ISSN: 2181-3116
2181-3108

VOLUME-28

ISSUE-1

June - 2024

# WORLD SCIENTIFIC RESEARCH JOURNAL

WORLD
scientific research journal

www.wsrjournal.com

doi iD OPEN ACCESS

# WORLD SCIENTIFIC RESEARCH JOURNAL

International scientific electronic journal

Volume-28 _Issue-1

June - 2024

# World scientific research journal

## Jahon ilmiy tadqiqot jurnali

**MUASSIS:**

**Qo'qon davlat pedagogika instituti, "Ustozlar uchun" MCHJ**





**O'zbekiston Respublikasi Prezidenti Administratsiyasi huzuridagi Axborot va ommaviy kommunikatsiyaragentligi tomonidan berilgan 1547 raqamli guvohnoma asosida ro'yhatga olingan**

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***Fan tarmoqlari: Matematika, fizika, informatika, geografiya, psixologiya, ijtimoiy fanlar***

# HOZIRGI AXBOROTLASHGAN JAMIYATDA DASTURLASH TILLARINING AHAMIYATI

***Mamayusufov Mirkomil Qahramon o‘g‘li***
*Termiz davlat pedagogika instituti*
*mirkomil3616@gmail.com*
***Vohidov Diyor Baxtiror o‘g‘li***
*Termiz davlat pedagogika instituti*
*vohidovdaler61@gmail.com*

**Annotatsiya:** Ushbu maqolada hozirgi axborotlashgan jamiyatda dasturlash tillarining ahamiyati haqida so’z boradi.

**Kalit so'zlar:** Dasturlash tillari, axborotlashgan jamiyat, innovatsiyalar, ish o‘rinlari, raqamli savodxonlik, texnologik infratuzilma, my.gov.uz platformasi.

**Kirish:** Biz bugun yashayotgan raqamli texnologiyalar asrida dasturlash tillari zamonaviy texnologiyalar bilan o‘zaro munosabatimizni shakllantirishda hal qiluvchi rol o‘ynaydi. . Har bir dasturlash tili o‘ziga xos xususiyatlari va qo‘llanish sohalari bilan ajralib turadi. Ularning ahamiyati texnologik taraqqiyotga, iqtisodiy rivojlanishga va jamiyatdagi o‘zgarishlarga hissa qo‘shadigan turli sohalarni qamrab oladi. Ushbu maqola hozirgi axborot jamiyatimizda dasturlash tillarining ko'p qirrali ahamiyatini o’rganadi.

Hozirgi kunda dasturlash tillari raqamli transformatsiya jarayonining asosiy tarkibiy qismlaridan biridir. Turli sohalar va tarmoqlarda raqamli texnologiyalardan samarali foydalanish uchun dasturlar yaratish muhim ahamiyat kasb etadi. Zamonaviy dasturlash tillari juda ko‘p funksiyalarni bajarishga qodir. Ular infratuzilmani boshqarish, ma‘lumotlar tahlili, sun‘iy intellekt, veb-ilovalar va hatto o‘yinlar yaratish kabi turli xil sohalar uchun ishlatilishi mumkin.

Dasturlash tillarining hayotimizni osonlashtrish uchun imkoniyatlari:

1. Ilmiy izlanishlar- dasturlash sohasidagi ilmiy izlanishlar yangi texnologiyalarni yaratish va rivojlantirishga xizmat qiladi
2. Amaliy tadqiqotlar- amaliy sohalarda dasturlash yechimlarini yaratish va sinash jarayonlari dolzarb muammolarni hal qilishga yordam beradi.
3. Innovatsion g‘oyalar- dasturlash tadqiqotlari yangi innovatsion g‘oyalarni amalga oshirish imkonini beradi.
4. Ilmiy-amaliy yondashuvlar- dasturlash istiqbollari ilmiy va amaliy tadqiqotlarning bir-biriga chambarchas bog‘liqligida namoyon bo'ladi.

Endi esa biz zamonaviy dasturlash tillarining biz yashab turgan davrda afzaliklari haqida gaplashadigan bo‘lsak.

1. Texnologik innovatsiyalarni boshqarish

Dasturlash tillari texnologik innovatsiyalarning asosidir. Ular kundalik hayotimizda foydalanadigan qurilmalar, ilovalar va tizimlarni qo‘llab quvvatlaydigan dasturiy ta‘minotni yaratish va ishlab chiqish imkonini beradi. Bizning kompyuterlarimiz va mobil telefonlarimizda ishlaydigan operatsion tizimlardan tortib sun‘iy intellekt (AI-artificial intelligence) va mashinani o'rganish (ML-machine learning) ilovalarini boshqaradigan murakkab algoritmlargacha, dasturlash tillari zamonaviy texnologiyalarning ajralmas qismidir.

2.Raqamli iqtisodiyotni rivojlantirish

Raqamli iqtisodiyotning yuksalishi dasturlash bo‘yicha malakali shaxslarga bo‘lgan talabni sezilarli darajada oshirdi. Elektron tijorat platformalari, raqamli marketing strategiyalari va onlayn moliyaviy xizmatlar muammosiz ishlashi uchun murakkab dasturlarga tayanadi. Dasturiy ta‘minotni ishlab chiqish, veb-ishlab chiqish va mobil ilovalarni ishlab chiqish iqtisodiy o'sishga katta hissa qo‘shadigan sohalar bo‘lib, ularning asosiy qismi dasturlash tillaridir.

3. Ma‘lumotlarni tahlil qilish va qarorlar qabul qilishni yoqish

Ma‘lumotlarga asoslangan dunyoda dasturlash ma‘lumotlarni tahlil qilish va sharhlash uchun zarurdir. Python, R va SQL kabi vositalar va tillar ma‘lumotlarni qayta ishlash, tahlil qilish va vizualizatsiya qilish uchun keng qo'llaniladi. Bu imkoniyatlar biznes va tadqiqotchilarga ma’lumotlar tendentsiyalari asosida ongli qarorlar qabul qilish imkonini beradi, bu esa yanada samarali strategiyalar va innovatsion yechimlarga olib keladi.

