qurish va ulardan to‘laqonli foydalanish imkoniyatini cheklaydi. Ushbu vaziyatda Markaziy Osiyo

<sup>1</sup> Oroskulov T. AES - yagona yo‘lmi? Energiyaga chanqoq Markaziy Osiyo.

<https://oz.sputniknews.uz/20230303/aes---yagona-yolmi-energiyaga-chanqoq-markaziy-osiyo-32614515.html>

<sup>2</sup> Central Asian Regional Economic Cooperation

<https://daryo.uz/2023/01/15/yaqin-yetti-yil-ichida-markaziy-osiyo-da-elektr-energiyasiga-talab-30-foizga-oshadi>

davlatlari birgalikda suv-energetika tizimlarini birlashtirib (MO eneregetik halqasi) Birgalikda yirik GESlar qurilishigi sarmoya kiritib (Qambar-Ota GESi) mavjud energiya tanqisligidan chiqish yo‘llarini izlamoqda. O‘zbekiston, Qozog‘iston va Qirg‘iziston kabi davlatlar esa - atom elektr stansiyalari qurish imkoniyatlarini ham har tomonlama, jidiy o‘rganib chiqmoqda.

Bugungi kunda Markaziy Osiyo davlatlari orasida faqat O‘zbekiston, AES qurilishini amalga oshirishga eng yaqin keldi. Respublika Rossiya bilan 2017-yilda ikkita VVER-1200 energoblokini qurish bo‘yicha shartnoma imzolagan edi. Ikki yildan so‘ng Jizzaxda qurilish uchun maydon tanlandi va seysmologik, gidrologik, meteorologik va ekologik parametrlar bo‘yicha ma‘lumotlar yig‘ila boshlandi.

“O‘zbekiston AES qurish zaruriyati haqida gapiradigan bo‘lsak - sanoatning o‘sishi, respublikaning iqtisodiy rivojlanishi va o‘sib borayotgan aholi farovonligini oshirishni energiya ta‘minotisiz amalga oshirib bo‘lmasligini mamlakat tushunmoqda. Energiya - suv va havodek zarur, O‘zbekiston esa energiya taqchil davlat”,<sup>1</sup> - deydi Ergashev. O‘zbekiston uchun yagona yo‘l muqobil va “yashil” energetikani rivojlantirish ekanligini ta‘kidladi va bunday energiya turiga rasmiy ravishda atom energetikasi ham kirishini ta‘kidladi.

Albatta, muqobil energiya manbalaridan – shamol va quyosh elektr stansiyalaridan foydalanish mumkin, ammo ularning barcha afzalliklariga qaramay, qayta tiklanadigan energiya manbalari tabiat, iqlim sharoitiga va hatto kunning vaqtiga ham juda bog‘liq. Bejizga ularni “taqsimlangan generatsiya” deb atashmaydi – quyosh elektr stansiyalari faqat quyosh bo‘lganda ishlaydi. Shamol elektr stansiyalari bilan ham shunday: energiya mavjudligi shamolning mavjudligiga bog‘liq. Shu o‘rinda albatta gidroenergetikaga alohida e‘tibor berish kerak. O‘zbekistonda GESlar qurish imkoniyati cheklangan bo‘lsa-da, qo‘shni Qirg‘iziston va Tojikistonda foydalanilmayotgan ulkan quvvatlar mavjud. Mintaqadagi barcha davlatlar elektr energiyasi ishlab chiqarishni ko‘paytirishdan manfaatdor va bu borada turli loyihalarni izlamoqda. Shu o‘rinda savol tug‘iladi: nega birgalikda umumiy farovonlik yo‘lida ishlaydigan va toza energiya bilan ta‘minlaydigan GESlarni qurmaymiz? Haqiqatan ham o‘sish bor – Qirg‘iziston, Qozog‘iston va O‘zbekiston qudratli Qambar-Ota gidroelektr stansiyasini qurishni rejalashtirishmoqda. Shuningdek, ayni paytda O‘zbekiston va Tojikiston o‘rtasida Zaravshon darosi xududida GES qurish masalasi ishlab chiqilmoqda. Mintaqadagi barcha davlatlar elektr energiyasi ishlab chiqarishni ko‘paytirishdan manfaatdor va bu borada turli loyihalarni izlamoqda. Shu o‘rinda savol tug‘iladi: nega birgalikda umumiy farovonlik yo‘lida ishlaydigan va toza energiya

<sup>1</sup> Oroskulov T. AES - yagona yo‘lmi? Energiyaga chanqoq Markaziy Osiyo.

<https://oz.sputniknews.uz/20230303/aes---yagona-yolmi-energiyaga-chanqoq-markaziy-osiyo-32614515.html>

bilan ta'minlaydigan GESlarni qurmaymiz? Haqiqatan ham o'sish bor – Qirg'iziston, Qozog'iston va O'zbekiston qudratli Qambar-Ota gidroelektr stansiyasini qurishni rejalashtirishmoqda. Shuningdek, ayni paytda O'zbekiston va Tojikiston o'rtasida Zaravshon darosi xududida GES qurish masalasi ishlab chiqilmoqda. Ushbu harakatlar yuqorida ta'kidlab o'tganimiz, ko'ptomonlama integratsiya aloqalarini rivojlantirish, muammolarga kollektiv yondashuv lozimligining amaliy ifodasidir.

Markaziy Osiyo davlatlari energetika xavfsizligini ta'minlash yo'lida nafaqat o'zaro hamkorlikka, shu bilan bir qatorda, nufuzli institutsional tuzilmalar bilan ham birgalikda ish olib bormoqdalar. Jumladan, Yevropa Ittifoqi-Markaziy Osiyo o'rtasida o'zaro bog'liqlik bo'yicha "Global darvoza" Samarqand konferensiyasiga bag'ishlangan davra suhbatida Yevropa Ittifoqi o'zining "Markaziy Osiyoda barqaror energiya bog'liqligi" (SECCA) yangi loyihasini ishga tushirdi.<sup>1</sup> Umumiy byudjeti 6,8 million yevro bo'lgan SECCA loyihasi Yevropa Ittifoqining ilg'or amaliyotlariga muvofiq holda Markaziy Osiyoda yanada barqaror energiya balansini rag'batlantirishga qaratilgan. Xususan, loyiha barqaror energetika tizimiga o'tish bo'yicha milliy siyosatni kuchaytirish, mintaqada qayta tiklanadigan energiya va energiya samaradorligi bo'yicha investitsiyalar, salohiyat va xabardorlikni oshirishga qaratilgan. So'nggi o'zgarishlar Markaziy Osiyoda istiqbolli barqaror energiya bog'liqligining ijobiy belgilaridan dalolat beradi. Mintaqada iqtisodiy o'sish va aholi sonining ortishi natijasida elektr energiyasiga bo'lgan talab ham ortishi kutilmoqda. Ushbu talabni qondirish uchun katta investitsiyalar, bozor islohotlari va salohiyatni rivojlantirish talab etiladi. Yevropa Ittifoqi tomonidan moliyalashtirilgan "Markaziy Osiyoda barqaror energiya bog'liqligi (SECCA)" (2022-2026) loyihasi Yevropa Ittifoqining ilg'or tajribalariga muvofiq Markaziy Osiyo mintaqasida barqaror energiya birikmasini rivojlantirishga qaratilgan. Loyiha faoliyati energiya samaradorligi (ES) va qayta tiklanadigan energiya (QTE) bo'yicha salohiyatni rivojlantirish, ES va QTE bo'yicha xabardorlikni oshirish va ES va QTE loyihalari uchun investitsiya muhitini yaxshilashni o'z ichiga oladi. Ushbu loyiha orqali Yevropa Ittifoqi iqlim o'zgarishi bilan bog'liq muammolarni samarali hal qilishda qo'shimcha yordam beradi. SECCA Yevropa Ittifoqining atrof-muhit, biologik xilma-xillik, iqlim o'zgarishi, tabiiy ofatlar xavfini kamaytirish, suv va barqaror energiya bo'yicha 15 ta mintaqaviy tashabbuslarini hamda Yevropa Ittifoqining Markaziy Osiyo davlatlari bilan 20 ta ikki tomonlama hamkorlik loyihalarini o'z ichiga oladi. Ushbu loyiha Yevropa Yashil Bitimi va yangi Yevropa Ittifoqining Markaziy Osiyo bo'yicha

<sup>1</sup> [https://www.eeas.europa.eu/delegations/kazakhstan/yevropa-ittifoqining-markaziy-osiyoda-barqaror-energiyani-rivojlantirishga\\_uz?page\\_lang=uz&s=222](https://www.eeas.europa.eu/delegations/kazakhstan/yevropa-ittifoqining-markaziy-osiyoda-barqaror-energiyani-rivojlantirishga_uz?page_lang=uz&s=222)

strategiyasiga asoslanadi. Ikkinchisi, xususan, mintaqaning energiya barqarorligini mustahkamlashga hissa qo'shish, uning iqlim bo'yicha maqsadlariga erishish, ish o'rinlari va biznes imkoniyatlarini yaratish uchun quyosh, shamol va gidroelektr energiyasi bo'yicha mintaqaning salohiyatini oshirish kabi maqsadlarni o'z oldiga qo'yadi. Hozirgi vaqtda mintaqaning muhim barqaror energiya salohiyatidan ko'plab institutsional, moliyaviy, texnik va ijtimoiy to'siqlar tufayli to'liq foydalanilmayapti. SECCA loyihasi ushbu to'siqlarni bartaraf etish va qayta tiklanadigan energiya ishlab chiqarishni ko'paytirish va mintaqada energiya samaradorligini oshirishda katalizator bo'lib xizmat qiladi. Bundan tashqari, SECCA loyihasi energiya samaradorligi va qayta tiklanadigan energiya bo'yicha gender inklyuziv siyosati va qonunchiligini qo'llab-quvvatlash hamda ayollarning sektordagi rolini rag'batlantirish orqali genderni asosiy yo'nalishga aylantiradi.

## XULOSA

Bugungi kunda Markaziy Osiyo mintaqasidagi geosiyosiy jarayonlar, iqlim o'zgarishlari sharoitida suv masalasida kelib chiqayotgan kelishmovchiliklar mintaqa davlatlarining energetika xavfsizligiga tahdid solmoqda. Shu bilan bir qatorda, mintaqa davlatlari o'rtasidagi turli ko'rinishdagi ixtiloflar (Tojikiston-Qirg'iziston chegara muammolari, Qo'shtepa kanali masalasi) ning mavjudligi mintaqah energetika xavfsilik tizimini birmuncha zaiflashtirdi.

Mintaqadagi energetika xavfsizligini ta'minlash, jahon miqyosida o'z pozitsiyalarini yanada mustahkamlash, iqtisodiyotlarini rivojlantirish va mintaqaviy energetika munosabatlarining zamonaviy qiyofasini shakllantirish uchun mintaqah mamlakatlari quyidagilarga e'tibor qaratishlari lozim:

1. Markaziy Osiyo davlatlari o'zaro uyg'un prinsiplarga asoslangan energetika siyosatini ishlab chiqishi va amaliyotga tadbiiq etishlari zarur, bu mintaqaviy energetika munosabatlarda harakatlarni muvofiqlashtirishni ta'minlaydi.

2. Mintaqa davlatlari o'zlaridagi energetika kompaniyalari faoliyatini muvofiqlashtirish, monitoring va boshqarish mexanizmlarining uzluksiz ishlashi juda muhimdir.

3. Xalqaro keskin vaziyat, geosiyosiy, geoiqtisodiy omillar ta'sirida xalqaro maydonda siyosiy kuchlarning transformatsiyasi sharoitida Markaziy Osiyo mamlakatlari tashqi siyosatning energetika va geoiqtisodiy jihatlariga ustuvor ahamiyat berishlari kerak.

4. Mintaqa mamlakatlari o'zlarining energetika sohasini diversifikatsiya qilishi hamda ichki iste'molni samarali boshqarishning zamonaviy mexanizmlarini shakllantirishlari lozim. Bunda ishlab chiqaruvchi, transit qiluvchi va iste'molchi

davlatlar o'rtasida tobora ortib borayotgan o'zaro bog'liqlik tufayli energetika xavfsizligini ta'minlash uchun barcha manfaatdor tomonlar o'rtasida hamkorlik aloqalarini rivojlantirish muhim ahamiyatga ega.

Shuningdek, butun dunyoda qayta tiklanuvchi energiya manbalariga e'tibor kuchayib bormoqda. Tabiiy gaz va neft zaxiralarining yildan-yilga kamayib borishi dunyo davlatlarini boshqa alternativ manbalarga urg'u berishga undamoqda. Shu bois, Markaziy Osiyo davlatlari ham ushbu voqelikka moslashishlari va energetika siyosatlarini modernizatsiya qilishlari, energetika xavfsizligi va energetika munosabatlarining yangi konstruktiv tizimini ta'minlash yo'lida kerakli choralarni ko'rishlari zarur.

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## ПРИЧИНЫ УСТАЛОСТИ ОРГАНИЗМА ВО ВРЕМЯ ЗАНЯТИЙ СПОРТОМ

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***Аннотация:** В статье рассматриваются причины утомления спортсменов во время спортивных нагрузок. Здоровье – бесценный дар, который преподносит человеку природа. Чтобы сохранить спортивное здоровье и укрепить его, с целью оздоровления и профилактики заболеваний необходимо заниматься физической культурой разумно. Чтобы противостоять невзгодам, надо знать свой организм и методами самовосстановления обеспечивать его способность к преодолению вредных влияний и последствий. Укреплять здоровье нужно каждому из нас постепенно. В статье рассматриваются причины утомления спортсменов во время спортивных нагрузок.*

***Ключевые слова:** физические нагрузки, утомление, переутомление, напряженная работа, хроническое утомление, работоспособность, организм, спортсмены.*

Утомление — важнейшая проблема спорта. Знание механизмов утомления и стадий его развития позволяет правильно оценить функциональное состояние и работоспособность спортсменов и должно учитываться при разработке мероприятий, направленных на сохранение здоровья и достижение высоких спортивных результатов. Существует огромное количество теорий происхождения утомления. Утомление – это функциональное состояние организма, вызванное умственной или физической работой, при котором могут наблюдаться временное снижение работоспособности, изменение функций организма и появление субъективного ощущения – усталости. Исходя из этого, принято выделять два основных вида утомления – физическое и умственное, хотя такое деление достаточно условно. Главным и объективным признаком утомления является снижение его работоспособности. При утомлении работоспособность снижается временно, однако она быстро восстанавливается при ежедневном, обычном отдыхе. Состояние утомления имеет свою динамику



– усиливается во время работы и уменьшается в процессе отдыха (активного, пассивного и сна). Утомление следует рассматривать как естественное нормальное функциональное состояние организма в процессе труда. Другим важным критерием оценки утомления является изменение функций организма в период работы. При этом в зависимости от степени утомления функциональные сдвиги могут носить различный характер. В начальной стадии утомления клинико-физиологические и психофизиологические показатели отличаются неустойчивостью и разнонаправленным характером изменений, однако их колебания, как правило, не выходят за пределы физиологических норм. При хроническом утомлении, особенно переутомлении, имеет место однонаправленное значительное ухудшение всех функциональных показателей организма с одновременным снижением уровня профессиональной деятельности человека. Пересмотрим основные теории возникновения утомления. К основным теориям возникновения утомления относятся следующие: 1). истощение энергетических ресурсов в мышцах, 2). засорение мышц продуктами обмена веществ, 3) отравление метаболитами 4) задушение вследствие недостатка кислорода.

Эти локально-гуморальные версии не полностью вскрывают механизмы утомления, так как в качестве его основной причины рассматривают лишь изменения в мышечной ткани.

[1 ]

Самая полагаемая и научно-изученная теория утомления, сформулированная И.М. Сеченовым в 1903 году, всесторонне развития и дополненная А.А. Ухтомским, связывает возникновение утомления только с деятельностью нервной системы, в частности, коры больших полушарий.[2] При этом предполагалось, что основой механизма утомления является ослабление основных нервных процессов в коре головного мозга, нарушение их уравновешенности с относительным преобладанием процесса возбуждения над более ослабленным процессом внутреннего торможения и развитием охранительного торможения.

Нынешние электрофизиологические и биохимические методы исследования и полученные данные не позволяют свести причины утомления к изменениям в каком-то органе или системе органов, в том числе нервной системе. Следовательно, приписывать возникновение первичного утомления какой-либо одной системе неправомерно. [3]

Основным фактором, вызывающим утомление, является физическая или умственная нагрузка, которая падает на афферентные системы во время работы.

Зависимость между величиной нагрузки и степенью утомления почти всегда бывает линейной, то есть чем больше нагрузка, тем более ярко выраженным и ранним является утомление. Помимо абсолютной величины нагрузки, на характере развития утомления сказывается еще и ряд ее особенностей, среди которых следует выделить: статический или динамический характер нагрузки, её постоянный или периодический характер, а также интенсивность нагрузки. С основным фактором, а именно рабочей нагрузкой, ведущим к утомлению, существует список дополнительных или способствующих факторов. Эти факторы сами по себе не ведут к развитию утомления, однако, сочетаясь с действием основного, способствуют более раннему и выраженному наступлению утомления. К числу дополнительных факторов можно отнести: 1. Факторы внешней среды (температура, влажность, газовый состав воздуха, барометрическое давление и др.); 2. Бытовые факторы, а именно нарушение режима труда и отдыха; 3. Изменение привычных суточных биоритмов и выключение сенсорных раздражений; 4. Социально-психологические факторы - мотивация, взаимоотношения в команде, в семье и пр. Основным признаком утомления – снижение работоспособности, которая в процессе выполнения различных физических упражнений изменяется по разным причинам, поэтому физиологические механизмы развития утомления разные. Эти механизмы обусловлены мощностью работы, ее длительностью, характером упражнений, сложностью их выполнения и др.

При выполнении периодической работы высокой степени мощности причиной снижения работоспособности и развития утомления является уменьшение подвижности основных нервных процессов в центральной нервной системе, с преобладанием торможения вследствие большого потока эфферентной импульсации от нервных центров к мышцам и афферентных импульсов от работающих мышц к центрам. Разрушается рабочая система взаимосвязанной активности корковых нейронов. Кроме того, в нейронах падает уровень содержания АТФ и креатинфосфата, и в структурах мозга повышается содержание тормозного медиатора — гамма-аминомасляной кислоты. Огромное значение в развитии утомления при этом имеет изменение функционального состояния самих мышц организма, снижение их возбудимости, лабильности и скорости расслабления. При циклической работе максимальной мощности ведущими причинами утомления является, угнетение деятельности нервных центров и изменение внутренней среды организма. Причиной этому является острый недостаток кислорода, вследствие которого развивается гипоксемия, снижается рН крови, в 20-25 раз

увеличивается содержание молочной кислоты в крови. Кислородный долг достигает максимальных величин — 20-22 л. Недоокисленные продукты обмена веществ, всасываясь в кровь, ухудшают деятельность нервных клеток. Напряженная деятельность нервных центров осуществляется на фоне острой кислородной недостаточности, а это приводит к быстрому развитию утомления. Периодическая работа высокой интенсивности приводит к развитию утомления вследствие дискоординации моторных а также, вегетативных функций. На протяжении нескольких десятков минут должна поддерживаться весьма напряженная работа сердечно-сосудистой и дыхательной систем для обеспечения интенсивно работающего организма необходимым количеством кислорода. При этой работе кислородный запрос несколько превышает потребление кислорода и кислородный долг достигает 12-15л. Суммарный расход энергии при такой напряженной работе очень велик, при этом расходуется до 200 г глюкозы, что приводит к некоторому ее снижению в крови. Происходит также уменьшение в крови гормонов некоторых желез внутренней секреции (гипофиза, надпочечников). Длительность выполнения циклической работы умеренной мощности приводит к развитию охранительного торможения в ЦНС, истощению энергоресурсов, напряжению функций кислородтранспортной системы, напряжению желез внутренней системы и изменению обмена веществ. В организме снижаются запасы гликогена, что ведет к уменьшению содержания глюкозы в крови. Значительная потеря организмом воды и солей, изменение их количественного соотношения, нарушение терморегуляции тоже приводят к понижению работоспособности и возникновению утомления у спортсменов. В механизме развития утомления при длительной физической нагрузке играют определенную роль в изменении белкового обмена и снижении функций желез внутренней секреции. При этом в крови снижается концентрация глюко- и минералкортикоидов, катехоламинов и гормонов щитовидной железы. Вследствие этих изменений, и в результате длительного влияния монотонных афферентных раздражений в нервных центрах возникает торможение. Угнетение деятельности этих центров приводит к значительному снижению эффективности регуляции движений и нарушению их координации. В разных климатических условиях при длительном выполнении работы развитие утомления, может быть ускорено нарушением терморегуляции.

При различных видах ациклических движений механизмы развития утомления также неодинаковы. А именно, при выполнении ситуационных упражнений разной мощности большую нагрузку испытывает высший отдел головного мозга и сенсорные системы, так как спортсменам необходимо

постоянно анализировать изменяющуюся ситуацию, программировать свои действия и осуществлять переключение темпа и структуры движений, что и приводит к развитию утомления его организма.

При разных видах спорта (например, футбол) основная роль принадлежит недостаточности кислородного обеспечения и развитию кислородного долга. При выполнении гимнастических упражнений, а также в единоборствах- утомление развивается вследствие ухудшения пропускной способности головного мозга и снижения функционального состояния мышц, при этом уменьшается их сила и возбудимость, снижается скорость сокращения и расслабления. При статической работе основной причиной утомления является непрерывное напряжение нервных центров и мышц, выключение деятельности менее устойчивых мышечных волокон и большой поток афферентных и эфферентных импульсов между мышцами и моторными центрами. При утомлении, которое является нормальным функциональным состоянием организма во время работы, его признаки полностью исчезают во время регламентированного отдыха. При длительной, интенсивной работе, нарушении режима труда и отдыха показатели утомления аккумулируются, вследствие переходит в хроническое утомление и переутомление. [4 ]

Хроническое утомление организма это пограничное функциональное состояние организма, которое характеризуется сохранением к началу очередного трудового периода субъективных и объективных признаков утомления от предыдущей работы, для устранения которых необходим дополнительный отдых. Хроническое утомление возникает во время длительной работы при нарушении режимов труда и отдыха. Основными субъективными признаками его являются ощущение усталости перед началом трудового дня, быстрая утомляемость, раздражительность, неустойчивое настроение; объективные признаки это выраженное изменение функций организма, значительное снижение спортивных результатов и появление ошибочных действий. При хроническом утомлении необходимый уровень спортивной работоспособности может поддерживаться лишь кратковременно за счет повышения биологической цены и быстрого расходования функциональных резервов организма. Для устранения неблагоприятных нарушений функций организма и сохранения спортивной работоспособности необходимо устранить нарушения режимов тренировок и отдыха. Предоставить спортсменам дополнительный длительный отдых. При несоблюдении этих мероприятий хроническое утомление может перейти в состояние переутомления.

Переутомление это патологическое состояние организма, которое характеризуется постоянным ощущением усталости, вялости, нарушения сна и аппетита, болями в области сердца и других частях тела. Для устранения этих симптомов дополнительного отдыха недостаточно, при этом состоянии требуется специальное медицинское лечение. Объективными признаками переутомления являются резкие изменения функций организма, часть которых выходят за пределы нормальных показателей, повышенная потливость, одышка, снижение массы тела, нарушение внимания и памяти, атипичные реакции на функциональные пробы, которые часто не доводятся до конца. Главным объективным критерием переутомления является резкое снижение спортивных результатов и появление грубых ошибок при выполнении специальных физических упражнений. Спортсмены с признаками переутомления должны быть отстранены от разных видов тренировок и соревнований. Они должны быть подвергнуты медицинской лечебной коррекции.

Изученная в последние годы физиологами труда количественная оценка работоспособности различных специалистов позволила установить, что снижение прямых и косвенных показателей работоспособности до 15% по сравнению с исходными, свидетельствует о наличии в организме явлений утомления, 16-19% – говорит о наличии хронического утомления, а снижение на 20% и более указывает на возникновение состояния переутомления.[5]

## RESEARCH THE TOPIC OF HUMAN RIGHTS

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### **ABSTRACT**

*Human rights are fundamental entitlements inherent to all individuals, encompassing civil, political, economic, social, cultural, and collective rights. These rights are enshrined in international instruments and serve as the cornerstone of just, inclusive societies. Upholding human rights faces challenges in ensuring universal application across diverse contexts, including political, cultural, and socioeconomic disparities. Advocates and activists play pivotal roles in addressing violations and promoting accountability. As societal dynamics evolve, human rights frameworks must adapt to address emerging challenges, such as the rights of marginalized groups and the ethical implications of global issues. Upholding human rights remains an ongoing commitment to fostering dignity, equality, and justice for all individuals and communities.*

*Human rights are universal entitlements that protect the inherent dignity and worth of every individual. Rooted in international law and moral principles, human rights encompass civil, political, economic, social, and cultural rights. This comprehensive framework seeks to ensure the protection and fulfillment of individuals' freedoms and well-being. While human rights are enshrined in international documents and conventions, their realization faces challenges due to political, economic, cultural, and social factors. Advocates and organizations play a crucial role in promoting human rights, addressing violations, and advocating for accountability. As global issues and societal dynamics evolve, the pursuit of human rights continues to adapt to emerging challenges, such as technological advancements, migration, and environmental concerns. Upholding human rights entails an ongoing commitment to creating a world w*

*Introduction:*

### **KEY WORDS**

- *Universal Declaration of Human Rights*
- *Civil and Political Rights*
- *Economic, Social and Cultural Rights*
- *International Human Rights Law*

- *Human Rights Violations*
- *Human Rights Advocacy*
- *Right to Equality*
- *Right to Freedom of Expression*
- *Right to Education.*

Human rights form the ethical and legal foundation for the protection and dignity of individuals worldwide. Rooted in the recognition of the inherent worth of all human beings, human rights encompass a wide array of entitlements and freedoms that are essential for fostering just, inclusive, and equitable societies. These rights are enshrined in international declarations, treaties, and conventions, reflecting a collective commitment to upholding the principles of equality, non-discrimination, and justice.

The concept of human rights is multifaceted, encompassing civil and political rights, such as the right to life, freedom of expression, and the right to a fair trial, as well as economic, social, and cultural rights, including the right to work, education, and an adequate standard of living. Additionally, collective rights recognize the rights of groups, including indigenous peoples and minorities, to preserve their cultural identity and heritage. Upholding human rights is essential not only for safeguarding individual freedoms but also for promoting stable governance, democracy, and the rule of law.

While significant strides have been made in advancing human rights globally, numerous challenges persist in ensuring their universal application. Political instability, armed conflicts, cultural norms, and economic disparities often hinder the full realization of human rights for all individuals. Moreover, the evolving landscape of societal dynamics and global issues presents new complexities, requiring ongoing adaptation and vigilance in upholding human rights in an ever-changing world.

Against this backdrop, this research endeavors to explore the multifaceted dimensions of human rights, including the challenges to their realization, the roles of various stakeholders in promoting and protecting human rights, and the evolving landscape of human rights in response to contemporary global issues and concerns. By delving into these critical aspects, this research aims to contribute to a deeper understanding of the complexities, opportunities, and imperatives associated with the protection and promotion of human rights in the 21st century. here every person's rights are recognized, respected, and upheld.

Human rights are the cornerstone of a just and equitable society, embodying the inalienable entitlements of every individual. Enshrined in international conventions and declarations, human rights encompass a spectrum of civil, political, economic,

social, and cultural rights that are essential for fostering dignity, equality, and freedom for all people, regardless of their background or status.

The concept of human rights extends beyond legal frameworks, reflecting a global commitment to upholding moral and ethical standards that safeguard fundamental freedoms and address systemic injustices. While great progress has been made in advancing human rights protection and promotion, significant challenges persist, ranging from political conflicts and discrimination to economic disparities and environmental concerns.

This research aims to delve into the multifaceted landscape of human rights, exploring the evolving nature of these rights in the face of contemporary challenges. By examining the roles of various stakeholders, the complexities of human rights realization in diverse contexts, and the ethical dimensions of emerging issues, this study seeks to contribute to a nuanced understanding of the imperative and complexities of upholding human rights in a rapidly evolving global landscape.

Through this exploration, the research endeavors to shed light on the critical factors that shape the pursuit of human rights, with the ultimate goal of fostering informed dialogue and action to advance the protection and promotion of human rights for all individuals and communities.

The concept of human rights is a fundamental pillar of modern society, underpinning the principles of justice, equality, and dignity for all individuals. Human rights embody a set of universal entitlements that are inherent to human beings, regardless of their nationality, ethnicity, gender, or other characteristics. These rights encompass a broad spectrum, including civil and political rights, such as the right to freedom of expression and the right to a fair trial, as well as economic, social, and cultural rights, such as the right to education and the right to an adequate standard of living.

Central to the notion of human rights is the commitment to ensuring that all individuals are afforded the opportunity to live with freedom, security, and respect. This commitment is enshrined in international covenants and treaties, reflecting a global consensus on the importance of upholding human rights as a fundamental ethical and legal imperative.

Despite the progress made in advancing human rights protections, numerous challenges persist around the world. Political conflicts, discrimination, poverty, and environmental degradation are among the complex issues that continue to impact the realization of human rights. Furthermore, the interconnected nature of contemporary societal and global challenges necessitates a nuanced understanding of human rights in the context of diverse and dynamic environments.



This research seeks to delve into the multifaceted realm of human rights, addressing the complexities and ethical dimensions of human rights realization in a rapidly evolving world. By exploring the roles of various actors, the impact of cultural and social contexts, and the evolving landscape of human rights in response to contemporary global issues, this study aims to contribute to a deeper understanding of the challenges and opportunities inherent in the pursuit of human rights.

Through this exploration, the research aims to shed light on the critical factors that shape the promotion and protection of human rights, with the ultimate goal of fostering informed discourse and action to advance human rights for the betterment of all individuals and communities globally.

### IN CONCLUSION

The topic of human rights encompasses a vast and intricate landscape that is fundamental to the pursuit of a just and equitable global society. The universal declaration of human rights enshrines a wide array of entitlements, spanning civil, political, economic, social, and cultural rights, which stand as the foundation for the protection of individual dignity and freedom.

Despite significant strides, numerous challenges persist in realizing human rights, including political conflicts, discrimination, poverty, and environmental degradation. The complexities and interrelated nature of these challenges call for a nuanced understanding of human rights and their impact on diverse communities and contexts.

Advancing the cause of human rights demands the engagement of various stakeholders, including governments, international organizations, civil society, and private sector entities. Furthermore, the ethical dimensions of emerging issues, such as the rights of marginalized groups, the impact of technology on human rights, and environmental sustainability, require careful consideration and proactive measures.

By recognizing the interconnectedness of human rights issues and their impact on individuals and communities, it is imperative to foster informed dialogue and action to address these challenges. This involves promoting human rights education, empowering human rights defenders, and advocating for the implementation of international human rights standards at local, national, and global levels.

In essence, the exploration of human rights is an ongoing and multifaceted endeavor that requires collaborative efforts to uphold the principles of dignity, equality, and justice for all. Through continued research, advocacy, and action, opportunities exist to advance the protection and promotion of human rights, contributing to a more inclusive and respectful world for present and future generations.

The topic of human rights is a critical cornerstone of our global society, embodying the principles of dignity, equality, and justice for every individual. The universal nature of human rights encompasses civil, political, economic, social, and cultural rights, reflecting the fundamental entitlements inherent to all human beings.

While significant progress has been made in advancing human rights protections, pervasive challenges persist, including political conflicts, discrimination, poverty, and environmental degradation. These complex issues necessitate a comprehensive and multifaceted approach to address the diverse and dynamic contexts in which human rights are realized.

The realization of human rights requires the engagement of diverse stakeholders, including governments, international organizations, civil society, and the private sector. Moreover, the ethical dimensions of emerging challenges, such as the rights of marginalized groups and the impact of technology on human rights, necessitate careful consideration and proactive measures.

Advancing human rights necessitates fostering informed dialogue and action, promoting human rights education, empowering human rights defenders, and advocating for the implementation of international human rights standards at all levels. By recognizing the interconnectedness of human rights issues and their impact on individuals and communities, there are opportunities to advance the protection and promotion of human rights, contributing to a more inclusive and equitable world for all.

## REFERENCES

Certainly, the topic of human rights encompasses a wide array of issues, theories, and historical and contemporary developments. Here are some key references and sources that provide comprehensive insights into the field of human rights:

1. Universal Declaration of Human Rights (UDHR): This foundational document, adopted by the United Nations General Assembly in 1948, sets out fundamental human rights to be universally protected. It serves as a touchstone for all subsequent human rights treaties and instruments.
2. Amartya Sen's "Development as Freedom": This influential work by Nobel laureate economist Amartya Sen explores the intrinsic connection between human rights and development, presenting a compelling argument for the centrality of human freedoms in driving progress.

3. Columbia Human Rights Law Review: This academic journal publishes articles by scholars, practitioners, and students on a wide range of human rights issues, providing an invaluable resource for staying informed about current trends and debates in human rights.

4. International Committee of the Red Cross (ICRC): The ICRC's publications and reports offer essential insights into international humanitarian law, the protection of civilians in armed conflict, and the broader field of human rights law.

5. Human Rights Watch and Amnesty International Reports: These organizations regularly publish comprehensive reports on human rights conditions across the globe, offering in-depth analysis, documentation, and advocacy on a wide range of human rights issues.

## O'RTA OSIYO MINTAQASIDA IQTISODIY REGIONAL INTEGRATSIYA IMKONIYATLARI

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***Abstrakt.** O'zbekistonning eng yirik 10 ta savdo hamkorlari orasida 4 O'rta Osiyo mamlakatlari mavjud va ular bilan savdo hajmi oxirgi 5 yilda 260% ga oshgan. Bu davlatlar rivojlanayotgan o'tish iqtisodiyotga egaligi hisobidan, ma'lum shartlar ostida import va eksportga bo'lgan cheklovlar, xususan, bojlar olib tashlanishining iqtisodiyotga kutilayotgan ijobiy ta'siri bir yaxlit regional iqtisodiy integratsiya tuzishning naqadar muhimligiga dalolat qiladi.*

***Kalit so'zlar:** iqtisodiy regional integratsiya, erkin savdo shartnomalari, imtiyozli bojxona tariflari, intellektual mulk himoyasi, mehnat sharoitlariga talablar.*

O'zbekiston Respublikasi Prezidenti huzuridagi Statistika agentligining ma'lumotlariga ko'ra, O'zbekiston tashqi savdo aylanmasi 2023-yilning birinchi yarmida 29,2 milliard AQSH dollarini tashkil etib, 4,7 milliard AQSh dollariga yoki 19,4 foizga o'sdi. 2022 yilning mos davriga nisbatan. tashqi savdo aylanmasi umumiy hajmidan eksport 12140,0 mln. AQSH dollarini (o'sish 23,0%), import esa 17030,5 mln. AQSH dollarini (o'sish 17,0%) tashkil etdi.<sup>1</sup>. Shundan, O'rta Osiyo davlatlari, jumladan, Qozog'iston, Qirg'iziston, Tojikiston va Afg'oniston bilan umumiy 28% savdolarni amalga oshirgan. Bu ko'rsatkich iqtisodiy integratsiya tashkil etish muhimligiga dalolat qiluvchi belgi hisoblanadi. Yana quyida tashqi savdo aylanmasig

<sup>1</sup> <https://stat.uz/uz/matbuot-markazi/qo-mita-yangiliklar/44510-o-zbekiston-respublikasi-tashqi-savdo-aylanmasi-2023-yil-yanvar-avgust>

kiruvchi alohida shartnomalar bo'yicha savdo aloqalarining asosiy yo'nalishlari tahlil qilingan:

- eksport va import: O'zbekiston va O'rta Osiyo mamlakatlari o'rtasidagi savdo aloqalari oxirgi 5 yilda 2,6 barobarga oshgan. Milliy bozorni himoya qilish uchun JST ga a'zo bo'lmagan O'zbekiston<sup>1</sup> uchun O'rta Osiyoda iqtisodiy integratsiya qilish ayni muddao bo'lar edi.

- investitsiyalar va sarmoyaviy hamkorliklar: O'zbekiston Markaziy Osiyoda mintaqaviy iqtisodiy tashabbuslarda faol ishtirok etib kelmoqda. Shanxay hamkorlik tashkiloti (ShHT) va Markaziy Osiyo mintaqaviy iqtisodiy hamkorlik dasturi (CAREC) kabi mintaqaviy tashkilotlari shular jumlasidandir. Lekin, aynan Markaziy Osiyo davlatlari bilan alohida investitsion kelishuv bo'lganida, kichik mablag'lar jalb etish, xususan, kichik tadbirkorlik sektorlariga investitsiya jalb etish iqtisodiyotga hissa qo'shadi.

- transport va logistika: O'zbekiston O'rta Osiyo mamlakatlarining infrastrukturasi yaxshilash vazifasi yuklatilgan integratsiya samaradorlikka ijobiy ta'sir qiladi. Bunda, kiritilgan investitsiyalar regionda samarali yuk tashish hamda ishlab chiqarish xarajatlarini keskin pasaytirishga yordam beradi.