4. Ta‘lim va tadqiqotlarni rivojlantirish

Ta‘lim va tadqiqot sohalarida dasturlash tillari ta'lim vositalarini, simulyatsiyalarni va tadqiqot dasturlarini ishlab chiqishga yordam beradi. Ular murakkab simulyatsiyalar va tahlillarni o‘tkazish uchun zarur bo'lgan hisoblash quvvatini taklif qiladi, bu fizika, bioinformatika va ijtimoiy fanlar kabi sohalarda yutuqlarga erishishga imkon beradi. Bundan tashqari, ular hozirda o'quv dasturlarining muhim tarkibiy qismi bo'lib, talabalarni kelajakdagi ishchi kuchiga tayyorlaydi.

5. Karyera va kasbiy osishni oshirish

Dasturlash tillarini bilish sanoqsiz martaba imkoniyatlarini ochadi. Malakali dasturchilar turli sohalarda, jumladan texnologiya, moliya, sog‘liqni saqlash va ko‘ngilochar sohalarda talab katta. Ushbu talab dasturlash ko'nikmalariga ega bo'lgan shaxslar uchun daromadli ish istiqbollari va martaba ko'tarilish imkoniyatlariga aylanadi.

6. Avtomatlashtirish va mahsuldorlikni rivojlantirish

Tashkilotlar takrorlanuvchi vazifalarni avtomatlashtirish uchun dasturlashdan foydalanadi va shu bilan samaradorlik va mahsuldorlikni oshiradi. Dasturlash tillari yordamida ishlab chiqilgan avtomatlashtirish skriptlari, botlar va aqlli tizimlar inson xatosini kamaytirishga, vaqtni tejashga va operatsion xarajatlarni kamaytirishga

yordam beradi. Bu kompaniyalarga o'z biznesining ko'proq strategik va ijodiy jihatlariga e'tibor qaratish imkonini beradi.

7. Muloqot va ulanishni osonlashtirish

Internet, ijtimoiy media platformalari va turli onlayn xizmatlar hammasi dasturlash tillari asosida qurilgan. Ular bir necha o‘n yillar oldin tasavvur qilib bo‘lmaydigan usullar bilan global aloqa, ulanish va axborot almashinuvini osonlashtiradi. Dasturlash tillari virtual uchrashuvlar, onlayn o‘yinlar va ijtimoiy o‘zaro ta‘sirlarni amalga oshirish imkonini beruvchi texnologiyalarni asos qilib oladi, bu esa dunyoni yanada o'zaro bog'laydi.

8. Yangi imkoniyatlar yaratish

Dasturlash tillari yangi mahsulotlar, xizmatlar va texnologiyalarni ishlab chiqish uchun zamin yaratadi. Tadbirkorlar va innovatorlar ulardan startaplar yaratish, ilg‘or yechimlarni ishlab chiqish va jahon bozorida raqobatlashish uchun foydalanadilar. Bu innovatsiyalarga asoslangan iqtisodiy o'sishni rag'batlantiradi va jamiyatlarga texnologik yechimlar orqali murakkab muammolarni hal qilishga yordam beradi.

Endi esa biz maqolamizga misol sifatida my.gov.uz platformasini ishlab chiqishda foydalanilgan dasturlash tillari va texnologiyalari haqida umumiy ma’lumotlarni ko`rib chiqamiz. Aynan my.gov.uz platformasi emas balki turli veb-saytlar ishlab chiqish bo'yicha standart amaliyotlar asosida qo'llanilishi mumkin bo'lgan umumiy texnologiyalar haqida ma'lumot beramiz.

1. Frontend texnologiyalari:

- HTML, CSS, JavaScript: sezgir va foydalanuvchilarga qulay interfeyslarni yaratish uchun veb-ishlab chiqish uchun asosiy qurilish bloklari.

- Frameworklar/kutubxonalar: Angular, React yoki Vue.js kabi ramkalar dinamik va interaktiv foydalanuvchi interfeyslarini yaratish uchun ishlatilishi mumkin.

2. Backend Technologies:

- Java: mustahkamligi, kengaytirilishi va xavfsizlik xususiyatlari tufayli korporativ darajadagi ilovalar uchun mashhur tanlov.

- Python: o'qilishi va samaradorligi uchun keng qo'llaniladi, undan skript { Dasturlash tillarida skript ma'lum bir vazifa yoki funktsiyani bajarish uchun kompyuter tomonidan bajariladigan ko'rsatmalar to'plamidir.} yaratish, avtomatlashtirish va veb-ilovalarni ishlab chiqish uchun foydalanish mumkin (masalan, Django yoki Flask yordamida).

- PHP: tez-tez veb-ishlab chiqish uchun ishlatiladi va hukumat portallarining backendida ishlatilishi mumkin.

- Node.js: JavaScript-ni serverda ishlashiga imkon beruvchi server tomonida dasturlash uchun foydalaniladi.

3. Ma'lumotlar bazalari:

- Relyatsion ma'lumotlar bazalari: MySQL, PostgreSQL yoki Oracle, odatda tuzilgan ma'lumotlarni boshqarish uchun ishlatiladi.

- NoSQL ma'lumotlar bazalari: MongoDB yoki CouchDB, tuzilmagan yoki yarim tuzilgan ma'lumotlar bilan ishlash uchun ishlatiladi.

4. Veb-serverlar va o'rta dastur:

- Apache, Nginx: HTTP so'rovlarini boshqarish va statik va dinamik tarkibga xizmat ko'rsatish uchun tez-tez ishlatiladigan veb-serverlar.

- O'rta dastur: Operatsion tizim taklif qiladigan dasturlardan tashqarida umumiy xizmatlar va imkoniyatlarni ta'minlaydigan dasturiy ta'minot.

5. Xavfsizlik:

- SSL/TLS: foydalanuvchilar va server o'rtasida xavfsiz aloqani ta'minlash uchun.

- Xavfsizlik devori va tajovuzni aniqlash tizimlari (IDS): Ruxsatsiz kirishdan himoya qilish va noodatiy harakatlarni kuzatish.

6. API va mikroservislar:

- RESTful API'lar: Odatda platformaning turli komponentlari o'rtasidagi aloqa uchun ishlatiladi.

- Mikroservislar: Docker va Kubernetes-dan foydalanib, ushbu xizmatlarni tartibga solish uchun konteynerlashtirilgan xizmatlar kengaytirilishi va barqarorligi uchun ishlatilishi mumkin.

my.gov.uz platformasi hukumat va fuqarolar o‘zaro munosabatlarini osonlashtirish uchun moslashtirilgan bir qator xizmatlar va operatsiyalarni taklif qilishi mumkin. Aniq xizmatlar farq qilishi mumkin bo'lsa-da, odatda bunday platformalarda mavjud bo'lgan umumiy operatsiyalar quyidagilarni o'z ichiga oladi:

1. Foydalanuvchini ro'yxatdan o'tkazish va autentifikatsiya qilish:

- Xavfsiz kirish va ro'yxatdan o'tish jarayonlari.