- milliy valyuta almashinuvlari: valyuta tizimida o'zgarishlar, savdo operatsiyalarini ta'sir qilishi mumkin. O'zbekiston va O'rta Osiyo mamlakatlarining valyuta kurslarini qanday tutishlari va boshqa moliyaviy asoslar savdo aloqalariga, albatta, ta'sir qiladi. Tuziladigan integratsiyada, savdo valyutasi sifatida dollar emas, so'm yoki nisbatan yaxshi ko'rsatkichga ega valyuta tanlansa, region avtonomligi va dollarga qaram bo'lmasligi kafotlatlanadi.

- iqtisodiy sohalarda hamkorlik: energetika, sanoat, texnologiya sohalaridagi hamkorlik yaxlit bir kelishuv bilan tartibga solinsa, ishlab chiqaruvchilar uchun manfaatli va xaridorlar uchun keng tanlov bo'lishi kafotlatlanadi.

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<sup>1</sup> Normatov, J. (2018). Uzbekistan's Long way to the world trade organization. L'Europe En Formation, 385(1), 104. <https://doi.org/10.3917/eufor.385.0104>

Bu iqtisodiy regional kooperatsiya AQSh, Meksika va Kanada o'rtasidagi USMCA tashqi savdo kelishuvi<sup>1</sup>da keltirilgan bir qancha tajribalar natijasida samarador bo'lishi mumkin. Masalan, bir mahsulotning bojlarda mutlaqo ozod bo'lishi uchun uning belgilangan foizi shu mamlakatlarda ishlab chiqarilgan bo'lishi kerak. Ishlab chiqarishni kengaytirish maqsadida intellektual mulkni himoya qilish ham va bojdan ozod bo'lish uchun shu shartni bajarishi belgilanishi lozim. Ishlab chiqarish sharoitini yaxshilash va unga qo'yilgan ma'lum talablarni bajarish bojdan ozod qilinish uchun zarur etib belgilanishi lozim. Shunda nafaqat iqtisodiy o'sish, balki davlatlarning ijtimoiy himoya vazifasi ham bajariladi.

Xulosa o'rnida, Markaziy Osiyo mintaqasida yagona iqtisodiy regional integratsiya tashkil etish va uning talablari orqali mintaqada iqtisodiy rivojlanishni jadallashtirish mumkin. Yuqorida ta'kidlab o'tilgan ko'rsatmalar bo'yicha va ularni yanada takomillashtirgan holda tuzilgan iqtisodiy kooperatsiya 5 davlat – O'zbekiston, Qozog'iston, Qirg'iziston, Tojikiston, Turkmaniston uchun istiqbolli loyiha bo'ladi.

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<sup>1</sup> <https://ustr.gov/trade-agreements/free-trade-agreements/united-states-mexico-canada-agreement/agreement-between>

## TIBBIYOT TEXNIKASI VOSITALARI UCHUN SIFAT NAZORATI NATIJARINI TAXLIL QILISH

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### ANNOTATSIYA.

*Sog‘liqni saqlash tizimini O‘zbekiston Respublikasi hukumatining eng ustuvor yo‘nalishlaridan biri xisoblanadi va sog‘liqni saqlash tizimini yanada rivojlantirish bo‘yicha bosqichma-bosqich va maqsadli ishlarni davom ettirilib kelinmoqda. Aholining sog‘lig‘ini muhofaza qilish va tibbiyot muassasalarining iqtisodiy-texnik xolatini mustahkamlash, zamonaviy talablar asosida yuqori sifatli tibbiy xizmat ko‘rsatishga ko‘proq e‘tibor berib kelinmoqda.*

**Kalit so‘zlar:** Metrologik ta‘minot, tibbiy jixozlar, tibbiy texnika, sog‘liqni saqlash.

## АНАЛИЗ РЕЗУЛЬТАТОВ КОНТРОЛЯ КАЧЕСТВА МЕДИЦИНСКИХ ИЗДЕЛИЙ

### АННОТАЦИЯ.

*Система здравоохранения считается одним из наиболее приоритетных направлений деятельности правительства Республики Узбекистан, и продолжается поэтапная и целенаправленная работа по дальнейшему развитию системы здравоохранения. Больше внимания уделяется охране здоровья населения и укреплению экономического и технического состояния медицинских учреждений, оказанию качественных медицинских услуг на основе современных требований.*

**Ключевые слова:** метрологическое обеспечение, медицинская техника, медицинская техника, здравоохранение.

## ANALYSIS OF QUALITY CONTROL RESULTS FOR MEDICAL DEVICES

### ANNOTATION.

*The health care system is considered one of the top priorities of the government of the Republic of Uzbekistan, and gradual and purposeful work on the further development of the health care system is being continued. More attention is being paid to protecting the health of the population and strengthening the economic and technical condition of medical institutions, providing high-quality medical services based on modern requirements.*

**Key words:** *Metrological supply, medical equipment, medical equipment, health care*

Sifat nazorati natijalari, bir tahlil, tushuncha yoki o'zining natijaviy yoki maqsadli tafsilotlari yoki yoritishlari bo'yicha yoki kuzatuvchi tomonidan belgilangan boshqa bir yordam orqali olingan natijalardir. Bu natijalar obyektiv yoki subjektiv bo'lishi mumkin, chunki ular foydalanuvchining shaxsiy fikrlari yoki ko'zdan kechirishlari asosida olingan bo'lishi mumkin[1].

Sifat nazorati natijalari tahlil, tadqiqot, sotsiologiya, psixologiya, marketing va boshqa sohalarda keng qo'llaniladi. Bu natijalar o'z ichiga o'zida boshqaruvchi o'zaro aloqani qamrab olishi mumkin, chunki ular sifatini belgilashning, qo'llanishning va natijalarining ta'siri bilan yaxshi tushuniladi.

Sifat nazorati natijalarini taxlil qilishning bir necha usullari mavjud, ular tahlil, taqqoslash, tushunchalar o'zgartirish, mahsulotni yaxshilash, strategiya o'zgartirish va boshqalarni o'z ichiga oladi. Bular qiyosiy o'zgarishlar, tahlil qilish, trendlarni hisobga olish va mahsulotlarni isloh qilishni tushunishga yordam beradi [2].

Natijalarni taxlil qilish uchun yaxshi ta'sir ko'rsatadigan statistik ko'nikmalar, samaradorlik va ko'rsatkichlar, marketing va sotsiologik tahlillar va boshqalar keng qo'llaniladi. Sifat nazorati natijalarini taxlil qilish va natijalarni mustahkamlashni tahlil qilish, bir biznesning muvaffaqiyati uchun juda muhimdir.

Tibbiyot texnikasi vositalari, yani tibbiyotni ta'minlash uchun tayyorlangan qurilmalar, faqatgina sifatli, to'liq va ishonchli bo'lsa, shifokorlarning kasbiy faoliyatida muhim ahamiyat kasb etadi. Bu sababli, tibbiyot texnikasi vositalari sifat nazorati juda muhimdir. Bu nazoratning maqsadi, vositalarning ishlash qobiliyati, ishonch va afzalliklari, vaqt ichida ishlab chiqarilgan va shifokorlar tomonidan ishlatiladigan har bir qurilmaning o'ziga xos xususiyatlari va talablari to'g'risida ma'lumot berishdir [3].



Tibbiyot texnikasi vositalari uchun sifat nazorati natijalarini taxlil qilishda, odatda quyidagi yo‘llar ko‘p ishlatiladi:

**Tekshirish:** Qurilmani ishga tushirishdan oldin, uning sifatini tekshirish va to‘g‘risida ma‘lumot to‘plash uchun laboratoriyalar yoki tibbiyot texnikasi sohasidagi boshqa markazlar foydalaniladi.

**Tahlil:** Qurilmani ishlatish jarayonida, uning ishlashiga oid ma‘lumotlar, asosiy xususiyatlari va takrorlanuvchi sinovlarga oid ma‘lumotlar to‘planadi.

**So‘rovnoma va fikrlash:** Shifokorlar, qurilmani ishlatish jarayonida, xususan tibbiyot texnikasi vositalari uchun mo‘ljallangan so‘rovnoma va fikrlashlarga qatnashadi. Bu yordamida, qurilmaning sifati va ishlovchi shakli bo‘yicha yaxshi natijalar olinadi [4].

**Ishlatish jarayoni:** Qurilmani amalga oshirish jarayonida, uning ishlash qobiliyatini, to‘g‘ri ishlashini va boshqa tibbiyot texnikasi vositalari bilan qarshi kurashishini o‘rganish mumkin.

Sifat nazorati natijalari o‘ziga xosdir, chunki har bir qurilmaning xususiyatlari va talablari o‘ziga xosdir. Biroq, umumiy tarzda, tibbiyot texnikasi vositalari uchun sifat nazorati natijalari quyidagilardan iborat bo‘lishi mumkin [5]:

- Qurilmani ishlatish uchun yuzaga kelgan talablarni to‘liq bajarganligi
- Qurilmaning ishlab chiqarilish jarayonida xatoliklar va yomoniyatlar soni
- Qurilmaning ishlash qobiliyati va ishga tushirilishdan keyin ishlab chiqarilgan ma‘lumotlarga mos kelishi
- Qurilmaning ishlatilishi natijasida hosil bo‘lgan nazoratli ma‘lumotlar va natijalar
- Qurilmaning to‘liq va to‘g‘ri ishlashiga oid ma‘lumotlar
- Qurilmani ishlatish jarayonida xususiy talablarga mos kelish, masalan, o‘zaro almashish, tayyorlash va muhiti

Sifat nazorati natijalari tibbiyot texnikasi vositalari uchun juda muhimdir, chunki nazoratlar vositalarning ishlab chiqarilishi, qo‘llanilishi va shifokorlar tomonidan ishlatilishi jarayonida muhim bo‘lgan talablarga mos kelishi kerak. Natijalar, vositalarning qo‘llanilishi jarayonida hosil bo‘lgan zararli ta’sirlar, sinovlar natijasida olingan ma‘lumotlar va vositalarning o‘ziga xos xususiyatlarini o‘rganish uchun foydali bo‘ladi.

#### **Tahlil vositasi: baliq skeleti / Ishikava diagrammasi**

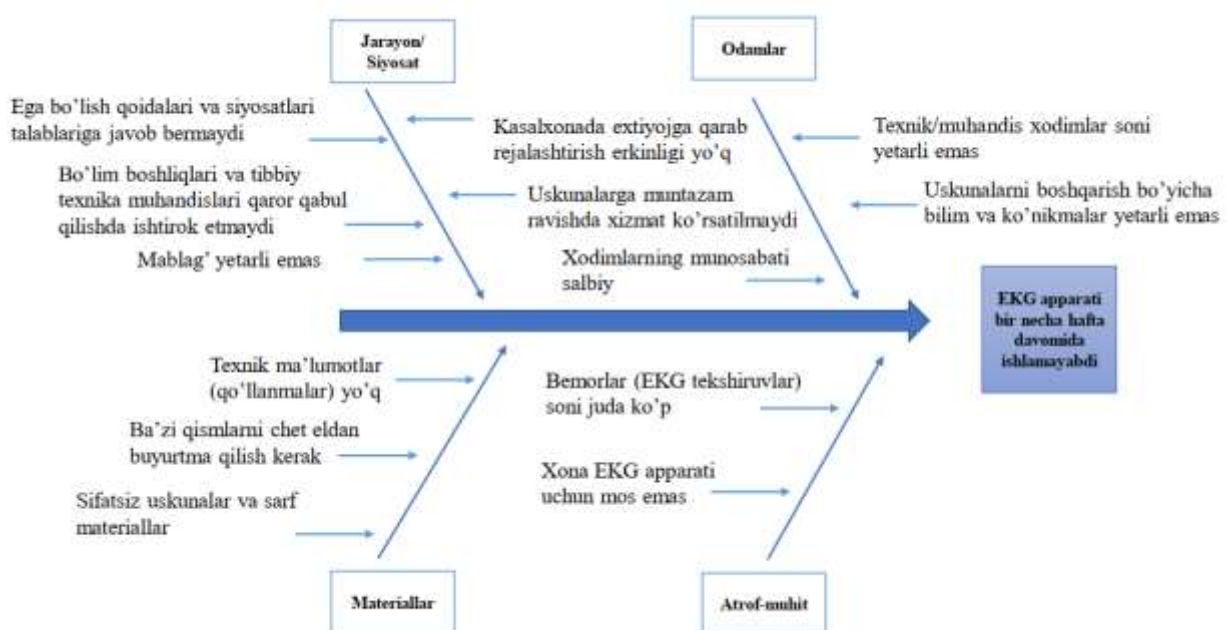
Sabab-oqibat diagrammalari muammoni yuzaga keltirgan sabablarni tasavvur qilishga yordam beradi. Ishikava /baliq skeleti diagrammasi odatda:

- sabab va oqibatlarni gorizontaal yo‘nalishda terib chiqadi

- boshqaruv, materiallar, usullar yoki jarayonlar, uskunalar, atrof-muhit va odamlar kabi turli xil toifalarga muvofiq guruhlariga bo'linadi.

Diagramma o'z nomini baliq skeletiga o'xshash shaklidan olgan. Odatda, murakkab muammoning sabablarini ko'rsatish uchun sabab-oqibat diagrammasi tuziladi. Murakkab muammo ko'plab bevosita va bilvosita sabablarga ega bo'lgani sababli, turli xil sabablar quyida keltirilgan misolda ko'rsatilganidek, guruhlariga bo'linadi [6].

### Baliq skeleti diagrammasi yordamida «EKG apparati bir necha hafta davomida ishlamayapti» muammosini tahlil qilish



Muammolarni guruhlash uchun turli xil toifalar mavjud, masalan:

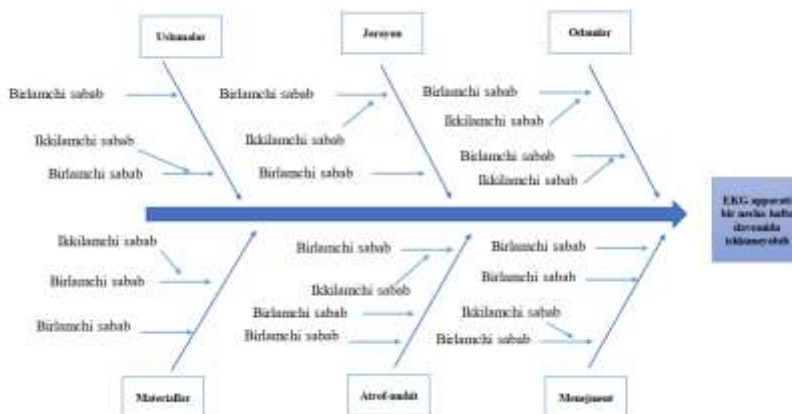
- Odamlar, Jarayon/Siyosat, Materiallar, Atrof-muhit
- Boshqaruv, Materiallar, Usullar, Uskunalar va Odamlar
- Atrof-muhit, yetkazib beruvchilar va ko'nikmalar.

Yuqoridagi toifalar ko'pincha baliq skeleti diagrammalarda qo'llaniladi. Ammo siz tahlil qilmoqchi bo'lgan muammoga mos keladigan o'zingizni toifalaringizni belgilashingiz mumkin[7].

Ba'zan asosiy muammoning asosiy yoki bevosita sabablarini va asosiy sabablarga olib kelgan ikkilamchi sabablar deb nomlangan bilvosita sabablarni ajratish maqsadga muvofiqdir. **Ошибка! Источник ссылки не найден.** Baliq skeleti diagrammasida birlamchi va ikkilamchi sabablar orasidagi bog'liqlik qanday tasvirlanganligi ko'rsati.

Bunday holda, baliq skeleti diagrammasi muammolar daraxtiga o‘xshaydi, ammo bu asosiy muammoning keyingi ta’sir/oqibatlarini tasvirlamaydi.

### Sabablar



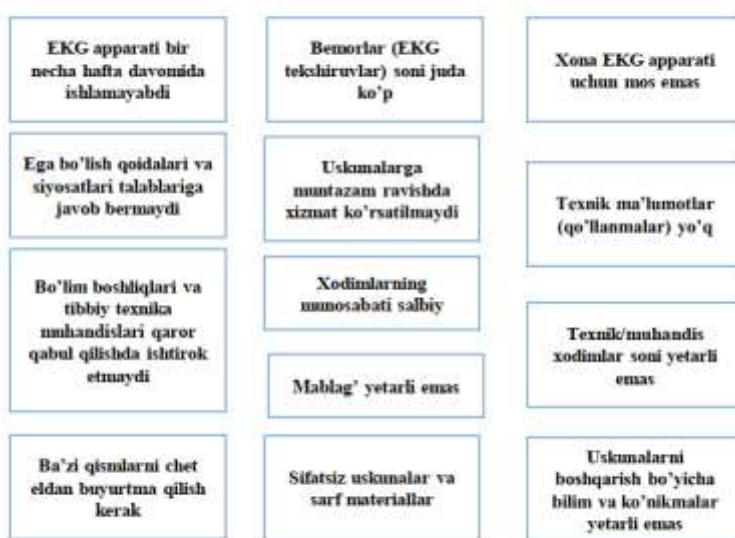
### Murakkab baliq skeleti diagrammasi

Baliq skeleti diagrammasini ishlab chiqish uchun:

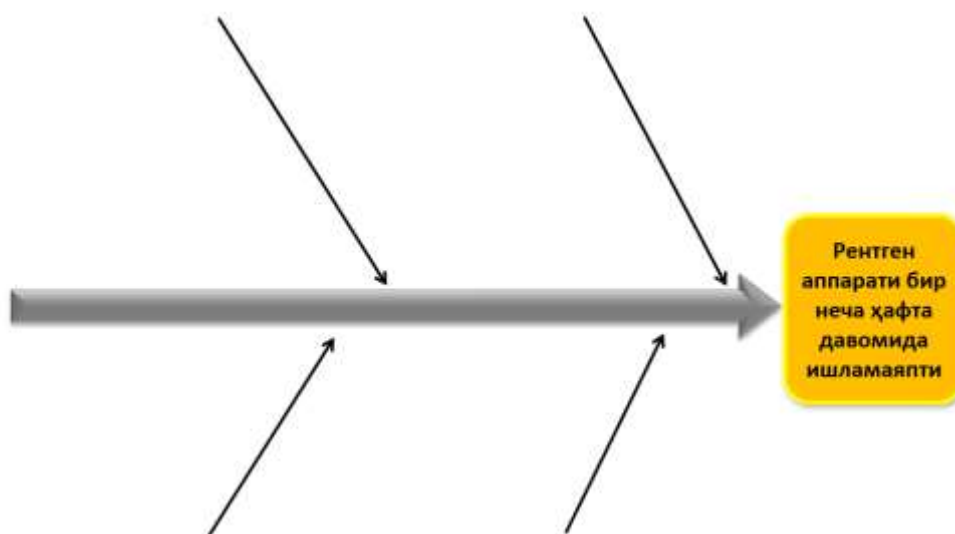
1. Asosiy manfaatdor tomonlarni yig‘ing va mashg‘ulot davomida ishtirokchilarga rahbarlik qilish uchun yordamchi tayinlang. Tegishli manfaatdor tomonlarni jalb qilish orqali siz turli xil qarashlarni bilib olishingiz mumkin. Bu odatda muammolarni va ularning sabablarini yaxshiroq tushunishga yordam beradi. Shu bilan birga, bu muammolar va sabablarini birgalikda hal qilishning boshlang‘ich nuqtasi bo‘lishi mumkin [8].
2. Muammoni tahlil qilishning maqsadi va qo‘lami to‘g‘risida kelishib oling. Oldindan tegishli ma’lumotlar va ahborotlarni to‘plash, vaziyatni dastlabki tahlilini o‘tkazish va boshlang‘ich nuqta sifatida kirish taqdimotini/prezentatsiyasini tayyorlash foydali bo‘lishi mumkin.
3. Uslubiyatni tushuntiring, xususan: kartalarni tarqating, har bir ishtirokchidan har bir kartaga faqat BITTA muammoni yozishini so‘rang.
4. Ishtirokchilardan eng muhim deb hisoblagan muammolarini yozib olishlarini so‘rang. Muammolarni diqqat bilan aniqlash kerak: ular potensial yoki kelajak muammolar emas, balki mavjud muammolar bo‘lishi kerak. Xuddi shunday, barcha (mayda) muammolarni sanamang, aks holda, baliq skeleti diagrammasi juda murakkablashadi.
5. Asosiy muammoni aniqlang (bu jarayonda bir muammoda to‘xtalguncha ancha harakat, sinov va hatoliklar bo‘lishi mumkin. Asosiy muammoni markaziy chiziq o‘qining oxiriga qo‘ying (= baliq boshi). Misolda biz asosiy muammo sifatida «rentgen apparati bir necha hafta davomida ishlamay qolganligi»-ni aniqladik.