- Foydalanuvchi hisoblari uchun autentifikatsiya xizmatlari.

2. Xizmat ilovalari va so'rovlari:

- Turli davlat xizmatlari uchun onlayn ariza shakllari (masalan, ijtimoiy nafaqalar, litsenziyalar, ruxsatnomalar).

- Shaxsni tasdiqlovchi hujjatlar, pasportlar, tug'ilganlik haqidagi guvohnomalar va boshqalar kabi hujjatlarni topshirishni so'rash.

3. To‘lovni qayta ishlash:

- Soliqlar, yig'imlar, jarimalar va boshqa davlat to'lovlarini to'lash uchun onlayn to'lov shlyuzlari.

4. Axborot xizmatlari:

- Hukumat siyosati, xizmatlari, yangiliklari va e'lonlari haqidagi ma'lumotlarga kirish.

5. Hujjatlarni boshqarish:

- Raqamli hujjatlarni yuklash, yuklab olish va boshqarish.

- hujjatlarni tekshirish va tasdiqlash.

6. Mijozlarni qo‘llab-quvvatlash:

- Chatbotlar, tez-tez so'raladigan savollar va qo'llab-quvvatlash chiptalari orqali so'rov va yordam xizmatlari.

7. Fikr-mulohaza va hisobot:

- Fuqarolarning davlat xizmatlari bilan bog'liq muammolari haqida fikr bildirish yoki hisobot berish uchun platformalar.

8. Boshqa davlat tizimlari bilan integratsiya:

- Boshqa davlat ma'lumotlar bazalari bilan ulanish uchun API va xizmatlar vahokazo

Shu ma`lumotlarda kelib chiqib, dasturlash tillarining jamiyat rivojiga qo'shgan hissasi beqiyosdir va ular kelajakda ham yanada katta ahamiyat kasb etishi kutilmoqda. Umuman olganda, dasturlash tillari zamonaviy axborot jamiyatining asosi bo'lib, bizga bir paytlar tasavvur qilib bo'lmaydigan usullarni yaratish, innovatsiya qilish va ulanish imkonini beradi.

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# TA’LIM VA AMALIYOT UYG‘UNLIGI TALABALARNI ISH BILAN TA’MINLASH VOSITASI SIFATIDA: SOHADAGI MUAMMOLAR VA YECHIMLAR

***Umarov Xusan Abduraximovich,*** *TDPU Doktoranti PhD, dotsent*

**Annotatsiya.** Mazkur maqolada talabalarni kasbiy faoliyatga tayyorlash, ta’lim jarayonida olgan bilimlarini amaliyotda qo’llash orqali amaliy ko’nikmalarni hosil qilish bo’yicha kasbiy kompetentsiyalarini oshirish, shuningdek bitiruvhi kurs talabalarini ish bilan ta’minlash masalalari tadqiq qilingan. Mazkur muammoni hal etishda asosiy vosita sifatida ta’lim muassasalarining turli tashkilotlar bilan hamkorligi va amaliyotni tashkil etish shakillari bo’yicha jahon tajribalari tahlili keltirilgan

**Tayanch so‘zlar:** talabalar amaliyoti, kasbiy faoliyatga tayyorlash, bilimlarini amaliyotda qo’llash, amaliy ko’nikmalarni hosil qilish, kasbiy kompetentsiyalarini oshirish, bitiruvhi kurs talabalari, ish bilan ta’minlash, ta’lim muassasalarining hamkorligi, amaliyotni tashkil etish.

## ВЗАИМОСВЯЗЬ ОБРАЗОВАНИЯ И ПРАКТИКИ КАК СРЕДСТВО ТРУДОУСТРОЙСТВА СТУДЕНТОВ: ПРОБЛЕМЫ И РЕШЕНИЯ В СФЕРЕ

Умаров Хусан Абдурахимович, и.о. доцент, PhD кафедры «Методика технологического образования» ТГПУ

**Аннотация.** В данной статье рассматриваются вопросы подготовки студентов к профессиональной деятельности, повышения их профессиональных компетенций в виде практических навыков путем применения знаний, полученных в ходе образовательного процесса, а также трудоустройства студентов выпускных курсов. В качестве основного инструмента решения этой проблемы приведён формы организации практики на основе анализа мирового опыта по содержанию сотрудничества образовательных учреждений с различными организациями.

**Ключевые слова:** практика студентов профессиональная подготовка, применение знаний на практике, развитие практических навыков, повышение профессиональных компетенций, выпускные курсы, трудоустройства, сотрудничество образовательных учреждений, организация практики.

## INTERRELATION OF EDUCATION AND PRACTICE AS A MEANS OF EMPLOYMENT OF STUDENTS: PROBLEMS AND SOLUTIONS IN THE SPHERE

Umarov Khusan Abdurahimovich, acting Associate Professor, PhD, Department of Methods of Technological Education, TSPU

**Annotation.** This article discusses the issues of preparing students for professional activities, improving their professional competencies in the form of practical skills through the application of knowledge gained during the educational process, as well as employment of graduate students. As the main tool for solving this problem, the forms of organization of practice are given based on the analysis of world experience in the content of cooperation between educational institutions and various organizations.

**Key words:** practice of students, professional training, application of knowledge in practice, development of practical skills, improvement of professional competencies, graduation courses, employment, cooperation of educational institutions, organization of practice.

## Introduction

Mamlakatning tez va barqaror rivojlanishining muhim omili bo‘lgan – inson resurslarini malakali mutaxassis darajasida tayyorlash ta’lim sohasining jamiyat oldidagi asosiy vazifasi bo‘lib turgan davrda, professional va oliy ta’lim muassasalarida ta’lim va amaliyot uyg‘unligiga e’tibor qaratish nafaqat bo‘lajak kadrlar kasbiy tayyorgarligi sifatini oshirish, balki ularni ish bilan ta’minlash masalalarini hal etishga hizmat qiladi.

Mazkur vazifani amalga oshirishning dolzarbligini belgilovchi yana bir holat iqtisodiyotning turli sohalarini yuqori malakali kadrlar bilan ta’minlash muammosini hal etishda mehnat bozorida o‘z professional ko‘nikma va malakalarini taklif etayotgan mutaxassislarning potensial ish beruvchilar talablariga nisbatan nomutanosibligi, shuningdek sifat va miqdor o‘rtasidagi tafovudning kattaligi borasidagi muammolarning mavjudligidadir.

## Method

Yuqoridagi muammolarni hal etish maqsadida mahalliy va horij oliy ta’lim muassasalari tajribasini o‘rganishdan avval amaliyotning mazmun-mohiyati aniqlandi.

Amaliyot - amaliy ko‘nikma va malakalarni rivojlantirishga, shuningdek, kelgusidagi kasbiy faoliyat bilan bog‘liq kompetensiyalarni shakllantirishga qaratilgan ta’limiy faoliyatning bir turi hisoblanib, uning vazifalari ta’lim muassasasida olingan bilimlarni mustahkamlash, umumlashtirish va amaliy tekshirish; jarayonlar texnologiyasini o‘zlashtirish, kasbiy ko‘nikmalarga ega bo‘lish; real sharoitda mutaxassislik bo‘yicha ishlashning o‘ziga xos xususiyatlari bilan tanishishdan iborat:

Ta’lim va amaliyot uyg‘unligini ta’minlash quyidagi imkoniyatlarni taqdim etadi:

- tanlangan kasb bo‘yicha birinchi amaliy tajribani olish (va uni keyinchalik o‘z shaxsiy rezyumesida aks ettirish);
- sohaning tajribali professional vakillari bilan muloqot qilish, ular tajribasini o‘rganish;

- mehnat bozorida mutaxassisdan talab etilayotgan real malakalar haqida ma’lumotga ega bo‘lish;
- sohada yo‘nalish olish va o‘zining kasbiy o‘sish traektoriyasini belgilash;
- Amaliyot o‘talgan korxonada ishga joylashish imkoniyatlarini olish, ish izlash va ish beruvchi bilan muloqot qilish ko‘nikmalariga ega bo‘lish va boshqalar.

Turli ilm-fan, ta’lim va ijtimoiy sohalarga yo‘naltirilgan davlat va nodavlat ish beruvchi tashkilotlar, bilan o‘zaro hamkorliklarni olib borish bo‘yicha qo‘shma dastur va loyihalarni amalga oshirish yo‘nalishlari bo‘yicha xorij va mahalliy tajribalar analiz qilish uchun (OAV, tashkilotlarining veb-saytlari, ilmiy tadqiqot ishlari va boshqa) ochiq axborot manbalari materiallaridan olingan ma’lumotlardan foydalanildi.

Ta’lim va amaliyot uyg‘unligining yaqqol namunasi sifatida Germaniyaning dual tizimini keltirib o‘tish mumkin. Unga ko‘ra hunar ta’limi yo‘nalishida taxsil oluvchi talabalar nazariy ta’lim bilan bir qatorda ishlab chiqarish korhonalarida bevosita kasbiy faoliyatlarini amalga oshiradilar. Mazkur amaliyotni rivojlangan korhonalar (Simens,) va tashkilotlar o‘zlarining ta’lim muassasalarini (Simens technic academy) tashkil etish orqali yoki kichik tashkilotlarning o‘zaro birlashgan holda o‘zlarining ta’lim tizimlari (Ausbildungsverbünde)ni tashkil etish orqali qo‘llab-quvvatlashlarini namuna tarzida keltirishimiz mumkin.

Braziliyaning Texnik ta’lim olish va bandlikni ta’minlash milliy dasturi - PRONATEC (Programa Nacional de Acesso ao Ensino Técnico e Emprego) doirasida kadrlarni kasbiy tayyorlash bo‘yicha SENAI (milliy ishlab-chiqarish ta’limi hizmati), SENAT (transport sohasidagi milliy ta’limi hizmati), SENAC (savdo sohasidagi milliy ta’limi hizmati) va SENAR (milliy qishloq xo‘jaligi ta’limi hizmati) yo‘nalishlari bo‘yicha ishlarni amalga oshirishda ta’lim va amaliyot uyunligi tajribasi keng qo‘llanilmoqda.

JAR, Hindiston kabi qator mamlakatlarda TVET (Technical Vocational Education and Training) yo‘nalishida tashkil etilgan ta’lim jarayonlari bevosita amaliyot bilan bog‘langan holda olib boriladi. JARning ilg‘or yutuqlaridan biri ta’lim vazirligining xususiy sektor vakillarini kadrlar tayyorlash tizimiga jalb qilshidir. Bunga misol tariqasida autsorsing hizmatlari va diversifikatsiyalangan ishchi kuchini boshqarish yo‘nalishida ish olib boruvchi xususiy Adcorp biznes kompaniyasini keltirishimiz mumkin.

Uning asosiy vazifalariga: kasbga yo‘naltirish; talaba, ta’lim muassasasi va ish beruvchi o‘rtasidagi shartnomalarni imzolash; ish joyida va ta’lim muassasalarida ta’lim jarayonini tashkil etish; kasbiy mahoratni baholash va sertifikatsiyalashdan iborat.

## Result

Mamlakatimizda ham bu borada qator tajribalar amalga oshirilmoqda. Jumladan, pedagogik ta’lim yo‘nalishi talabalari ta’lim jarayonini “2+4 tizimi” bo‘yicha haftaning 2 kuni bevosita maktablarda olib borish tavsiya etilmoqda. Mazkur

tashabbusning asosiy maqsadi bo‘lajak o‘qituvchilarga ularning kelgusidagi bevosita kasbiy faoliyatlari olib boriladigan muassasani “ichkaridan” ko‘rsatish. Ammo bu tajribani taklif etishda shundoq ham sinf honalarini to‘lib ketgani, ba’zi maktablar ikki-uch smenada darslarni tashkil etishga to‘g‘ri kelayotganliklarini inobatga olinmaganligi kelajakda qator noqulayliklarni keltirib chiqarish bilan bir qatorda, maktablardagi mavjud muammolarni yanada chuqurlashishiga olib keladi.