Muammolardan qaysilari asosiy muammoning "Sabablari" va qaysilari uning «Оқибатлари» ekanligini aniqlang. Baliq skeleti diagrammasi uchun faqat asosiy muammoga olib keladigan muammolarni tanlang. Asosiy muammoning bevosita yoki bilvosita oqibatlarini bo'lgan muammolarni e'tiborsiz qoldiring.

6. Qolgan muammolarni (= asosiy muammoning sabablari) turli xil klasterlarga/guruhlarga joylashtiring, masalan:
  - a. Odamlar, jarayon/siyosat, materiallar, atrof-muhit.
  - b. Menejment, materiallar, usullar, uskunalar, atrof-muhit va odamlar.
  - c. Tashqi muhit, yetkazib beruvchilar, tizimlar va ko'nikmalar.



**Aniqlangan muammolar**



**Asosiy muammo**

Agar yuqoridagi klasterlardan hech biri mos kelmasa, ishtirokchilar orasida yangi klasterlar bo'yicha kelishib oling va muammolarni (= asosiy muammoning sabablarini) klaster nomini o'z ichiga olgan tegishli o'q yonida birga guruhlang. Yuqoridagi misolda – biz «Odamlar, jarayon, materiallar, atrof-muhit» guruhlardan foydalanganmiz.

- Odamlar: kasalxona xodimlari, ularning vakolatlari, munosabati bilan bog'liq bo'lgan muammolar
- Jarayon / siyosat: tibbiy xizmat ko'rsatish jarayoni qanday tashkil etilgan, qaysi siyosatlar mavjud yoki yo'q
- Materiallar: jihozlar, buyumlar, sarflanadigan va boshqa materiallar, shuningdek bino va infratuzilma bilan bog'liq turli xil muammolar
- Tashqi muxit: kasalxona yoki tibbiyot markazi ta'siridan tashqarida bo'lgan muammolar

7. Siz har bir klasterdagi muammolarni (= asosiy muammoning sabablari) asosiy muammoning asosiy/birlamchi (= bevosita) sabablarga va ikkilamchi (= bilvosita) sabablarga ajratishingiz mumkin.

Yuqoridagi misolda, birlamchi va ikkilamchi sabablar o'rtasidagi farqni ajratmaganmiz.

Biz o'zimizga savol beramiz: «nega uskunalarga muntazam ravishda xizmat ko'rsatilmaydi?» Ikkita javob bo'lishi mumkin: «Mablag' yetarli emas» va «Bo'lim rahbarlari va tibbiy texnika muhandislari qaror qabul qilishda ishtirok etmaydi». Biz o'zimizga yana savol beramiz: «nega mablag' yetarli emas?» Bunga «kasalxonada ehtiyojga qarab rejalashtirish erkinligi йўқ» degan javob berish mumkin.

8. Ishtirokchilar bilan baliq skeleti diagrammasi to'g'ri va to'liqligini ko'rib chiqing. Ro'yhatga tushmagan boshqa tegishli muammolar mavjudligini so'rang va ularni diagrammaning tegishli joyiga qo'shing. Muhokama uchun qo'shimcha savollar quyidagicha bo'lishi mumkin:

- qaysi sabablar va oqibatlar yaxshilanmoqda, qaysilari yomonlashmoqda va qaysilari o'zgarmay qolmoqda?
- Eng jiddiy oqibatlar qaysi? Ulardan qaysilari ko'proq tashvishlantirmoqda? Taraqqiyot yo'lida biz uchun qaysi mezonlar muhim
- Qaysi sabablarni bartaraf etish eng oson / eng qiyin?

9. Qo'shimcha izohlar va ma'lumot uchun baliq skeleti diagrammasining yakuniy variantini (elektron shaklda/qog'oz varaqda) tarqating.

Keyingi qadam: Baliq skeleti diagrammasini maqsad va yechim diagrammasiga aylantirish:

- har bir muammo/sababni mavjud resurslar bilan, ajratilgan vaqt davomida va h.k. erishish (i) ma'kul va (ii) mumkin bo'lgan maqsadga aylantiring.
- kelishilgan diagrammaning to'g'riligini va to'liqligini tekshiring
- agar kerak bo'lsa: (i) ta'riflarni ko'rib chiqing, (ii) maqsadlarni to'g'rilang, (iii) qo'shimcha maqsadlarni kiriting

- ustuvorliklarni belgilang
- muayyan maqsadlarning qanchalik real/erishish mumkinligini baholang
- qo‘shimcha vositalar va resurslarda bo‘lgan ehtiyojni aniqlang
- strategiyalarni tanlang.

Yakuniy eslatma: Baliq skeleti diagrammasi uni ishlab chiqqan odamlar vaziyatni tahlil qilgan darajagacha to‘g‘ri/aniq. Tahlilning yetarli va to‘g‘ri ma‘lumotlarga asoslanganligiga ishonch hosil qilishingiz kerak. Ushbu vosita ma‘lum bir muammo qanchalik muhim/dolzarb yoki keng tarqalganligini aytmaydi. Muammo daraxtidan farqli o‘laroq, u turli masalalar o‘rtasida sabab-oqibat aloqalarini aks ettirishi shart emas.

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## METROLOGIK TALABLARINI TIBBIY JIXOZLARNING O'LCHASH NATIJARIGA TA'SIR QILUVCHI OMILLARI TAXLILI

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### ANNOTATSIYA.

*Tibbiyot – maksimal aniqlikni talab qiladigan soha. Shuning uchun tibbiy texnika, oddiy gradusnik, tonometr, tarozilardan boshlab, ultratovushli tekshiruv, kompyuter tomografiyasi, rentgenografiya uchun mo'ljallangan apparatlargacha – ma'lum texnik parametrlarga qat'iy to'g'ri kelishi kerak. Bunda ixtisoslashtirilgan uskunalarning barqaror va soz ishlashini ta'minlash, uning ishlab chiqaruvchilari tomonidan berilgan birlamchi sifatini saqlab turish zarur. Axir, diagnoz to'g'riligi, va bundan chiqdi belgilangan davolash usullarining samaraliligi uning ko'rsatishlari aniqligiga bog'liq.*

***Kalit so'zlar:** Metrologik ta'minot, tibbiy jixozlar, tibbiy texnika, sog'liqni saqlash.*

## АНАЛИЗ МЕТРОЛОГИЧЕСКИХ ТРЕБОВАНИЙ ФАКТОРОВ, ВЛИЯЮЩИХ НА РЕЗУЛЬТАТЫ ИЗМЕРЕНИЙ МЕДИЦИНСКИХ ИЗДЕЛИЙ

### АННОТАЦИЯ.

*Медицина – область, требующая максимальной точности. Поэтому медицинское оборудование, начиная от простых транспортиров, тонометров, весов и заканчивая приборами, предназначенными для ультразвукового исследования, компьютерной томографии, рентгенографии, - должно строго соответствовать определенным техническим параметрам. В этом случае необходимо обеспечить стабильную и правильную работу специализированного оборудования, сохранить первичное качество, задаваемое его производителями.*

*Ведь от точности его показаний зависит точность диагноза, а значит, и эффективность назначенных методов лечения.*

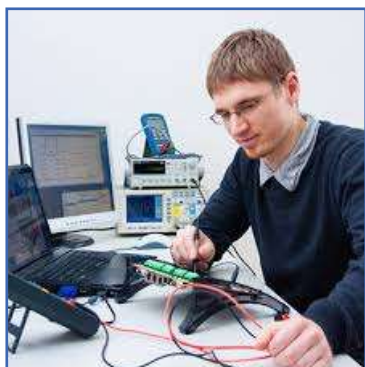
**Ключевые слова:** метрологическое обеспечение, медицинская техника, медицинская техника, здравоохранение.

## ANALYSIS OF METROLOGICAL REQUIREMENTS OF THE FACTORS AFFECTING THE MEASUREMENT RESULTS OF MEDICAL DEVICES

### ANNOTATION.

*Medicine is a field that requires maximum accuracy. Therefore, medical equipment, starting from simple protractors, tonometers, scales, to devices designed for ultrasound examination, computer tomography, radiography - must strictly correspond to certain technical parameters. In this case, it is necessary to ensure the stable and correct operation of specialized equipment, to maintain the primary quality given by its manufacturers. After all, the accuracy of the diagnosis, and hence the effectiveness of the prescribed treatment methods, depends on the accuracy of its indications.*

**Key words:** Metrological supply, medical equipment, medical equipment, health care



Measurements provide data from which decisions are made:

- To continue or stop a process
- To accept or reject a product
- To rework or complete a design
- To take corrective action or withhold it
- To establish scientific fact

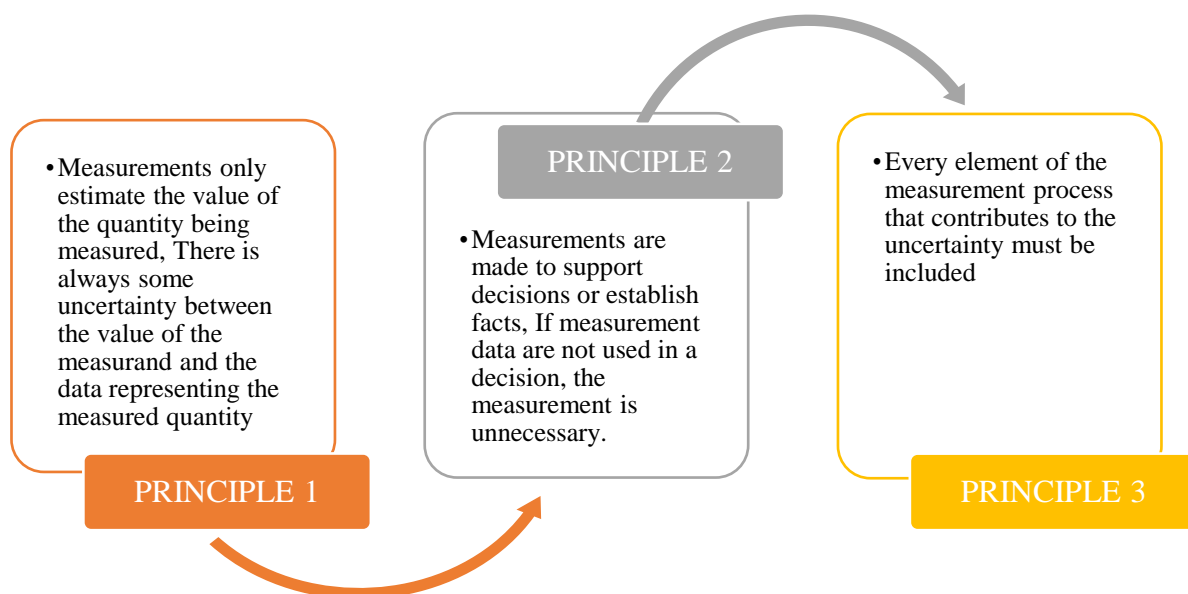
Healthcare in Uzbekistan is one of the foreground directions of the inclusive social policy implementation which experienced major reform over the past two decades. Uzbekistan has a single statutory health care system, which includes public, private and other forms of non-public actors.

Today over 1,000 inpatient health institutions, 4,000 polyclinics and outpatient institutions, 501 rural outpatient posts, 2,606 RHCs and other health institutions are providing qualified public health services [1].



The priorities of the government of Uzbekistan, focused on comprehensive modernization of health system, continued gradual and targeted work on further reforming and developing of healthcare system. More attention is being paid to the protection of public health and strengthening of economic and technical base of medical institutions, as well as rendering high-quality medical services at modern requirements.

To assure adequate space system performance, it is essential that technical requirements be developed, defined and documented carefully. Clearly defined measurement requirements lead to the high reliability and quality needed to assure successful system performance and mission achievement [2].



**Figure 1. Principles of Measurement**

**Measurement** — The set of operations having the object of determining the value of a quantity. Measurements are subject to varying degrees of uncertainty, the uncertainties need to be estimated, from the estimate, the validity of the measurement can be assessed, the risks associated with decisions based on these measurements quantified, and corrective actions taken to control growth in the measurement uncertainty.

The objective of the measurement process for space systems is to monitor the integrity of the performance parameters of space hardware, instrumentation and ground support equipment, and to allow sound decisions for taking actions. The objective of calibration is to determine initial bias errors, correct for these, “and then to monitor and control the growth of measurement uncertainty. This assures that decisions being made

about the hardware from the measurement data are made within acceptable risk limits [3].

In order to achieve high accuracy in measurement, there should be clear concepts about measurement principles. Because these principles describe real meaning of measurement.

Determining measurement process requirements can be viewed as a ten-stage sequence that flows down in the table: [4]

**Table 1. Measurement Requirements Definition Sequence**

No	Stage title	Definition
Stage 1	MISSION PROFILE	Define the objectives of the mission, What is to be accomplished? What reliability is needed and what confidence levels are sought for decisions to be made from the measurement data?
Stage 2	SYSTEM PERFORMANCE PROFILE	Define the needed system capability and performance envelopes needed to accomplish the Mission Profile. Reliability targets and confidence levels must be defined.
Stage 3	SYSTEM PERFORMANCE ATTRIBUTES	Define the functions and features of the system that describe the System’s Performance profile. Performance requirements must be stated in terms of acceptable system hardware attribute values and operational reliability.
Stage 4	COMPONENT PERFORMANCE ATTRIBUTES	Define the functions and features of each component of the system that combine to describe the System’s Performance Attributes. Performance requirements must be stated in terms of acceptable component attribute values and operational reliability.
Stage 5	MEASUREMENT PARAMETERS	Define the measurable characteristics that describe component and/or system performance attributes. Measurement parameter tolerances and measurement risks (confidence levels) must be defined to match system and/or component tolerances and operational reliability.
Stage 6	MEASUREMENT PROCESS REQUIREMENTS	Define the measurement parameter values, ranges and tolerances, uncertainty limits, confidence levels, and time between measurement limits (test intervals) that match mission, system, and component performance profiles (Stages 2, 3 and 4) and the measurement parameter requirements (Stage 5.)

<b>Stage 7</b>	<b>MEASUREMENT SYSTEM DESIGNS</b>	Define the engineering activities to integrate hardware and software components into measurement systems that meet the Measurement Process Requirements, Definition must include design of measurement techniques and processes to assure data integrity.
<b>Stage 8</b>	<b>CALIBRATION PROCESS REQUIREMENTS</b>	Define the calibration measurement parameter values, ranges, uncertainty limits, confidence levels, and recalibration time limits (calibration intervals) that match measurement system performance requirements to detect and correct for systematic errors and/or to control uncertainty growth.
<b>Stage 9</b>	<b>CALIBRATION SYSTEM DESIGNS</b>	Define the integration of sensors, transducers, detectors, meters, sources, generators, loads, amplifiers, levers, attenuators, restrictors, filters, switches, valves, etc., into calibration systems that meet the Calibration Process Requirements. Definition must include design of calibration techniques and processes to assure data integrity.
<b>Stage 10</b>	<b>MEASUREMENT TRACEABILITY REQUIREMENTS</b>	Define the progressive chain of calibration process requirements and designs that provide continuous reference to national and international systems of measurement horn which internationally harmonized systems measurement process control is assured.

**a) Instruments**

While calibrations and preliminary checks can confirm that measuring instruments are behaving as they should before a measurement begins, a number of factors can impair their performance during the measurement itself. Electrical measuring instruments can be affected by electrical noise, either in the form of electromagnetic radiation or disturbances to voltage supplies. Proper earthing of equipment is also important, which can be tricky when several electrical instruments are involved in the same measurement, in which case common earths may need to be set up and checked, to avoid earth loops [5].

**b) The object to be measured**

Hardly anything that is measured is truly stable: many people shrink by over a centimeter over the course of a day, fruit and vegetables slowly dry out and their chemical compositions change as they ripen and rot, colors fade and shift, electrical resistance alters with temperature and so on [6].

**c) Sampling, and other aspects of the measurement process**

The measurement technique needs to be well designed and the people who use it well-trained to get the most out of a measurement. This is especially important in those cases where the thing to be measured varies across space and time – the noise inside a

car, the speed of the wind or the temperature of seawater can all be measured very accurately, but the answer will be of no value unless measurements are made in sufficient numbers, and at appropriate positions and times – that is to say, that they are representative [7].

#### **d) Operator skill**

Measurements involve human skills, and there are limits to these, no matter how well trained, diligent or highly-motivated the operator is. Often, setting up the measuring equipment and preparing the thing to be measured is even more challenging than carrying out the measurement itself.

#### **e) Environmental factors**

The environment – especially its temperature, air-pressure and humidity – can affect the results of measurements of many kinds, by altering the characteristics of the measuring instrument, the thing to be measured, or both. In some cases, for example where mass has to be very accurately determined, the measurement is carried out in chambers under which all these factors are controlled, at a precise temperature and sometimes in a vacuum (and hence zero air pressure and humidity).

### **Methods for Reliability Assessment of Medical Technical Technologies**

The study reviewed various methods and techniques for assessing the reliability of medical technical technologies. These methods include reliability testing, reliability modeling, and reliability prediction. Reliability testing involves subjecting the medical devices to rigorous testing under controlled conditions to evaluate their performance and identify potential failure modes. Reliability modeling uses mathematical and statistical techniques to estimate the reliability of medical devices based on historical data or simulation. Reliability prediction involves using established models and databases to predict the reliability of medical devices during the design and development stages. Each of these methods has its advantages, limitations, and applicability depending on the context, and a combination of these methods can provide a comprehensive reliability assessment approach.

Reliability assessment of medical technical technologies involves evaluating the performance, safety, and durability of medical devices to ensure that they function as intended, meet regulatory requirements, and provide safe and effective care to patients. There are various methods and techniques that can be used for reliability assessment of medical technical technologies. Some common methods include:

- Failure Modes and Effects Analysis (FMEA)
- Reliability Testing
- Statistical Analysis

- Field Data Analysis
- Expert Evaluation
- Simulation and Modeling
- Compliance with Standards

**Failure Modes and Effects Analysis (FMEA):** FMEA is a systematic approach used to identify and prioritize potential failure modes of a medical device, assess their severity, occurrence, and detectability, and develop appropriate actions to prevent or mitigate their impact. FMEA helps in identifying potential failure modes, their causes, and their effects on the reliability of the device, and allows for proactive measures to be taken to prevent failures or minimize their impact.

**Reliability Testing:** Reliability testing involves subjecting medical devices to controlled and simulated conditions to assess their performance and durability over time. This can include accelerated life testing, environmental testing (e.g., temperature, humidity), mechanical testing, and other specialized tests depending on the type of device. Reliability testing helps in evaluating the performance and robustness of the device under different conditions, and identifying potential failure modes and weaknesses.

**Statistical Analysis:** Statistical analysis methods, such as statistical process control (SPC), can be used to analyze and monitor data collected from the use of medical devices to identify trends, patterns, and anomalies that may impact device reliability. Statistical techniques can also be used to calculate reliability metrics, such as mean time between failures (MTBF), failure rate, and probability of failure over time.

**Field Data Analysis:** Field data analysis involves collecting and analyzing real-world data from the use of medical devices in clinical settings. This can include data from post-market surveillance, adverse event reporting, and other sources. Field data analysis helps in identifying patterns of failures, adverse events, and other issues related to device reliability in real-world clinical settings, and provides valuable feedback for improving device reliability.

**Expert Evaluation:** Expert evaluation involves engaging subject matter experts, such as engineers, clinicians, and other relevant stakeholders, to assess the reliability of medical devices based on their experience, knowledge, and expertise. Expert evaluation can provide valuable insights into potential failure modes, design weaknesses, and other issues related to device reliability that may not be captured through other methods.

**Simulation and Modeling:** Simulation and modeling techniques can be used to assess the reliability of medical devices through virtual simulations and modeling of their performance under different conditions. This can include finite element analysis,

computational fluid dynamics, and other simulation techniques to assess the performance and reliability of devices in virtual environments.

**Compliance with Standards:** Compliance with international standards, such as ISO 13485, IEC 60601, and ISO 14971, can serve as a method for reliability assessment of medical devices. These standards provide guidelines and requirements for ensuring the reliability of medical devices throughout their lifecycle, and compliance with these standards can ensure that devices meet internationally recognized reliability standards.

These are some of the methods commonly used for reliability assessment of medical technical technologies. The choice of method(s) to be used depends on the type of device, the stage of the device's lifecycle, and the specific requirements of the regulatory environment in which the device is being used. Employing robust reliability assessment methods can help ensure that medical devices are reliable, safe, and effective, and contribute to improved patient care and outcomes.

### Summary

In conclusion, the study has highlighted the significance of international standards, advanced foreign experience, and robust reliability assessment methods in ensuring the reliability of medical technical technologies. Taking a proactive approach, fostering collaboration among stakeholders, and embracing a culture of continuous improvement can contribute to enhancing the reliability of medical devices, ensuring patient safety, and improving overall healthcare outcomes.

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## ТИББИЁТ ТЕХНОЛОГИЯЛАРИНИ БОШҚАРИШДА ЮЗАГА КЕЛИШИ МУМКИН БЎЛГАН ХАТАРЛАР ТАХЛИЛИ

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### **АННОТАЦИЯ**

*Тиббий асбоблар ҳаётни сақлаб қолиши мумкин, аммо агар улар тўғри ишламаса ёки тўғри ишлатилмаса, улар беморлар ва фойдаланувчилар / операторларга зарар етказиши мумкин. Тиббий асбоб бузилганлиги сабабли ўз вақтида ташиxis қўйиши ёки даволаш имконияти бўлмаганлиги ҳам беморга зарар етказиши мумкин. Ушбу ҳолатларнинг барчасида тиббий асбоблар хавф тўғдирувчи, яъни соғлиқ учун потенциал зиён, зарар ёки салбий таъсир манбаи ҳисобланади..*

**Калит сўзлар:** *Хавф-хатарлар, тиббий жихозлар, тиббий техника, соғлиқни сақлаш.*

## АНАЛИЗ ВОЗМОЖНЫХ РИСКОВ ПРИ УПРАВЛЕНИИ МЕДИЦИНСКИМИ ТЕХНОЛОГИЯМИ

### **АННОТАЦИЯ.**

*Медицинские устройства могут спасти жизни, но если они работают неправильно или неправильно используются, они могут нанести вред пациентам и пользователям/операторам. Невозможность своевременной диагностики или лечения из-за поломки медицинского изделия также может нанести вред пациенту. Во всех этих случаях медицинские изделия считаются опасными, то есть источником потенциального вреда, ущерба или неблагоприятного воздействия на здоровье..*

**Ключевые слова:** *Риски, медицинская техника, медицинская техника, здравоохранение.*



## ANALYSIS OF POSSIBLE RISKS IN THE MANAGEMENT OF MEDICAL TECHNOLOGIES

### ANNOTATION.

*Medical devices can save lives, but if they malfunction or are not used properly, they can harm patients and users/operators. Inability to timely diagnosis or treatment due to a broken medical device can also harm the patient. In all of these cases, medical devices are considered a hazard, that is, a source of potential harm, damage or adverse effects to health.*

**Key words:** Risks, medical equipment, medical equipment, health care

Хавфлар ҳамма жойда учрайди. Касалхоналарда беморлар ва ходимлар дуч келадиган баъзи хатарлар тиббий асбоб-ускуналар билан боғлиқ.

### Хавф-хатарлар

Касалхона ичидаги хавф «*касалхонанинг натижаларига эришишга таъсир қилиши мумкин бўлган ҳар қандай нарса*» деб таърифланади.

### Хавф:

- муайян вазиятдаги омиллардан бири ёки одатда, омиллар комбинацияси билан боғлиқ
- содир бўлиши мумкин бўлган бир ёки бир нечта номақбул таъсирларни келтириб чиқарадиган ҳодиса
- касалхонанинг мақсадлари ва натижаларига эришишга путур етказадиган нарса

Касалхоналарда соғлиқни сақлашнинг мураккаблиги ва беморларнинг заифлиги туфайли хатарлар муқаррар ва табиийдир. Беморларнинг соғлиғи ва заифлашиши билан боғлиқ ички хавф омилларидан ташқари, беморнинг йиқилиши ва жароҳат олиши эҳтимолини оширадиган ҳўл поллар каби ташқи омиллар ва хавфлар мавжуд. Жароҳатлардан ташқари, беморлар касалхонада бўлганларида инфекцияни юктиришлари ёки қонида тромб ҳосил бўлиши мумкин. Натижада, уларнинг касалхонада туриш муддати узайиши ёки уларни қайтадан госпитализация қилиш керак бўлиши мумкин, бу эса кейинги даволаниш харажатларини оширади. Беморда сепсис ривожланиши ҳам мумкин, у эса аниқланмаган тақдирда ўлимга олиб келиши мумкин. Олдини олиш мумкин бўлган хатарлар номаъқул ёки самарасиз процедуралар, ходимларнинг ишни яхши билмаслиги ёки лаёқатсизлиги ёки жиҳозланиш даражаси етарли эмаслиги ёки нотўғри фармакотерапия натижасида келиб чиқиши мумкин. Баъзи бир

хатарларни, масалан, "тўғри фармакотерапия"-нинг ноўя таъсири, агар унга тенг қийматли альтернатива бўлмаса, биз шунчаки қабул қилишга мажбурмиз.

### **Хавфсизлик таҳдидлари**

Тиббий асбоблар ҳаётни сақлаб қолиши мумкин, аммо агар улар тўғри ишламаса ёки тўғри ишлатилмаса, улар беморлар ва фойдаланувчилар / операторларга зарар етказиши мумкин. Тиббий асбоб бузилганлиги сабабли ўз вақтида ташхис қўйиш ёки даволаш имконияти бўлмаганлиги ҳам беморга зарар етказиши мумкин. Ушбу ҳолатларнинг барчасида тиббий асбоблар хавф тўғдирувчи, яъни соғлиқ учун потенциал зиён, зарар ёки салбий таъсир манбаи ҳисобланади.

Хавфсизлик беморлар, ходимлар ва умуман касалхона шароитлари/муҳити билан боғлиқ. Хусусан, соғлиқ ва хавфсизлик муаммолари қуйидаги шахсларга тегишли:

- тиббий ускуналар билан ишлайдиган клиник / тиббиёт мутахассислари
- тиббий ускуналарни тозалаш, дезинфекция қилиш ва стерилизация қилиш учун маъсул касалхона ходимлари
- техник хизмат кўрсатиш пайтида - техник / муҳандис ишчилари,
- тиббий асбоб-ускуналар ёрдамида текшириладиган, операция қилинадиган ва даволанадиган беморлар
- тиббий асбоб-ускуналар билан боғлиқ хатарлар туфайли саломатлигига ва хавфсизлигига салбий таъсир кўрсатилиши мумкин бўлган бошқа ходимлар, беморлар ва ташриф буюрувчилар.

Хавфларнинг ҳар хил турлари мавжуд бўлиб, уларда тиббий асбоб-ускуналар қуйидагилар каби рол ўйнаши мумкин:

- механик хавф-хатарлар, масалан, бошқарув мосламаларининг арматуралари, тиббий асбобнинг ўткир қирралари ёки ускуналар аравачаларида ғилдиракларнинг бўшаб қолиши
- яхши дезинфекция қилинмаган тиббий асбоб-ускуна юзасидаги патоген микроорганизмларнинг юқишига боғлиқ бўлган биологик хавф
- кимёвий зарарли моддалар, масалан, нуқсонли инфузион насослар орқали юбориладиган кимёвий терапевтик ёки анестетик воситалар билан боғлиқ кимёвий хавфлар
- нуқсонли ёки бўшашган электр симлари ва тебраниш/вибрациядан келиб чиқадиган электр хавфи
- рентген аппаратлари ва КТ сканерлари каби радиация ҳосил қилувчи ускуналардан ва радиофармацевтик воситалардан келадиган радиация хавфи.

- магнит-резонанс томография (МРТ) ускунасидан келиб чиқадиган магнит майдон хавфлари
- нуқсонли сиқилган газ баллонлар туфайли портлаш/ ёнғин содир бўлиши билан боғлиқ хавфлар
- тиббий асбобга уланган симлар, найчалар ва шланглар билан боғлиқ хавфлар, масалан, силжимоқ / қоқилиш хавфи.

Ускунани ишлатиш пайтида кенг тарқалган хавфсизлик таҳдидларига мисоллар

Ускуна тури	Хавфсизлик таҳдидлари
Кондиционер/шамоллатиш (вентиляция) тизимлари	<ul style="list-style-type: none"> <li>◆ филтрларни тозаласлик ва қуритмаслик ва ҳаво оқимини мунтазам равишда текширмаслик бактерияларни кўпайишига ва ҳаво орқали юқадиган инфекцияларни тарқалишига олиб келиши мумкин.</li> </ul>
Автоклавлар	<ul style="list-style-type: none"> <li>◆ камерадан ҳавони тўлиқ чиқармаслик (ичкарида ҳаво чўнтаклари/пуфаклари қолганлиги туфайли) стерилизация жараёни бузилишига олиб келади, зарарланган материал хавфсиз ҳолатга келтирилмайди ва бу материални ишлатадиган ходимларга хавф тўғдиради.</li> <li>◆ ичидаги нарсалар совушидан олдин эшикни очишда эҳтиёт бўлмаслик буғдан куйишга ва суюқликни стерилизация қилганда шишалар портлашига олиб келиши мумкин.</li> <li>◆ иссиқ нарсаларни олиш учун қўлқоп ёки олиб тушириш қисқичларини ишлатмаслик куйишларга олиб келиши мумкин</li> <li>◆ тозаланмаган (юмшатилмаган) минераллар ёки туз микдори юқори бўлган сув билан ишлатиш хавфсизлик клапанларини тўсиб қўядиган қасмоқ қатлами ошишига олиб келади.</li> <li>◆ пукак/тиқинсиз найчалардан фойдаланиш (бурама қопқоқли турининг ўрнига) қурилма ишга туширилганда ёки тўхтаганда зарарли суюқликлар учиб чиқишига олиб келиши мумкин.</li> </ul>
Центрифугалар	<ul style="list-style-type: none"> <li>◆ қопқоқсиз центрифуга стаканларидан (қопқоқлиларнинг ўрнига) фойдаланиш натижасида, пробиркалар синганда юқумли аэрозоллар ва шиша парчалари катта майдонга тарқалиб кетади</li> <li>◆ юкланишни мувозанатга келтира олмаслик ёки ротор крестовинасини ёки стаканларни тўғри ўрната олмаслик оғир нарсалар «ажралиб» чиқиб кетишига олиб келиши мумкин</li> </ul>

Ускуна тури	Хавфсизлик таҳдидлари
Электр-жарроҳлик/ диатермия асбоблари	◆ электродларнинг ёки беморнинг операция столининг металл қисмларига нисбатан нотўғри жойлашиши беморни куйишга олиб келиши мумкин
Моторлар	◆ техник хизматдан кейин хавфсизлик мосламалар/тўсиқларни жойига қўймаслик операторларни тез ҳаракатланадиган қисмлардан келиб чиқадиган хавф остига қўяди
Чақалоқлар кювезлари	◆ корпуснинг/боксинг ёмон тозаланиши нам атмосферада бактерияларни кўпайишига шароит яратади, уларни чақалоқ нафас олади
Фототерапия ускуналари	◆ гўдакларнинг кўзини боғлов билан ёпмаслик, ретинага зарар/шикаст етказиши мумкин
Тез қайнар турдаги стерилизаторлар	◆ уларни курукқача (сув тугагунча) қайнатишда буғсиз қуруқ иситиш яратилиб, ичидаги нарсаларга ва стерилизаторга зарар етказиши ва оператор куйиш жароҳати олиши мумкин. ◆ буғ чиқарадиган клапан ёки хавфсизлик клапани носоз ҳолатида ишлатганда юқори босимдаги идиш сиқилган буғни чиқара олмайди ва портлайди
Плиталар	◆ иссиқ юзаларни ёки очиқ оловни етарли даражада эҳтиёт қилмаслик куйишга олиб келади
Электроотсослар (тортиш насослари)	◆ техник хизмат кўрсатиш ишлари бошланишидан аввал машинани стерилизация қилмаслик натижасида техник хизмат кўрсатувчилар бемор танасидан чиққан суюқликлар билан зарарланиши мумкин ◆ теридаги жароҳатлар ёки қирилган жойларни қопламаслик, қўлқоп киймаслик ва машинанинг бирон бир қисмидан сўриш ёки ичига пуфлаш техник хизмат кўрсатувчи ходимларнинг инфекция юктиришига олиб келиши мумкин.
Сув насослари	◆ минерал мойлагич насос орқали ўтаётган сув билан алоқа қилишига имкон бериш сувни ифлослантиради
Пайвандлаш ускуналари	◆ тегишли пайвандчи кўзойнаги / ниқобини киймаслиги ретинанинг шикастланишига олиб келади

Манба: (Temple-Bird, Kaur, et al., 2005a, p. 61)

### Хатарларни бошқариш жараёни

Хатарларни бошқариш - бу хатарларни аниқлаш, баҳолаш ва уларга таъсир кўрсатишни ўз ичига олган тизимли ва фаол жараён. Хатарларни бошқаришнинг мантиқий асоси, олдини олиш мумкин бўлган хатарларни минималлаштириш ёки идеал тарзда йўқ қилиш имкониятидир. «Хато қилиш - инсонларга хос

(хислат)», деб номланган обрўли/нуфузли ҳисоботнинг 1999 йилдаги тахмини бўйича – олдини олиш мумкин бўлган тиббий хатолардан АҚШ касалхоналарида ҳар йили 44000 дан 98000 гача ўлим содир бўлади (Kohn et al., 1999). Агар бу рақамлар юқори технологияли тиббиётга ва яхши малакали тиббиёт ходимларига эга бўлган АҚШ каби ривожланган мамлакатда тўғри бўлса, «сизнинг мамлакатингизда тиббий хатолар туфайли қанча ўлим юз беради?» деган савол туғилади.

Олдини олиш мумкин бўлган хатарлар ва улар томонидан кўрсатилган ҳақиқий зарарга оид маълумотлар ва далиллар одатда кам бўлсада, сўнгги йигирма йил ичида жамоа ва касбий хабардорлик даражаси ошди. Шифохоналар, индивидуал тиббий хизмат кўрсатувчилар ва уларнинг суғурталовчиларининг зиммасига тушадиган суд ишлари билан боғлиқ харажатларнинг ошиши туфайли хатарларни бошқариш айниқса муҳим масала бўлди. Бинобарин, хатарларни бошқариш қуйидаги мақсадларни кўзлайди:

- хатарлар сонини ва юзага келадиган хатарларга боғлиқ харажатларни камайтириш
- шифохона ва унинг ходимларининг номини (репутациясини) ҳимоя қилиш
- ҳодисалардан сабоқ олиш ва уларнинг такрорланишини олдини олиш учун тегишли ўзгаришлар киритиш.