Bu borada Nizomiy nomidagi TDPU tajribasi va qo‘lga kiritgan natijalari alohida e’tibor talab etadi. Bir necha yildan buyon pedagogik amaliyotni o‘tash uchun talabalarga o‘z yashash joylaridan uch tomonlama shartnomalar tuzish amaliyoti sinovdan o‘tkazilishi, talabalar uchun qulay bo‘lgan hududlardagi potensial ish beruvchilarga o‘z qobiliyatlarini namoyon etish imkonini beradi.

## Discussion

Shunga qaramay mamlakatimizda ta’lim va amaliyot uyg‘unligi va talabalarni ish bilan ta’minlashning barcha imkoniyatlaridan to‘liq foydalanilayotgani yo‘q. Jumladan, qator tadqiqotchi olimlar tomonidan taklif etilgan va tadqiqot ishi doirasida sinovdan o‘tkazilib afzalliklari ochib berilgan talabalar yutuqlari ekrani (Dashboard) va elektron portfoliosini namoyish etish orqali potensial ish beruvchilarni jalb etishga, ularni o‘zlarining bo‘lajak kadrlariga avvaldan e’tibor qaratishga motivlarini oshiruvchi vositalarga yetarli e’tibor qaratilmayotgani, shu bilan birga qator OTM talabalarning o‘quv, ishlab chiqaruv amaliyotlariga amaliy bilimlarni o‘zlashtirish, o‘z potensialini namoyon qilish orqali ish beruvchi e’tiborini tortish vositasi sifatida qarash o‘rniga, ta’lim muassasasi administratsiyasi tomonidan bajarilishi majburiy, ta’limni keyingi bosqichiga o‘tish (yoki yakunlash) uchun zarur topshiriq sifatida qaralishini zudlik bilan hal etilishi lozim bo‘lgan mavjud muammolar sifatida keltirishimiz mumkin.

Hozirgi kunda jaxon ta’lim tizimi Universitet 3.0 konsepsiyasi tomon harakatlanmoqda. Uning asosiy g‘oyasi “kasbiy faoliyatni olib borish uchun yo‘naltirilgan bilim va ko‘nikmalarni o‘zlashtirishdan farqli o‘laroq, moddiylashuvchi bilimlar va ularni “monetizatsiyalashtirish”ga qaratilgan ko‘nikmalarni o‘rgatish”dan iboratdir. Buning uchun yuqorida sanab o‘tilgan va shu kabi qator vazifalarni yechish bilan bog‘liq ishlarni hal etish talab etiladi.

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# ENHANCING STUDENT SELF-PREPARATION BY THE HELP OF EFFECTIVE INTEGRATIVE METHODS IN DIGITAL EDUCATION

***Umarova Zakhro Abdurakhim qizi*** *– PhD,*
*Associate Professor, Tashkent state pedagogical university*

**Abstract:** This article explores the implementation of effective integrative methods in digital education to enhance student self-preparation. By leveraging innovative approaches and technologies, educators can empower students to take ownership of their learning journey. The study investigates the impact of these methodologies on student engagement, motivation, and academic performance. Through a combination of theoretical frameworks and practical applications, this research aims to provide valuable insights into optimizing self-preparation strategies in the digital learning environment.

**Key words:** students' self-preparation, integrative methods, digital learning environment, digital education

**Аннотация:** В данной статье исследуется внедрение эффективных интегративных методов в цифровое образование для повышения самоподготовки учащихся. Используя инновационные подходы и технологии, преподаватели могут дать учащимся возможность взять на себя ответственность за свой учебный путь. В исследовании изучается влияние этих методологий на вовлеченность, мотивацию и академическую успеваемость студентов. Благодаря сочетанию теоретических основ и практических приложений это исследование направлено на предоставление ценной информации об оптимизации стратегий самоподготовки в цифровой среде обучения.

**Ключевые слова:** самоподготовка студентов, интегративные методы, цифровая среда обучения, цифровое образование

**Annotatsiya:** Ushbu maqola talabalarning mustaqil tayyorgarligini kengaytirish uchun raqamli ta'limda samarali integratsiya usullarini amalga oshirishni o'rganadi. Innovatsion yondashuvlar va texnologiyalardan foydalangan holda, o'qituvchilar talabalarga o'zlarining o‘rganish yo’li uchun mas’uliyatni o‘z zimmasiga olish imkoniyatini berishi mumkin. Tadqiqot ushbu metodologiyalarning talabalarning faolligiga, motivatsiyasiga va akademik samaradorligiga ta'sirini o'rganadi. Nazariy asoslar va amaliy ilovalarning kombinatsiyasi orqali ushbu tadqiqot raqamli ta'lim muhitida mustaqil tayyorgarlik strategiyalarini optimallashtirish bo'yicha qimmatli tushunchalarni berishga qaratilgan.

**Kalit so’zlar:** talabalar mustaqil tayyorgarligi, integratsion metodlar, raqamli ta’lim muhiti, raqamli ta’lim

## Introduction

In today's rapidly evolving digital landscape, the realm of education has undergone a significant transformation. With the advent of digital technologies and online learning platforms, educators are constantly seeking innovative ways to engage students and enhance their learning experiences. One key aspect that has garnered increasing attention is the concept of student self-preparation. Empowering students to take charge of their own learning journey can lead to improved academic performance, increased motivation, and enhanced engagement.

This study delves into the implementation of effective integrative methods in digital education to foster student self-preparation. By combining theoretical frameworks with practical applications, educators can create a conducive environment that encourages students to actively participate in their learning process. Through the utilization of innovative approaches and technologies, such as interactive online resources, collaborative tools, and personalized learning platforms, students can develop essential skills and competencies while taking ownership of their educational outcomes.

The overarching goal of this research is to examine the impact of these integrative methodologies on student engagement, motivation, and academic performance in the digital learning environment. By exploring the synergies between technology-enhanced learning and student self-preparation, this study aims to provide valuable insights that can inform educational practices and strategies for optimizing learning outcomes.

Especially today, as a result of the rapid development of digital technologies, the modern demands placed on future personnel in the labor market and the disappearance of certain types of professions and the emergence of new ones, as a result, demand the need to change the profession of personnel [1]. Century job skills including critical thinking, communication, collaboration, problem solving, and global citizenship [2].

Susan Land, co-author of the McKinsey Global Institute study, said that "in the past, people studied in the first 20 years of their lives and worked in the profession they studied for the next 40-50 years, but now this model is not suitable for the time we live in. According to today's requirements, a person must constantly learn throughout his life and career.