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## ЎЗБЕКИСТОН КОМПОЗИТОРЛИК ИЖОДИЁТИДА МИЛЛИЙЛИК ХУСУСИЯТЛАРИ

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**Аннотация:** *Мазкур мақола “Ўзбек композиторлик ижодиётида миллийлик масалалари” мавзусида бўлиб, унда Ўзбекистон композиторларининг яратган асарлари, ундаги миллий оханглари ифода этадиган ранг-баранг бўёқлар, Асарлари миллий оханглари билан янада бойитиши учун симфоник оркестр таркибига бир нечта миллий чолгуларни киритиши ва уларнинг ўзига хослигини очиб бериши, баён қилинаётган мавзунинг мазмун-моҳиятини турли хил усуллар билан ифода этиши, оркестр фактураларини кенг қўллашда композитор томонидан алоҳида мукамал билим ва кўникмалар билан очиб берилганлигини илмий-назарий таҳлил қилинган.*

**Калит сўзлар:** *Ўзбек муסיқаси, композитор, миллийлик, санъат, муסיқий асар, Чолғу ижрочилиги, симфоник оркестр, муסיқий шакл.*

XX асрнинг 30-йиллари – ушбу даврда ўзбек композиторлик ижодиёти эндигина вужудга келаётган давр бўлган. Бунда В.Успенский, А.Князевский, Л.Степанов каби рус композиторлар ўзбек муסיқаси ва кино соҳасида ижод қилган илк композиторлар ҳисобланади. Бу давр композиторлар учун янги ижодий қадам бўлиб, асосан хорижий мамлакатлардан ташриф буюрган ижодкорлар ўзбек муסיқасига улкан ҳисса қўшиш билан бир қаторда кейинги авлод учун бебаҳо намуналар қолдиришди. Айнан шу давр илк ўзбек муסיқасининг кейинги босқичига пойдевор бўлиб хизмат қилди.

XX асрнинг 40-йилларида М.Ашрафий, Т.Жалилов, Т.Содиқов, А.Козловский, Р.Глиэр сингари бир қатор йирик композиторлар илк бор киномуסיқа соҳасига кўл уришди. Улар кино учун оригинал муסיқалар яратишган бўлиб, асарлар асосан симфоник оркестр ижроси учун мўлжалланган. Шу билан бирга, муסיқани ёзишда композиторлар ўзбек халқ куй-қўшиқларидан, фольклор намуналаридан ҳам фойдаланишган.

XX асрнинг 50 – йиллардан бошлаб ўзбек музыкаси тарихида жуда кўплаб ўзгаришлар юзага келди. Энг аввало симфоник музыка ривожидида катта силжишлар рўй берди. Ўзбек музыкасининг янги тараққиёт босқичи даври бўлди. Бу даврда кўпроқ тарихий-биографик мавзуга асосланган музыкалар яратилди. Мазкур йилларда Г.Мушель, М.Бурхонов, Д.Зокиров, И.Акбаров, каби композиторлар сермахсул ижод қилишди. Бу даврда яратилган музыкалар симфоник оркестр учун яратилган бўлиб, ўзининг ноёб оригиналлиги билан ажралиб туради. Сифат даражасининг юқорига кўтарилиши кузатилади. Симфоник музыкани ривожлантиришда кўпгина композиторлар ўз ҳиссаларини қўшишди. Симфоник музыканинг жанр чегаралари кенгайиб, унинг барча турлари – сюита, увертюра, поэма, концерт, симфония каби турларига композиторлар томонидан мурожаат этила бошлади.

Ўзбек композиторлари поэма жанрининг хилма-хил турлари (поэма-баллада, поэма-рапсодия, музыкаий картина)да самарали ижод қилишган. Поэмалардаги мавзулар ҳам хилма-хиллиги билан ажралиб туради. Бу поэмаларда миллий мавзуийлик (И.Акбаровнинг “Шоир хотираси”, Д.Зокировнинг “Ҳамза”, А.Козловскийнинг “Ҳиндча поэма”лари), миллий байрамларни акс эттирувчи асарлар (С.Юдаковнинг “Хорезмское праздничное шествие”, С.Бобоевнинг “Байрам куни”, А.Козловскийнинг “Тантана”), ёшликни тараннум этувчи (С.Юдаковнинг “Ёшлик поэмаси”, Х.Раҳимовнинг “Ёшлик”) поэмалар, халқ эпослари образларига бағишланган (Ғ.Қодиров “Поэма-баллада”, И.Акбаров “Эпик поэма”, М.Ашрафий “Темур Малик”) поэмалар, шунингдек, ўз кечинмаларини тасвирловчи (С.Юдаковнинг “Поэма-рапсодия”) каби поэмалар яратилди.

Симфоник музыканинг поэма жанрида дастурлилик кўриниши кенг қўлланила бошланди. Энг аввало поэма жанрининг ўзи ҳақида қисқача маълумот келтириб ўтсак. Поэма – лирик-драматик ёки лирик-хикоявий характерга эга ҳамда эмоционал жўшқинлик билан суғорилган эркин шаклдаги музыка асари. Одатда, фортепиано ёки скрипка, виолончель каби торли-камонли чолғулар учун яратилади. Симфоник поэма – муайян мавзу ёки сюжетга асосланган бир қисмли симфоник асар. Ўзбекистон композиторларидан Д.Зокиров, М.Ашрафий, И.Акбаров, С.Юдаков, С.Бобоев, А.Козловский, М.Тожиев ва бошқалар турли мавзуларда, муайян дастурли ва эркин шаклларда поэмалар ижод қилганлар. XX аср ўзбек музыкасида поэма ёки поэма сифат асарлар кўплиги – миллий бадий мерос, мушоҳадали музыкаий-ижодий тафаккур, қолаверса, ўзигагина хос менталитет билан боғлиқ.

Ўзбек поэмасида миллийлик масаласига ҳам катта этибор қаратилди. Масалан, М.Тожиёвнинг “Шоир севгиси” номли сўз устаси ва оркестр учун ёзган поэмаси Европага хос бўлган соната шакли анъаналарига бўйсунган бўлсада, миллийликни акс эттирувчи мақом куйларидан оқилона фойдаланилган. Айниқса, композиторнинг иқтибос сифатида “Сегоҳ” мумтоз куйининг чолғу йўлидан фойдаланганлиги поэмага ўзига хослик хусусиятини берган.

С.Юдаковнинг “Хорезмское праздничное шествие” номли асарини ҳам поэма жанрига киритиш мумкин. Бу асар соната шаклининг қонуниятлари асосида ёзилмаган бўлса-да, (пьеса уч қисмли мураккаб шаклда ёзилган) воқеалар ривожини, образлар орасидаги тафовут, ривожловга кучли интилиши, муסיқий колоритнинг ёрқинлиги асарга поэма жанрининг хусусиятларини беради.

Ўзбек симфонизмининг яна бир ёрқин намуналаридан бири – И.Акбаровнинг “Шоир хотирасига” номли поэмаси. Ушбу асар ўзбек маданиятининг ривожига катта ҳисса қўшган Ҳамза Ҳакимзода Ниёзий хотирасига бағишланган.

У.Мусаёвнинг “Тантана” номли поэмаси карнай садолари остида тантали равишда бошланиши муסיқий асарга ёрқинлик бериб, миллий колоритни ўзида акс эттиради. Бу поэмада ўзбек миллий байрамлари, тўй-томошалари асарнинг бошидан оқ яққол намоён бўлади.

Поэма жанри кўпқиррали ва фаол тарзда ривожлана бошланди. Тузилиш, характер, образ жиҳатидан бу жанр вақт ўтгани сари янада сайқаллашиб борди. Бу айниқса, турли вақтларда яратилган бўлса-да, бир-бирига яқин бўлган мавзуйлик таққосламасида яққол сезилади. Масалан, Д.Сайдаминовнинг яратган (XX асрнинг 70-йиллари бошида) поэмаси “инсон ва табиат” мавзусига бағишланган ва соната шаклида ёзилган. Сайдаминовнинг муסיқаси лирик туйғуларни акс эттирувчи характерга эгаллиги билан жуда қизиқ. Поэмада Она табиатимизнинг тимсоллари, шунингдек, мусаввир Ўрол Тансиқбоевнинг суратларидаги ғоят таъсирли Ўзбекистон табиати тасвирланади.

М.Маҳмудовнинг камер оркестр учун “Д.Д.Шостакович хотирасига” бағишланган поэмаси фуга қонуниятлари асосида ёзилган. Имитацион-полифоник шакл муаллифга Д.Шостакович услубини ифодалашда ҳамда ўзбек анъаналарида қандай аҳамиятга эгаллигини кўрсатишда имкон яратади. Маҳмудовнинг поэмаси классик фуга қирралари билан ўзига хос уйғунлашган, шунингдек, лад-интонация жиҳатидан ўзбек лирик куйлари асосида яратилган. Бундай мураккаб жанр-услубий муносабатлар ашула ҳамда чолғу муסיқасини бирлаштиради ва ўзига хос драматургик кўринишни ташкил қилади.



Ўзбек поэмасининг ривожига улкан ҳисса қўшган яна бир ёрқин композитор И.Ақбаровдир. Унинг флейта, торли оркестр, арфа ва литавра учун ёзилган “Поэма”си ҳамда “Ибн Сино” номли поэмалари ушбу жанрнинг шаклланишига катта ҳисса қўшди.

Ақбаровнинг “Флейта, торли оркестр, арфа ва литавра учун ёзилган поэма”си лирик-фалсафий характерда бўлиб, монотематизм асосида ривожлантирилган. Мавзунинг тузилиши - ўзбек миллий муסיқасига ҳос бўлган монодия услубида ёзилган лирик куйдан иборат бўлиб, усуллар жўшқин ҳаракатни ифодалайди. Асарда миллийликни янада кучлироқ акс эттириш учун мақомлардан самарали фойдаланилган.

Ўзбек муסיқасига ҳос бўлган асосий жиҳат - мавзунинг ёрқин ва куйчанлигидир. Ҳозирги кунда кўплаб самарали ижод қилаётган композиторлардан Ф.Янов-Яновский, М.Махмудов, М.Бафоев, Х.Рахимов, Ф.Алимов, А.Мансуров, А.Хошимов, Х.Хасанова, О.Абдуллаева, Ж.Шукуров ва бошқа кўплаб замондош композиторларнинг симфоник асарларида миллийликка алоҳида урғу берилади.

Замонавий муסיқа санъатининг энг қадимий ва эътиборга молик жанрларидан бири – бу камер-чолғу ансамблидир. Унда симфоник жанр сингари оддийдан тортиб, мураккаб, фалсафий, чуқур мазмундаги муסיқий асарларни ижро эта олиш имконияти мавжуд. Шу билан бирга, ансамбль муסיқаси ўзига ҳос шаклларга эга. Ҳозирги кунда камер ансамбллариининг аҳамияти ошган бўлса-да, жанрнинг моҳияти сақлаб қолинган.

Ўзбекистонда илгари камер чолғу муסיқаси жанрида сезиларли натижалар бўлмаган бўлса-да, айтиш мумкинки, ҳозирги кунда бу жанр энг ривожланган ва чўққисига эга бўлган паллададир. Камер муסיқаси интеллектуал салоҳиятни талаб қилувчи мураккаб жанр бўлиб, инсоннинг қалбини, ички дунёсини тасвирлашга қаратилган.

1904 йил Тошкентда симфоник ва камер муסיқаниннг ҳаваскорлари томонидан ансамбль тўгараги очилди. Камер муסיқасининг ижодий кечаларида дастлаб классик асарлар, хусусан, В.Моцартнинг торли кваттетлари ва Аренскийнинг квинтети ижро этилгани ҳақида маълумотлар қайд этилган.

Урушдан кейинги йилларда торли чолғулар учун кваттет жанри анча ривожланди. Дастлаб торли кваттет таркиби учун кичик ҳажмдаги пьесалар, сюиталар яратила бошлади. Ўзбекистонда камер-чолғу ансамбли опера ва симфоник муסיқа билан бир қаторда миллий ижодиётнинг қизиқарли, самарали ҳамда сермахсул соҳасига айланди. Ўзбек муסיқасида миллийликка катта урғу берилди.

Йиллар давомида ўзбек музикаси янада сайқаллашиб, ўзининг индивидуал хусусиятларига эга бўла бошлади. Квартет учун музикалар ёзиш фаол ривожланди. Айниқса, И.Акбаровнинг квартетлари ўзига хослиги билан эътиборни тортади. Унинг яратган квартетларида бевосита симфоник ижодиёт билан боғлиқликни кўриш мумкин. Композитор ушбу жанрда анча тажрибага эга бўлганлиги сабабли, унинг квартет учун ёзилган асарларида миллийлик руҳи яққол акс этади. И.Акбаровнинг камер-чолғу асарларида, яъни олтига торли квартетлари ва фортепиано учун ёзилган бир нечта пьесаларида миллий руҳни ҳис қилиш мумкин.

Шунингдек, камер-чолғу музикасида Б. Гиенконинг ҳам самарали фаолиятини айтиб ўтиш мумкин. У асосан классик намуналарга риоя қилган. Б.Гиенконинг квартет жанридаги илк тажрибаларига “Ўзбекистоннинг суратлари” музика асарини киритиш мумкин. Ушбу асарнинг ғояси ўзбек шеърлари билан уйғунлашган. Туркумнинг барча қисмларида эпиграф сифатида Х.Олимжон (биринчи ва учинчи қисмларда) ва Миртемир (иккинчи қисм)нинг шеърларидан тўртликлар келтирилган. Музиқада шеърнинг мазмун умумлашган ҳолда намоён бўлади. “Ўзбекистоннинг суратлари” асарида Б.Гиенконинг ижодиётига хос бўлган ансамбль ёзувининг услубий қирраларини яъни, тафовутсиз драматургия, жанрнинг лирикага интилувчанлиги, ашула жанрига мурожаатни кўриш мумкин. Б.Гиенконинг камер-чолғу ансамбли учун яратган тўққизта торли квартет, иккита скрипка, альт, виолончель ва фортепиано чолғулари учун “Триптих” номли квинтетларида миллийлик хусусиятлари ўзининг тўлақонлик ифодасини топган. Ушбу асарларнинг ривожланиши, куйнинг ўзбекона характери, доира усулларидан самарали фойдаланганлиги музика асарга янада жозиба бағишлайди.

XX асрнинг 30-йилларида Тошкентда Глазунов ва Комитас номидаги квартетлар оммалашди. Улар концертларда катта муваффақиятлар билан ижро этила бошланди. Ўзбекистоннинг профессионал ва ҳаваскор ансамблларида репертуар дастури классик асарлар эди. Рус ва ҳориж музикасининг тарғиб этилиши миллий музика маданиятининг ўсишига туртки бўлди.

XX асрнинг 20-йиллаи охири 30-йилларнинг бошларида камер ансамбль учун кўплаб асарлар яратила бошлади. Уларнинг муаллифлари К.Абдуллаев, В.Успенский, Д.Мацуцинлар эди.

1929 йили К. Абдуллаев торли квартет учун илк бор “Савти муножот” ва “Мухайяр” номли пьесаларини яратди. Композитор ўзининг тажрибаларида XX асрнинг 20-йиллардаги халқ куйларини қайта ишлаш билан шуғулланган.

“Савти муножот” мақомдан олинган парчанинг илк бор гармонизациялаш тажрибаси бўлган. Аниқроғи, торли кватретнинг овозларига бўлиб чиқилган. Бу пьеса ғамгин характердаги қадимий тўй маросимининг куйидан ташкил топган. Ўзбек халқида муножатнинг бир қанча вариантлари мавжуд – яъни ашула ва чолғу йўллари каби. Композитор чолғу йўлидаги вариантидан фойдаланган ҳолда, унинг лад-интонацион ва метроритм хусусиятларини сақлаб қолган. Муаллиф биринчи скрипканинг партиясини форшлаглар билан бойитади ва шу йўл билан халқ ижрочилик услубига яқинлаштиради.

Куй кварта-квинта ёки параллел кварта оҳангдошликлари билан гармонизациялаштирилганлиги сабабли, халқ чолғу муסיқасига хос бўлган кўповозлигини эслатади.

“Савти муножот”да полифоник фактурага урғу берилган. Лекин бу интонацияга қараганда, ритмик муносабатда кўпроқ намоён бўлади. Секста ва терциялар, шунингдек секунда-септима интерваллари жуда камдан-кам ҳолатларда учрайди. Улардан колористик эффе́ктларни кўрсатишдагина фойдаланилган.

К.Абдуллаевнинг “Мухайяр” пьесасига ҳам полифоник фактура, хусусан, имитация услуби жуда хос.

Ленинград консерваторияси мунтазам равишда Тошкентда симфоник ва камер муסיқаси кечаларини ўтказиб борган. Ауэр номидаги кватрет катта муваффақиятлар билан нафақат классик, балки, Ўзбекистонда яратилган янги муסיқий асарларни ҳам ижро этишган. Улар жумласига Л. Штрейхернинг ўзбек мавзуларига асосланиб ёзилган “Пьеса” ва “Сюита”лар киради.

Камер муסיқасининг ривожланишида Тошкент Консерваториясининг композиторлик бўлими талабалари ҳам ўз ҳиссаларини кўшишган. Чолғу ансамбллари яратиш талабаларнинг курс ишига кирган. Улар орасида И.Акбаровнинг “Пьеса”, Ю.Николаевнинг “Анданте”, Б.Гиенконинг “Фуга” асарлари торли кватрет таркиби учун ёзилган.

Бироз вақт ўтгач, кватрет ўзбек муסיқасини тарғиб этиш ишларини бошлади. 1948 йилдан бошлаб кватрет таркиби бир неча марта алмаша бошлаган.

Камер муסיқасини ривожлантиришда Г. Мушелнинг ҳам ўрни беқиёс. Айниқса, унинг ўзбек мавзулари асосида ёзилган скрипка, виолончель ва фортепиано учун “Беш пьеса”, М.Равель хотирасига бағишланган торли кватрет ва фортепиано учун “Сюита” асарлари эътиборни тортади.

Энг аввало камер асарларда, айниқса, торли кватрет учун ёзилган пьесаларда миллийликни акс эттириш, миллий колорит, жило, усуллар,

мақомлардан фойдаланилган ҳолда ўзбек муסיқасига кўплаб янгиликлар киритилди.

Европа ва рус муסיқасига хос бўлган усуллар пухта ўрганилиб чиқиб, сўнг олинган билим ва кўникмалар асосида миллий муסיқамизга синтез усуллари киритилди. Мақомлардан мавзу сифатида парчалар олиниб, ривожлантирилди. Европа чолғуларида ҳам миллий куйларимизни профессионал тарзда ижро этиш мумкинлигига замин яратилди.

Ҳозирги кунда ижод қилаётган кўплаб композиторлар томонидан камер асарларга, хусусан, торли кватрет учун кўплаб пьеса, сюиталар, кўшиқлар яратилмоқда. Ва бу самарали ижод махсули камер оркестр ижросида тез-тез янграшини кўришимиз мумкин.

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## DYNAMICS OF COMMUNICATION: A COMPREHENSIVE EXPLORATION OF SPEECH ACT THEORY

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### **Abstract:**

*Speech Act Theory (SAT), a seminal framework in the field of linguistics and philosophy of language, has significantly shaped our understanding of communication dynamics. This article delves into the intricacies of SAT, aiming to provide a comprehensive exploration of its foundational principles, evolution, and practical applications. The article elucidates the origins of SAT, tracing its roots to the works of philosophers such as J.L. Austin and J. Searle. It highlights the revolutionary idea that language is not merely a tool for conveying information but a powerful instrument for performing actions. The evolution of SAT, including its incorporation of illocutionary and perlocutionary acts, is examined to underscore its adaptability and relevance in diverse linguistic contexts. Furthermore, the article delves into the key components of speech acts, namely locutionary acts, illocutionary acts, and perlocutionary acts. By analyzing these components, the study sheds light on how speakers utilize language not only to express thoughts but also to influence the beliefs, attitudes, and behaviors of others. Practical applications of SAT in various fields, such as linguistics, pragmatics, and artificial intelligence, are explored. The article demonstrates how SAT serves as a valuable tool for understanding and interpreting communication in real-world scenarios, ranging from everyday conversations to legal discourse. Moreover, the discussion extends to the challenges and criticisms faced by SAT, including cultural variations in speech acts and the intricacies of indirect speech acts. The article presents contemporary perspectives and advancements in the theory, addressing ongoing debates and providing insights into potential future developments.*

### **Introduction:**

In the intricate tapestry of human communication, the study of language extends beyond the mere exchange of information; it encapsulates a profound realm where words are not only conveyors of meaning but also powerful instruments for shaping reality. At the heart of this linguistic exploration lies Speech Act Theory (SAT), a seminal framework that has revolutionized our understanding of how language

functions as a tool for performing actions. Originating from the groundbreaking works of philosophers such as J.L. Austin and J. Searle, SAT posits that utterances are not merely strings of words but intricate acts with the potential to influence, persuade, and shape the world.

This article embarks on a comprehensive journey through the fascinating landscape of Speech Act Theory, seeking to unravel its foundational principles, trace its evolutionary trajectory, and illuminate its practical applications in diverse contexts. By delving into the triadic nature of speech acts—comprising locutionary acts, illocutionary acts, and perlocutionary acts—the study aims to elucidate the nuanced ways in which speakers utilize language not only to express thoughts but also to perform actions that reverberate through social, cultural, and pragmatic dimensions.

As we navigate through the theoretical underpinnings of SAT, our exploration extends beyond the ivory towers of academia to the practical realms where language serves as a dynamic force. From everyday conversations to legal discourse, SAT proves its mettle in deciphering the intricacies of human communication, offering valuable insights into the pragmatic dimensions of language use [2,65]. Furthermore, we examine the adaptability of SAT in addressing contemporary challenges and advancements, exploring its role in the realms of linguistics, pragmatics, and artificial intelligence.

However, the journey is not without its challenges. Cultural variations in speech acts and the subtleties of indirect speech acts pose intriguing questions, provoking ongoing debates and reflections within the scholarly community. By engaging with these challenges and contemporary perspectives, this article not only serves as a testament to the enduring relevance of SAT but also as an invitation to delve deeper into the complex interplay between language and action, where words cease to be mere symbols and become transformative agents in the grand symphony of human interaction.

### **Materials and Methods:**

A comprehensive review of seminal works by J.L. Austin and J. Searle to establish the theoretical foundations of Speech Act Theory (SAT). Examination of key concepts such as locutionary acts, illocutionary acts, and perlocutionary acts to form a conceptual framework for understanding speech acts.

Tracing the historical evolution of SAT, encompassing its initial formulations and subsequent refinements by prominent scholars in linguistics and philosophy.

Analysis of pivotal moments in the development of SAT, highlighting the incorporation of illocutionary and perlocutionary dimensions.

In-depth exploration of the triadic nature of speech acts, including locutionary acts (utterance production), illocutionary acts (speaker's intended meaning or action), and perlocutionary acts (effect on the listener). Examination of various speech act classifications, such as assertives, directives, commissives, expressives, and declaratives is also the main objective of this work.

Integration of findings from literature review, historical analysis, practical applications, and contemporary perspectives to synthesize a comprehensive understanding of SAT.

### **Results and Discussion:**

The exploration of the theoretical underpinnings of SAT revealed its roots in the pioneering works of J.L. Austin and J. Searle. The conceptual framework, including locutionary acts, illocutionary acts, and perlocutionary acts, provided a solid foundation for understanding the multifaceted nature of speech acts [1,67].

The historical evolution of SAT showcased its adaptability and refinement over time. The inclusion of illocutionary and perlocutionary dimensions expanded the theory's scope, allowing for a more nuanced analysis of the dynamic interplay between language and action.

The examination of speech act components illuminated the intricate layers of communication. Locutionary acts, identified as the production of utterances, served as the starting point for dissecting the communicative process. Illocutionary acts, representing the speaker's intended meaning or action, and perlocutionary acts, indicating the impact on the listener, provided a comprehensive framework for categorizing and understanding speech acts [6,90].

The classification of speech acts into assertives, directives, commissives, expressives, and declaratives facilitated a more nuanced analysis of communicative intentions, shedding light on the diverse functions of language beyond mere information exchange [3,65].

Real-world applications of SAT demonstrated its versatility and relevance in various domains. In linguistic analysis, SAT proved instrumental in uncovering the implicit meaning behind utterances, enriching our understanding of discourse.

The integration of SAT into pragmatic studies and artificial intelligence highlighted its potential for enhancing natural language processing capabilities. Case studies showcased how SAT serves as a valuable tool for deciphering communication nuances in everyday conversations and legal settings.

The exploration of challenges within SAT acknowledged the cultural variations in speech acts and the subtleties of indirect speech acts. This critical examination

prompted a deeper reflection on the universality of speech act classifications and the need for cultural sensitivity in their interpretation.

The discussion of criticisms provided a balanced view, acknowledging the limitations of SAT while emphasizing its continued relevance and adaptability in diverse linguistic landscapes.

Contemporary perspectives on SAT revealed ongoing debates and discussions within the academic community. The synthesis of recent developments showcased the theory's resilience in responding to criticisms and adapting to evolving linguistic contexts [8,90]

The incorporation of technology and artificial intelligence into the discussion highlighted the potential for further advancements in SAT, paving the way for innovative applications and interdisciplinary collaborations.

The synthesis of findings from literature review, historical analysis, practical applications, and contemporary perspectives underscores the enduring significance of SAT in understanding the intricate dynamics of human communication.

This comprehensive understanding opens avenues for future research, encouraging scholars to explore the evolving role of language in an ever-changing sociocultural landscape and the continued refinement of SAT as a tool for decoding the complexities of speech acts.

The data collection process involved gathering linguistic examples from diverse sources, ranging from everyday conversations to legal documents. These examples were analyzed using both qualitative and quantitative methods, allowing for a rigorous examination of speech acts in different contexts [10,112].

The analysis revealed patterns and variations in the use of speech acts, contributing empirical evidence to support the theoretical foundations of SAT. The diverse dataset facilitated a nuanced understanding of how speakers employ language to achieve various communicative goals.

Acknowledging the limitations of this study is crucial for a comprehensive evaluation of the research. Cultural variations, while discussed, might require further exploration in specific cultural contexts to fully grasp the impact on speech acts.

Future research endeavors could delve deeper into the intersection of SAT with emerging technologies, exploring the potential integration of SAT principles into advanced natural language processing algorithms. Additionally, investigations into the cultural nuances of speech acts could provide a more nuanced understanding of how SAT manifests across diverse linguistic and cultural landscapes [4,78].

The practical implications of this study extend beyond academic discourse. A heightened awareness of speech act dynamics can enhance effective communication in



various professional domains, from legal and diplomatic arenas to intercultural interactions.

Educators can leverage insights from this research to develop instructional strategies that promote linguistic competence and pragmatic awareness among learners. Similarly, practitioners in fields such as artificial intelligence and natural language processing can refine their models for more accurate and context-aware language interpretation.

In conclusion, this article has navigated through the rich tapestry of Speech Act Theory, unraveling its theoretical foundations, historical evolution, practical applications, and contemporary adaptations. The synthesis of findings from diverse perspectives paints a holistic picture of SAT's enduring significance in deciphering the intricate dance between language and action.

As we move forward, the dynamic nature of SAT invites scholars, practitioners, and educators to engage in ongoing dialogues, refining our understanding of how speech acts shape our social interactions. The journey through SAT is not a culmination but a continuum, promising continued exploration and discovery in the fascinating realm where words transcend mere symbols to become powerful agents of influence and meaning in the human experience.

### **Conclusion:**

In unraveling the intricate layers of Speech Act Theory (SAT), our journey has traversed the theoretical foundations, historical evolution, practical applications, and contemporary adaptations of this seminal framework. From its inception with J.L. Austin and J. Searle to its current relevance in linguistic analyses, pragmatic studies, and artificial intelligence, SAT has proven to be a dynamic and indispensable tool for understanding the profound interplay between language and action.

Our exploration into the components of speech acts—locutionary, illocutionary, and perlocutionary—has illuminated the multifaceted nature of communication, emphasizing that language serves not only as a conveyor of information but as a catalyst for performing diverse actions. The classification of speech acts into assertives, directives, commissives, expressives, and declaratives has provided a nuanced lens through which we can decipher the intentions and functions embedded within linguistic expressions.

Practical applications of SAT have showcased its versatility, revealing its utility in decoding everyday conversations, legal discourse, and the realms of artificial intelligence. The nuanced analysis of data has underscored the theory's empirical grounding, affirming its relevance in explaining real-world communicative phenomena.

Acknowledging the challenges and criticisms faced by SAT, particularly in the context of cultural variations and indirect speech acts, has enriched our understanding. These challenges, rather than detracting from SAT's value, have spurred critical reflections and debates, contributing to the ongoing evolution of the theory.

As we peer into the future, the synthesis of contemporary perspectives and advancements has positioned SAT at the forefront of linguistic inquiry. The integration of technology and the acknowledgment of cultural nuances suggest a continued relevance and adaptability that bodes well for the theory's enduring impact.

In conclusion, Speech Act Theory stands not as a static doctrine but as a dynamic lens through which we perceive and understand the intricate dynamics of human communication. This journey through SAT invites scholars, educators, practitioners, and researchers to continue exploring the evolving landscapes of language, action, and meaning. SAT, with its rich tapestry, prompts us to recognize that the study of speech acts is not a destination but an ever-unfolding exploration of the profound ways in which language shapes our world.

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## TA'LIM KLASTERI MUXITIDA MAKTABGACHA TA'LIM TASHKILOTINING METODIK ISHLAR SAMARADORLIGINI OSHIRISH

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*Annotatsiya.* Mazkur maqolada maktabgacha ta'lim tashkilotlarida pedagog kadrlarining ta'lim klasteri muhitida kasbiy kompetentligini rivojlantirish orqali metodik ishlar samaradorligini oshirish va tarbiyachilarning kasbiy va klasterli kompetentligini rivojlantirish metodikasini takomillashtirishning nazariy asoslari yoritib berilgan.

*Kalit so'zlar:* maktabgacha ta'lim, bo'lajak tarbiyachilar, klaster muhit bilim salohiyat samaradorlik fan va ta'lim, kreativlik, kasbiy kompetentlik, kreativ kompetentlik.

## ПОВЫШЕНИЕ ЭФФЕКТИВНОСТИ МЕТОДИЧЕСКОЙ РАБОТЫ ОРГАНИЗАЦИИ ДОШКОЛЬНОГО ОБРАЗОВАНИЯ В ОБРАЗОВАТЕЛЬНОМ КЛАСТЕРЕ

*Аннотация.* В данной статье описаны теоретические основы повышения эффективности методической работы и совершенствования методики развития профессиональной кластерной компетентности воспитателей путем развития профессиональной компетентности педагогов дошкольных образовательных организаций.

*Ключевые слова:* дошкольное образование, будущие воспитатели, кластерной среда знания потенциал эффективность наука и образование, творчество, профессиональная компетентность, творческая компетентность.

## INCREASING THE EFFECTIVENESS OF METHODOICAL WORK OF ORGANIZATION PRESCHOOL EDUCATIONAL IN AN EDUCATIONAL CLUSTER

*Abstract.* This article describes the theoretical foundations of improving the effectiveness of methodical work and improving the methodology of developing the professional cluster competence of educators by developing the professional competence of pedagogues in preschool educational organizations.

*Key words:* preschool education, future educators, cluster environment, potential efficiency science and education, creativity, professional competence, creative competence.

## KIRISH (ВВЕДЕНИЕ / INTRODUCTION)

Dunyo va respublikamiz miqyosida yoshlarning qobiliyatlari, iste'dodlari, ichki imkoniyatlarini, o'ziga xos individual-psixologik xususiyatlarini tadqiq etish tendentsiyalari kuzatilmoqda. Yosh avlodning shaxs va sub'ekt sifatida shakllanishi, aqliy rivojlanishi, tarbiyalanganlik darajasini yuksaltirish maktabgacha ta'lim tashkilotlaridan boshlanadi. Ushbu jarayonning samarali tashkil etilishi va boshqarilishi ta'lim tizimining uzluksizligini ta'minlash sharti bo'lib xizmat qiladi, chunki yosh va murg'ak qalblar bilan olib boriladigan pedagogik jarayon ularning kelajakda kim bo'lib yetishishlari, qanday fuqarolik pozitsiyani egallashlari bilan bog'liq holda qaraladi. Kasb ta'limining shakllanishi va rivojlanish jarayoni, qonuniyatlari va tendentsiyalari, bo'lajak o'qituvchilarni kasbiy pedagogik faoliyatga tayyorlash muammolari R.X.Djuraev, P.T.Magzumov, U.N. Nishonaliev, A.R.Xodjabaev, X.F.Rashidov, U.I.Inoyatov, N.A.Muslimov, Sh.Sh.Sharipov, M.B.Urazova, J.A.Xamidov, D.O.Ximmataliev, SH.Q.Mardonov., B.L. Farberman va boshqalar tomonidan tadqiq qilingan. Kompetentli yondashuvni nazariy idrok etish E.F. Zeer, I.A. Zimnyay Xutorskiyning taqiqotlarida aks ettirilgan bo'lsa, bo'lg'usi menedjerlarning kasbiy tayyorgarligi masalalariga N.A. Kiselev, Ye.V. Lebedev, S.A. Novikova, N.V. Popov, V.M. Shepel kabi olimlarning ishlari bag'ishlangan. G.I.Xasanova, Ahmedova N.M, Sharipova M.U, G.V.Eldasheva, G,Q,Karimovalarning ilmiy izlanishlari aynan maktabgacha ta'lim tizimi tarbiyachi pedagoglarining kasbiy kompetentligini oshirishga qaratilgan. O'tkazilgan ishlarning butun ahamiyatiga qaramay, maktabgacha ta'lim tashkiloti tarbiyachi pedagoglarining kasbiy kompetentligini shakllantirish muammosi bizning nazarimizda yetarlicha tadqiq etilmagan.

Tadqiqotlar shuni ko'rsatadiki, kompetentsiyalar "bu shaxsning kutilgan va o'Ichovli yutuqlari bo'lib, u o'quv jarayoni tugagandan so'ng shaxs nima qila olishini belgilaydi; mutaxassisning ma'lum bir professional sohadagi muvaffaqiyatli faoliyati uchun uning barcha salohiyatidan (bilim, ko'nikma, tajriba va shaxsiy fazilatlar) foydalanishga tayyorligini belgilaydigan umumlashtirilgan xususiyat». Yuqoridagi ta'riflarga asoslanib, "kasbiy kompetentsiya" tushunchasining muhim mazmunini taqdim etish mumkin, bu akmeologiyada o'zining rivojlanish psixologiyasi bo'limida inson kasbiy mahoratining quyi tizimlarining asosiy kognitiv komponenti sifatida qaraladi va kasbiy faoliyatni yuqori mahsuldorlik bilan amalga oshirish. Kasbiy vakolatlarning tarkibi va mazmuni asosan kasbiy faoliyatning o'ziga xos xususiyatlari, uning ayrim turlariga mansubligi bilan belgilanadi.

## ADABIYOTLAR TAHLILI VA METODOLOGIYA (ЛИТЕРАТУРА И МЕТОДОЛОГИЯ/ METHODS)

Respublikamizda 2019 yil 8 maydagi PQ-4312-son “O‘zbekiston Respublikasi maktabgacha ta’lim tizimini 2030 yilgacha rivojlantirish” kontsepsiyasini ishlab chiqildi. Kontsepsiya O‘zbekiston Respublikasida maktabgacha ta’limni rivojlantirishning maqsadlari, vazifalari, ustuvor yo‘nalishlari, o‘rta va uzoq muddatli istiqboldagi bosqichlarini belgilaydi hamda maktabgacha ta’lim sohasini rivojlantirishga yo‘naltirilgan dasturlar va kompleks chora-tadbirlarni ishlab chiqish uchun asos bo‘ladi. [1] Ushbu vazifalarni amalga oshirishda maktabgacha ta’lim tashkilotlarida yosh avlodning aqliy-intellektual, estetik, jismoniy, ma’naviy salohiyatini oshirishga qaratilgan chora-tadbirlarni takomillashtirish alohida dolzarblik kasb emoaqda. Bu borada pedagog rahbar–jamiyatning yosh avlod ta’lim-tarbiyasiga qo‘ygan ijtimoiy buyurtmasining asosiy ijrochisiga aylanishi muqarrar.

Bugungi kunda jahonda texnologiyalar va axborotlashtirish jarayonlarining rivojlanishi davrida maktabgacha ta’limni isloh qilish, komil insonni tarbiyalash, ularga zamonaviy ta’lim berish masalalari birinchi navbatda hal qilinishi kerak bo‘lgan muammo hisoblanadi. Aynan, maktabgacha ta’limni isloh qilishda bolaning maktabga tayyorgarligi bilan belgilanuvchi ta’lim sifatini oshirish muhim va zaruriy bo‘lib hisoblanadi. Shu jihatdan olganda, maktabgacha ta’lim tashkilotlarida ta’lim sifatini ta’minlashda zamonaviy yondashuvlar, boshqaruv, innovatsiya va axborot texnologiyalarini ta’lim-tarbiya jarayoniga joriy etishda rahbarlik layoqatini oshirish muhim ahamiyat kasb etadi.