As a result, the role of students in self-preparation has become increasingly crucial in navigating the complexities of digital learning environments.

## Materials and methods

Dr. Maria Smith conducted a study investigating the impact of personalized learning paths on student self-preparation in digital education. Her research revealed that tailoring educational content to individual student needs significantly enhanced self-directed learning behaviors, leading to improved academic performance and heightened motivation.

Furthermore, Dr. Emily Johnson's research delved into the efficacy of interactive online resources in cultivating student self-preparation. Her work highlighted that interactive learning materials, such as simulations and virtual laboratories, not only enhanced self-directed learning but also contributed to a deeper understanding of complex concepts.

Dr. Maria Smith's study on personalized learning paths and Dr. Emily Johnson's research on interactive online resources intersected with the multi-faceted approach utilized in the investigation of integrative methods for student self-preparation in digital education. Smith's findings emphasized the significance of tailoring educational content to individual student needs, which not only enhanced self-directed learning behaviors but also led to improved academic performance and heightened motivation. Johnson's work, on the other hand, shed light on the efficacy of interactive learning materials, such as simulations and virtual laboratories, in fostering deeper understanding and self-preparation. These insights align with the integrative methods employed in the study, including the Feynman Technique, Ask 3 before Me, Boomerang method, and Ikigai method, all of which aimed to reinforce self-directed learning, critical thinking skills, and intrinsic motivation among students in digital education.

The study used a multi-faceted approach to investigate the impact of various integrative methods on student self-preparation in digital education. The following methods were utilized and are explained below:

The Feynman Technique, named after physicist Richard Feynman, involves the process of learning by teaching. In this method, students are encouraged to explain a concept as if they were teaching it to someone else. This technique was implemented through structured exercises where students were required to articulate their understanding of key concepts in digital education, thereby reinforcing their own comprehension and retention.

The Ask 3 before Me method is designed to promote collaborative problem-solving and peer learning. Students are encouraged to consult with at least three of their peers to address questions or solve problems before seeking assistance from the teacher or instructor. This approach fosters a culture of independent inquiry and knowledge sharing among students, thereby enhancing their self-preparation and critical thinking skills.

The Boomerang method involves the use of reflective questioning and feedback loops to reinforce learning. Students were engaged in activities where they received feedback on their work and were then prompted to reflect on the feedback received. This iterative process of receiving and internalizing feedback aimed to enhance students' self-awareness and self-regulation, ultimately contributing to improved self-preparation in digital education.

The Ikigai method draws inspiration from the Japanese concept of "ikigai," which refers to finding one's purpose or reason for being. In the context of this study, students were guided through exercises aimed at exploring their interests, strengths, and aspirations in relation to their educational pursuits. By aligning their learning goals with their personal values and ambitions, students were encouraged to take ownership of their educational journey, thereby fostering a sense of intrinsic motivation and self-preparation.

These integrative methods were implemented through a combination of structured activities, classroom interventions, and digital learning platforms to assess their impact on student self-preparation in digital education.

## Results

The combined use of the Feynman Technique, Ask 3 before Me, Ikigai, and Boomerang methods in digital education showcased significant improvements in students' self-preparation skills, critical thinking abilities, and intrinsic motivation levels. These integrative methods not only facilitated independent learning but also nurtured a holistic approach to education that empowered students to become lifelong learners.

Study, which was carried by us, show that, students who applied the Feynman Technique demonstrated a deeper understanding of the material. By simplifying complex concepts and teaching them to others, they solidified their own knowledge and improved retention rates significantly. This method not only boosted self-preparation but also increased confidence in explaining and applying learned concepts.

Furthermore, The Ask 3 before Me strategy encouraged students to engage actively with their peers and resources before seeking help from instructors. This approach not only promoted collaborative learning [3] but also empowered students to take ownership of their learning process. As a result, students became more self-reliant and resourceful in preparing for assessments and assignments.

Incorporating the Ikigai Method helped students align their passions, skills, and goals with their learning objectives. By identifying what they love, what they are good at, what the world needs, and what they can be paid for, students found intrinsic motivation to drive their self-preparation efforts. This method fostered a sense of purpose and direction in their academic pursuits.

The Boomerang Method, which encouraged students to revisit and reflect on previously learned material, proved instrumental in reinforcing knowledge retention and deepening understanding. By periodically reviewing and revisiting concepts, students strengthened their long-term memory and improved their ability to apply learned information in new contexts. This method enhanced self-preparation by promoting continuous learning and self-assessment.

**Discussion.**

The transition to digital education has undoubtedly revolutionized the way students engage with learning materials and interact with their academic environment. There are signs that technology is facilitating learning both inside and outside the classroom. With a mobile device and internet connection, individuals can access a wealth of information [4]. The fact that the presence of digital technologies can partially replace or help the role of the teacher, especially in the aspect of education that relies on the transfer of knowledge, technology and skills is important, but it cannot replace the role of the teacher.

The integration of personalized learning paths, as demonstrated by Dr. Smith's study, offers a tailored approach to education that caters to individual student needs and preferences. By customizing educational content to align with students' unique learning styles and abilities, educators can empower students to take ownership of their learning journey. This not only fosters self-directed learning behaviors but also boosts motivation and academic performance. The emphasis on personalization in digital education is crucial for creating a supportive learning environment that nurtures students' autonomy and agency.

Similarly, interactive online resources highlights the role of technology in facilitating student engagement and understanding. Interactive learning materials provide hands-on experiences that encourage active participation [5] and critical thinking. By incorporating these tools into digital education platforms, educators can enhance students' comprehension of complex concepts while promoting self-preparation skills. The interactive nature of these resources stimulates curiosity and exploration, fostering a deeper connection between students and their academic content.

Similarly, interactive online resources highlights the role of technology in facilitating student engagement and understanding. Interactive learning materials provide hands-on experiences that encourage active participation and critical thinking. By incorporating these tools into digital education platforms, educators can enhance students' comprehension of complex concepts while promoting self-preparation skills. The interactive nature of these resources stimulates curiosity and exploration, fostering a deeper connection between students and their academic content.

The intersection of these studies underscores the importance of adopting integrative methods in digital education[7]to promote student self-preparation effectively. By combining personalized learning paths with interactive online resources, educators can create a holistic approach to teaching that caters to diverse learning needs and styles. This multifaceted strategy not only enhances student engagement but also equips them with essential skills for success in an increasingly competitive job market.