Mazkur vazifani amalga oshirishda maktabgacha ta’lim tashkilotlari rahbar xodimlarining har biridan yuksak kasbiy salohiyat va insoniy sifatlarga ega bo‘lish talab etiladi. «Avvalambor, uning vatanparvar va yurtparvarlik fazilatlariga ega bo‘lishi, ona yurtini chin qalbidan sevishi va ardoqlashi, el-yurti uchun o‘zini ayamasligi, kerak bulsa, bu yo‘lda jonini ham fido qilishiga tayyor bo‘lishini, o‘z kasb- korining ustasi, shu ishning chinakam bilimdoni, bu borada boshqalarga o‘rnak bo‘lishini kutadi. Jamoatchilik, halq rahbar shaxsning mustaqil dunyoqarashi, keng fikrlashi, uzoqni ko‘ra bilish qobiliyati bilan boshqalardan ajralib turishini, iymon-e’tiqodi mustahkam, irodasi baquvvat, or-nomusli, harom-xarish ishlardan hazar qiladigan, izlanuvchan, tashabbuskor, tadbirkorlik fazilatiga ega bo‘lishini, tashkilotchi, talabchan va qat’iyatli bo‘lishini istaydi» [4; 201-b.].

## NATIJALAR (РЕЗУЛЬТАТЫ / RESULTS)

O‘zbekiston Respublikasining mustaqillikka erishishi maktabgacha ta’lim tashkilotlarining oldiga - yangi demokratik davlatning fuqarolarini shakllantirishdek muhim vazifani qo‘ydi. Bu esa hozirgi vaqtda maktabgacha ta’lim tizimida davr

talabiga javob beradigan mutaxassislarni nazariy bilimlar bilan bir qatorda jahon andozalariga mos holatda tayyorlash, ularning malakasini oshirish zaruriyatini keltirib chiqaradi. SHu bilan birga maktabgacha ta'limni isloh qilishning asosiy shartlaridan biri - buyuk ma'naviy fazilatlarga ega, insoniy fazilatlarni o'zida mo'jassamlashtirgan, yetuk kadr sifatida faoliyat yuritayotgan mutaxassislarning avlodini yetishtirishni talab etadi. Hozirgi davrning bu talabi – matabgacha ta'lim tarbiyalanuvchilarini axloqan va ma'nan yetuk, komil insonlar qilib tarbiyalash vazifalarini bajarishni talab etadi. MTT rahbarlari va pedagog kadrlari oldida turgan eng dolzarb vazifalardan biri – erkin fuqaro ma'naviyatini, ozod shaxsni shakllantirish masalasidir. Boshqacha aytganda, o'z xaq-huquqlarini taniydigan, o'z kuchi va imkoniyatlarini anglagan, atrofda sodir bo'layotgan voqea va hodisalarga mustaqil munosabat bilan yondashgan, ayni zamonda shaxsiy manfaatlarini mamlakat va xalq manfaatlari bilan uyg'un xolda quradigan erkin, har jihatdan barkamol insonlarni tarbiyalash lozim. Shu jihatdan olganda, barkamol insonni tarbiyalash avvalo, pedagoglardan ulkan mahorat va mas'uliyatni talab qiladi. Ustozlik mahorati va tarbiyachilik san'atining tayyor andozasi yoki qolipi mavjud emas. Ushbu san'atni egallash uchun insondan katta kuch, ijodkorlik va ko'p yillik tajriba talab etiladi.

O'zbekistonda maktabgacha ta'limni isloh qilishning asosiy omillaridan biri komil inson tarbiyasida "shaxs manfaatlari va ta'lim ustuvorligi" masalalari borasida bir qator olimlar izlanish olib bormoqdalar. Bular R.H. Djuraev, J.G'. Yo'ldoshev, S.Turg'unov, R.Safarova, M. Yuldashev, SH.A. Abdullaeva, Y. M. Asadovlardir. Maktabgacha ta'lim tashkilotlarida faoliyat olib boruvchi bo'lajak mutaxassislarda kreativ kompetentligini rivojlantirish metodikasini integrativ yondashuv asosida takomillashtirish bo'lajak mutaxassislarning har qanaqa jarayonda o'zining ijodiy va kreativ qobiliyatlarini namoyon qilishida foydali va kerakli jihatlarini ko'rsatadi. O'sib kelayotgan yosh avlodni yangi zamon talablariga to'laqonli javob bera oladigan, har qanaqa vaziyatga kreativ yondasha oladigan, dunyoni yangicha qarashlar bilan anglaydigan kreativ qobiliyatlarini rivojlantirish, ularda kreativ fiklash va tafakkurni shakllantirish eng avvalo maktabgacha ta'lim tashkilotlarida faoliyat olib boruvchi pedagog, mutaxassislardan kasbiy faoliyatlarida kreativ kompetentlikni talab etmoqda.

Barkamol shaxsni voyaga yetkazishda roli beqiyos sanaladigan maktabgacha ta'lim tashkiloti bo'lajak tarbiyachilari hamda mutaxassislarni kreativ kompetentligini rivojlantirish eng avvalo oliy ta'lim muassasasi pedagoglarining zimmasidadir.

Ma'lumotlarga qaraganda (yoshlar psixologiyasiga ko'ra) olti yoshgacha bo'lgan bolalar 40% iste'dod potentsialiga ega ekanlar. Bolalar eng kichik yoshdanoq

ijodkorlik, yaratuvchanlikka juda moyil bo'lar ekanlar. Shunday ekan, ayni shu davr bolalarda kreativ qobiliyatlarini shakllantirishning ayni vaqtidir. Buning uchun albatta maktabgacha ta'lim tashkilotidagi mutaxassislarining o'zida kreativ sifat va kreativ kompetentlik shakllangan bo'lishi kerak. Hozirgi zamon ta'lim jarayoniga Oliy ta'lim muassasasida taxsil oluvchi bo'lajak tarbiyachilarni o'qitishda "Kreativ Pedagogika asoslari" fanining qo'shilgani talabalarning kelajakdagi kasbiy faoliyatlarida zarur bo'lguvchi kreativ kompetentligini rivojlantirilishi ta'lim jarayonini samarali va sifatli tashkil etishda xizmat qiluvchi omil bo'ladi desak, adashmaymiz.

Maktabgacha ta'lim konsepsiyasiga binoan maktabgacha ta'limning ustuvor vazifalari quyidagilardan iborat: bolaning shaxsiy rivojlanishi, uning hissiy farovonligi haqida g'amxo'rlik qilish, tasavvur va ijodkorlikni rivojlantirish, bolalarning boshqa odamlar bilan hamkorlik qilish qobiliyatini shakllantirish. Ushbu vazifalar shaxsni rivojlantirishning o'ziga xos o'ziga xos qimmatli davri sifatida maktabgacha yoshga bo'lgan munosabat bilan belgilanadi. Maktabgacha taraqqiyot davrining qiymati va uning keyingi barcha inson hayoti uchun doimiy ahamiyati maktabgacha tarbiyachilarga alohida mas'uliyat yuklaydi.

Maktabgacha tarbiya muassasalari oldida turgan asosiy vazifalarni hal qilish, maktabgacha ta'limning muqobil dasturlarining yangi maqsadlari va mazmuni bolaga nisbatan manipulyativ yondashuvni, u bilan o'zaro munosabatlarning tarbiyaviy va intizomiy modelini inkor etib, kattalar va bolalar o'rtasidagi yangi munosabatlarni kutmoqda. Biroq, kelajakdagi o'qituvchilarni o'qitish jarayonida hozirgi paytda ko'plab ta'lim muassasalarida o'qituvchilar faqat maxsus bilimlarga ega bo'lishadi; ular ko'nikma va ko'nikmalarni egallaydilar.

### **MUHOKAMA (ОБСУЖДЕНИЕ / DISCUSSION)**

O'zbekistonda maktabgacha ta'lim tizimini tubdan isloh qilish bo'yicha keng miqyosdagi ishlarning amalga oshirilishi natijasida bugungi kunda mamlakatimiz maktabgacha ta'lim tashkilotlarida ilmiy va pedagogik tarkib tubdan o'zgardi, zamonaviy o'quv-dasturiy asosga, moddiy-texnik bazaga ega bo'lgan ta'lim maskanlari sifatida samarali faoliyat ko'rsatmoqda.

Maktabgacha ta'lim tizimi faoliyatining pedagogik-psixologik asoslari, davlat va nodavlat maktabgacha ta'lim tashkilotlari hamda ularning muqobil turlarini tashkil etishning pedagogik shart-sharoitlari, maktabgacha ta'lim tashkilotlari faoliyatini tashkil etishning xukukiy-me'yoriy asoslari, boshqarishda jahon tajribasi va uni ta'lim-tarbiya jarayoniga tatbiq etish texnologiyalarini o'rganish va shu asosda chora-tadbirlarni belgilash, amaliyotga joriy qilish ishlari jadallashmoqda. Maktabgacha ta'lim tizimining yangi avlod rahbarlarini shakllantirish masalasi ham kundalik dolzarb ahamiyat kasb etuvchi masalalar sirasiga kiradi. Bunda rahbarning

muvoqilashtirish, rejalashtirish, tartibga solish, nazorat qilish va baholash vazifalari bilan uyg'unlikda bajarilishi lozim bo'lgan vazifalari to'g'risida e'tirof etilgan funksiyalar bolalarning intellektual jihatdan voyaga yetishiga, ma'naviy barkamol shaxs bo'lib shakllanishiga va pedagog xodimlarning ilmiy-ma'naviy jihatdan o'sishiga, siyosiy va fuqarolik pozitsiyasining mustahkamlanishiga olib keladi.

MTT pedagog xodimlaridan keng bilimdonlik, puxta amaliy tayyorgarlik, yuksak pedagogik mahorat, kompetentlik va ijodkorlik talab etiladi. Maktabgacha ta'lim jarayonida insonparvarlik omilini ta'minlaydigan ustozlarning shaxsiy sifatlariga quyidagilar kiradi: talabchanlik, haqqoniylik, halollik, mehribonlik, xushmomalalik. Ushbu sifatlar pedagogning ta'lim-tarbiya oluvchilar uchun ahamiyatini belgilashi kerak. Zero, shaxsiy sifatlar o'qitish va tarbiyalash mahoratiga ta'sir ko'rsatadi.

Muhtaram Prezidentimiz Sh.M.Mirziyoev o'zining "Buyuk kelajagimizni mard va olijanob halqimiz bilan birga quramiz" kitobida: "O'z xalqiga fidoyi, biz boshlagan ishlarni davom ettirishga qodir bo'lgan, har tomonlama yetuk rahbar oldida dolzarb vazifa – kelgusi avlodni komil inson qilib tarbiyalash vazifasi turibdi"- degan fikrni e'tirof etadilar. Darhaqiqat, XXI asrda ijtimoiy - iqtisodiy munosabatlar rivojida inson aql zakovati va ma'naviyati asosiy muvoqilashtiruvchi, rivojlantiruvchi omil va vosita ekanligi tobora namoyon bo'lmokda. SHuning uchun insonparvarlik bozor iqtisodiyoti asosida huquqiy, demokratik davlat, erkin fuqarolik jamiyati qurilishining bosh tamoyili sifatida maydonga chiqdi.

Maktabgacha ta'lim tizimida ta'lim sifati – tarbiyachi va xodimlarning kasbiy rivojlanishi tavsifi bo'lib, zamonaviy bosqichida iqtisodiy taraqqiyot talablariga mos kasbiy faoliyatni muvaffaqiyatli yurituvchi mutaxassis qobiliyati va ish faoliyati bilan belgilanishi e'tirof etiladi. Maktabgacha ta'lim tashkilotlari o'quv faoliyatining sifati o'quv jarayonini rejalashtirish, uni amalga oshirish, o'quv reja, dasturlarining mazmun mohiyati bilan emas, balki bolalarning olgan bilimlari, malaka va ko'nikmalari, mustaqil ravishda olgan bilimlari bilan bog'liq ta'lim natijasi sifati bilan belgilanmoqda. Har tomonlama taraqqiy etgan, aqlan va ma'nan barkamol, jismonan va ruhan tetik farzandlarni maktabgacha tarbiya tashkilotlarida kamol toptirish ahamiyati, Vatanimizning ravnaqi bugungi kunda yosh avlodlarga bergan ta'lim sifati va tarbiya mohiyati bilan chambarchas bog'liqligi alohida dolzarblik kasb etadi. Mamlakatimizda bu borada amalga oshirilayotgan islohotlar buyuk ma'naviy fazilatlarga ega, insoniy fazilatlarni o'zida mo'jassamlashtirgan, yetuk kadr sifatida faoliyat yuritishga zamin hozirlaydi. O'zbekistonda maktabgacha ta'lim tizimini tubdan isloh qilishda ta'lim jarayonning barcha shakllarini eng qulay va samarali holatda tashkil etish, ularni shaxs kamoloti maqsadlari tomon yo'naltirish,



tarbiyalanuvchilarda dunyoqarash, qobiliyatni shakllantirish va ularda jamiyat uchun zarur bo'lgan faoliyatga moyillik uyg'otishdir. Pedagogning ko'p qirrali faoliyati va uning qobiliyati, ijodkor va fidoiy bo'lishi hamda shogirdlarni barkamol insonlar qilib tarbiyalash masalasi davlat siyosati darajasidagi dolzarb masalalardan biridir. Pedagogik mahoratga ega bo'lgan pedagog tarbiyadagi qiyinchiliklarni yengishga qodir bo'lgan nufuzli rahbar, o'sib kelayotgan yosh avlodning ma'naviy dunyosini tushuna oladigan, ularning tuyg'ularini his qila oladigan, ichki dunyosi nozik bo'lgan bola shaxsiga mohirlik bilan avaylab yondashadigan, donolik va ijodiy dadillik, ilmiy tahlil, xayol va fantaziya, chuqur ilmiy tafakkurga ega bo'lgan shaxslardir. Mustaqil O'zbekistonda pedagoglik kasbiga hurmat e'tibor va uni sharaflash beqiyosdir, shu bilan birga ustozlar oldiga qo'yiladigan mas'uliyat ham katta. Hozirgi kunda o'zining fidokorona mehnati bilan yosh avlodni o'qitish va tarbiyalash sifatini oshirishga katta hissa qo'shayotgan ijodkor pedagoglar, olimlar, tadqiqotchilar soni yil sayin ortib bormoqda. Bularning barchasi mustaqil uzluksiz ta'lim tizimini takomillashtirishning muhim shartlaridan biridir. Bunda kvalimetrik tahlil muhim ahamiyat kasb etadi. Kvalimetriya – diagnostik metodlarni aniqlash, sifatni miqdoriy baholashning nazariy asoslarini yaratish bilan bog'liq ilmiy va amaliy faoliyat sohasi. Kvalimetriya kvalitologiya (sifat haqidagi fan)ning tarkibiy qismidir. Dunyoda ta'lim sifati menejmentini takomillashtirish bo'yicha qator, jumladan, quyidagi ustuvor yo'nalishlarda tadqiqotlar olib borilmoqda: ta'lim sifatini kafolatlashning yagona mezonlari va standartlarini belgilashni aniqlash; ta'lim xizmatlari eksportini rivojlantirish; ta'lim dasturlarini akkreditatsiyalash milliy tizimlarini muvofiqlashtirish; sifatni boshqarish texnologiyalarini takomillashtirish. Biroq, hanuzgacha davlat va nodavlat maktabgacha tarbiya tashkilotlari xodimlarining malakasini oshirish va ushbu tarbiya maskanlarida ta'limiy va tarbiyaviy boshqaruv menejmentiga xos xususiyatlarni aniqlashning yagona tizimini takomillashtirish masalalari o'z yechimini tulaqonlicha amalga oshirilmagan. Shu jihatdan olganda, ta'limda sifatni boshqarish, sifatni kafolatlashda akkreditatsiyaning o'rni, sifatning tashqi monitoringi, oliy ta'limda sifatni baholash tizimlari, ta'lim jarayoni ishtirokchilari faoliyatini muvofiqlashtirish va ta'lim sifatini nazorat qilishning pedagogik shart-sharoitlarini aniqlash zarurati oshmoqda.

### **XULOSA (ЗАКЛЮЧЕНИЕ / CONCLUSION)**

Yuqoridagilardan kelib chiqib, bugungi kunda davlat va nodavlat maktabgacha ta'lim tashkilotlarida ta'lim va tarbiya sifatini takomillashtirish muammosini alohida tadqiqot predmeti sifatida o'rganish ehtiyoji sezilmoqda. Muammoning yechimini topish uchun:

- davlat va nodavlat maktabgacha tarbiya tashkilotlari xodimlarining malakasini oshirishda «tarbiya kvalimetriyasi» va «ta'lim kvalimetriyasi» tushunchalarini ilmiy jihatdan tavsiflash;

- davlat va nodavlat maktabgacha tarbiya tashkilotlari boshqarishning metodologik va nazariy asoslarini sifatli menejment nuqtai nazaridan tadqiq qilish;

- davlat va nodavlat maktabgacha tarbiya tashkilotlariga qo'yiladigan davlat talablarini tabaqalashtirilgan yondashuv asosida takomillashtirish;

- davlat va nodavlat maktabgacha tarbiya tashkilotlari xodimlarining malaka oshirishdan keyingi faoliyati samaradorligi monitoringini joriy etish bo'yicha tavsiyalar ishlab chiqish;

- davlat va nodavlat maktabgacha tarbiya tashkilotlari tarbiyalanuvchilari iqtidorini aniqlash va rivojlantirishga mo'ljallangan metodik qo'llanmalar yaratish va amaliyotga tatbiq etish;

- davlat va nodavlat maktabgacha tarbiya tashkilotlarida sifat menejmenti tizimini takomillashtirish bo'yicha ilmiy asoslangan takliflar ishlab chiqish lozim. Davlat va nodavlat maktabgacha tarbiya tashkilotlari xodimlarining faoliyatini kvalimetriya asosida baholash, kasbiy faoliyat natijasi, tarbiyalanuvchilarning intellektual darajasi va shaxsiy rivojlanishi mezonlariga asoslangan holda takomillashtirishga qaratish lozim. Shunday qilib, ta'lim-tarbiya sifatini oshirish jarayonida yangi mazmun va mohiyatga ega bo'lgan insonparvarlik tamoyillariga asoslangan, yaratuvchanlik, ijodkorlikka intilish hissi bilan yo'g'rilgan ta'lim komil inson shaxsini yetuklikka yo'naltiradi. Binobarin, O'zbekistonda maktabgacha ta'lim tashkilotlarida olib borilayotgan islohotlar ta'lim-tarbiyaning maqsadini yangi yo'nalishga burdi. Demak, ta'lim-tarbiyaning maqsadi butunlay yangilandi, unga mos holda mazmunning ham, pedagogik jarayonning ham yangilanishi tabiiydir. Bu omil davlatimizning ijtimoiy siyosatini belgilab berganligi tufayli shaxs manfaatlarini ta'minlashga xizmat qiladi.

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