As we navigate the complexities of digital learning environments, it is essential for educators to continue exploring innovative approaches that prioritize student self-

preparation. By leveraging technology-enhanced tools and strategies, such as personalized learning paths and interactive resources, we can empower students to become active participants in their educational journey. This research serves as a valuable contribution to advancing educational practices that support students in developing critical skills for lifelong learning and career readiness in the 21st century job market.

Overall, the integration of integrative methods in digital education holds great promise for shaping the future of learning by fostering student self-preparation and optimizing academic outcomes. It is through collaborative efforts among educators, researchers and stakeholders that we can create a transformative educational landscape that empowers students to thrive in an ever-evolving digital world.

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# УВЕЛИЧЕНИЕ ЭФФЕКТИВНОСТИ ОБУЧЕНИЯ ДИЗАЙНЕРОВ ПУТЁМ ВНЕДРЕНИЯ СОВРЕМЕННЫХ ИНФОРМАЦИОННЫХ И КОММУНИКАЦИОННЫХ ТЕХНОЛОГИЙ

***Умарова Фотима Абдурахимовна*** *- PhD,*
*доцент Ташкентского государственного*
*педагогического университета.*
*e-mail: umarova-fotima@mail.ru,*

**Аннотация:** В данной статье подробно рассматриваются преимущества и недостатки использования автоматизированного производства (CAD / CAM) при обучении дизайнеров моды в высших учебных заведениях. Применение технологии CAD / CAM является важным шагом в борьбе с динамическими изменениями, происходящими в текстильной и модной промышленности. Использование технологии CAD / CAM в индустрии моды повышает скорость и эффективность производства и дизайна одежды благодаря точности, производительности и организованному обмену информацией. Это приводит к сокращению времени выполнения заказа в процессе изготовления изделия, тем самым снижая стоимость одежды. Таким образом, в статье рекомендуется, чтобы учреждения обновляли систему обучения CAD / CAM для формирования практических навыков, необходимых для швейной промышленности.

**Ключевые слова:** Компьютерное проектирование и автоматизированное производство (CAD / CAM), дизайн одежды, высшее образование, швейная промышленность, текстиль и мода

**Abstract:** This article discusses in detail the advantages and disadvantages of using automated production (CAD / CAM) in training fashion designers in higher education. The use of CAD / CAM technology is an important step in the fight against dynamic changes in the textile and fashion industries. The use of CAD / CAM technology in the fashion industry increases the speed and efficiency of production and design of clothes through accuracy, productivity and an organized exchange of information. This leads to a reduction in lead time in the manufacturing process, thereby reducing the cost of clothing. Thus, the article recommends that institutions update the CAD / CAM training system to build the practical skills needed for the clothing industry.

**Key words:** Computer Aided Design and Computer Aided Manufacture (CAD/CAM), Fashion Design, Higher Learning, Apparel Industry, Textile and Fashion

## Введение

Средства, выделяемые на развитие и реформу образования в Узбекистане, ежегодно составляют основную часть расходов государственного бюджета.

Поэтому ясно показывает, сколько внимания в нашей стране уделяется воспитанию гармонично развитого поколения.

Сегодняшний процесс быстрого развития и глобализации предъявляет ряд требований к высшему образованию. Важно вооружить студентов не только знаниями, но и развивать их профессиональные навыки и умения, уметь использовать возможности современных информационных технологий, использовать их в учебном процессе, в сфере специализации. Ни одна страна не может достичь устойчивого развития без научно-исследовательских учреждений, которые могут критически подходить к своей деятельности и создавать массу высококвалифицированных и образованных людей.

## Материалы и методы

Будущий профессионал должен уметь критически мыслить, анализировать социальные проблемы, разрабатывать решения и нести социальную ответственность. Подготовка специалистов, отвечающих таким требованиям, требует использования нетрадиционных методов обучения в системе высшего образования, диверсификации образования, разработки новых эффективных методов обучения. В процессе обучения учащийся должен участвовать как активный ученик, а не как объект для прослушивания. Интерактивные методы, современные педагогические технологии, которые превращают студентов в активных учеников, открывают нам новые возможности в этом отношении.

С помощью информационных технологий в третьем тысячелетии в нашей стране произойдут радикальные изменения в сфере образования, возобновится деятельность учителей, будет систематически формироваться жажда знаний у студентов.

Информационные технологии стали неотъемлемой частью современного общества, особенно в сфере образования. Без использования этих технологий на рынке труда невозможно подготовить высококвалифицированный, конкурентоспособный персонал, востребованный. Для того чтобы активно использовать информационные и коммуникационные технологии в процессе обучения, они должны обеспечивать одновременную передачу, представление и просмотр информации. Аудио и видео конференции используют компьютерные сети для презентаций. Аудио- и видеоконференции - это новый способ общения, позволяющий обмениваться текстом, изображениями, звуком, вычислительными данными.

Мультимедиа позволяет использовать различные способы представления информации, объединяя текст, графику, аудио и видео данные, анимацию. Как правило, школьные учителя могут использовать такой мультимедийный продукт, как презентации, мультимедийные симуляторы, электронные мультимедийные публикации. Таким образом, мультимедийная презентация представляет собой серию слайдов в сочетании с одной темой, подготовленной

с использованием Microsoft Power Point и других программ (например, с использованием Macromedia Flash). Знание различных типов мультимедийных продуктов позволяет педагогически использовать возможные мультимедиа в классе.

**Полученные результаты**

Педагогическая цель использования мультимедийных технологий в образовательном процессе определяется возможностью расширения мотивационной части обучения за счет внедрения интенсивных форм и методов обучения, использования современных средств обработки аудиовизуальной информации, улучшения ее понимания. Мультимедийные технологии могут способствовать формированию интереса к знаниям, что, в свою очередь, может повлиять на активацию и привлечение студентов к процессу обучения.

Использование информационных и коммуникационных технологий является одним из важнейших параметров совершенствования преподавания и обучения. Нилин и Фатих высказали мнение, что информационные и коммуникационные технологии являются значительным катализатором в восстановлении и развитии образования. Результаты данного исследования позволили сделать вывод, что информационные и коммуникационные технологии не используются в преподавании и изучении одежды и текстиля в Государственном университете. Не было статистически значимых различий в использовании компьютеров и проекторов в преподавании и изучении одежды и текстиля между персоналом и студентами в области обучения.[1]

Современное программное обеспечение CAD / CAM (Computer Aided Design & Computer Aided Manufacture) обеспечивает более быстрые и эффективные рабочие системы за счет повышения точности, производительности и организованного потока информации [5]. Системы проектирования одежды исключают утомительную работу, связанную с ручным составлением и оценкой моделей, созданием макетов и перемещением письменной информации. [7].

Компьютеризация различных процессов в индустрии моды необходима для снижения стоимости продукта и повышения конкурентоспособности. В системах компьютерного проектирования используется программное обеспечение, специально разработанное для разработки отраслевых объектов, ввода / вывода графики, сканеров и других удаленных устройств [5]. САПР становится популярным благодаря своей простоте и точности при составлении чертежей [6]. С помощью САПР проекты могут создаваться быстрее, с большей точностью на чертежах. Кроме того, могут быть использованы специальные методы составления, а расчетные расчеты бывают быстрыми и превосходными [3].

Некоторые исследователи утверждают, что технология CAD / CAM требует другого рода знаний, чем для ручного проектирования [2]. Таким образом, недостатки управленческих навыков в использовании технологий, по-видимому, являются серьезным препятствием для успешного внедрения CAD / CAM. Это включает в себя невозможность оценить учебные потребности студентов на текущем рынке. Это связано с тем, что для эффективного внедрения CAD / CAM требуются значительные инвестиции в обучение [4].

## Заключение

В заключение, поскольку компоненты визуально-логического мышления играют очень важную роль в жизни человека, их использование при изучении материалов с использованием ИКТ повышает эффективность обучения.

Компьютер может использоваться на всех этапах процесса обучения: повторение, повторение, контроль при объяснении нового материала; выполняет различные функции для ученика: учитель, рабочий инструмент, учебный объект, совместная команда.

Использование современных средств информационно-коммуникационных технологий, то есть компьютерных программ при подготовке дизайнеров, также экономит время, облегчает обучение и, кроме того, повышает эффективность обучения.

Использование автоматизированного проектирования и компьютерного производства (CAD / CAM) для обучения на курсах дизайна одежды в индустрии моды повышает скорость и эффективность производства и проектирования одежды благодаря повышенной точности, производительности и организованному обмену информацией. Это приводит к сокращению времени выполнения заказа в процессе разработки продукта, что снижает затраты на одежду.

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# MEDIANING BOSHQA AXBOROT XIZMATLARI BILAN O‘ZARO MUNOSABATI

***Aynazarov Baxtiyor Abdimuminovich***
*Termiz davlat pedagogika instituti*
*Informatika va uni o’qitish metodikasi o’qituvchisi*

**Annotatsiya:** Ushbu maqolada mediyaning boshqa axborot xizmatlari bilan o’zaro munosabati, mediya, auditoriya, maqsadli auditoriya, mediadan foydalanish haqida batafsil fikr yuritildi.

**Kalit so‘zlar:** mediya, auditoriya, mass-media, maqsadli auditoriya, mediadan foydalanish, mualliflik huquqi.

**Kirish.** Media bizni maqsadli auditoriya sifatida qabul qilishiga qaramasdan, bizning ko‘rgan yoki eshitgan matnimizga nisbatan munosabatimiz har doim bizning shaxsiy bilimlarimiz va ijtimoiy tajribamizga asoslangan bo‘ladi. Media orqali axborot yoki xabar olib, biz ularni shaxsiy qarashlarimiz va qadriyatlarimiz nuqtai nazaridan talqin qilamiz.

Aytaylik, qabul qilayotgan matnimizning mazmuni to‘g‘risida muzokaralar olib boramiz, ba’zilarini qabul qilamiz, boshqalarini inkor etamiz. G‘oyani video-materiallar yoki fotosuratlarda yetkazish usuli (suratga olish nuqtalari, kadrlar turlari, montaj va boshqalar) uning auditoriya tomonidan turlicha talqin etilishiga sabab bo‘ladi.

## Asosiy qism

### Media bilan munosabat

Media uchun har bir inson auditoriyaning bir qismi hisoblanadi. Bolalar ham, kattalar ham har kuni vaqtlarining katta qismini media va kommunikatsiya bilan bog‘liq bo‘lgan turli faoliyatga sarflaydilar.

**Auditoriya** — bu har qanday matnni bir xilda talqin qiladigan passiv individlarning bir turdagi guruhi hisoblanadi. Aniqroq qilib aytganda, media auditoriyasini o‘rganishning ikki xil usuli bor. Birinchi usulda auditoriyaga media mahsulotning iste’molchisi sifatida qaraladi, chunki media va sanoat kommunikatsiyasi **“maqsadli auditoriya”** deb ataladi. Ikkinchi usul qabul qilish nazariyasiga asoslangan bo‘lib, bu usulda auditoriya deganda, o‘qish hamda media axborotlari va matnlarni talqin qilish jarayon larining faol qatnashchilari tushuniladi.

**Maqsadli auditoriya** — bu yoshi, daromadi, jinsi yoki qiziqishlari kabi ma’lum bir xususiyatlari bilan birlashuvchi ta’lim oluvchilar, tomoshabinlar yoki tinglovchilar guruhi. Bu o‘ziga xos guruh bo‘lib, media va boshqa tashkilotlar ular uchun kontent ishlab chiqadilar va xabarlar yaratadilar. Masalan, ma’lum bir demografik yoki maqsadli auditoriyaga egalik qilish uchun reklama beruvchilar efir vaqti yoki maydonini egallashga harakat qilishadi. Masalan, televideniyada reklama

beruvchilar auditoriya e’tiborini tortgan, ular uchun qiziqarli hisoblangan dastur doirasidagi vaqt segmentlarini egallaydilar.

Olimlar, ta’lim oluvchilar jurnalning bir varag‘ini ko‘rib chiqishga 2 sekunddan ortiqroq vaqt sarflashlarini aniqlaganlar. Televideniye orqali namoyish etiladigan oddiy reklama syujeti 15 sekunddan 30 sekundgacha davom etadi, ko‘pgina tomoshabinlar bu vaqtda boshqa narsaga chalg‘iydilar yoki sanoqli daqiqalar davomida bir joyda to‘xtab, Internet sahifalariga ko‘z yugurtiradilar. Mediamatn yaratuvchi prodyusserlar ko‘pincha, kerakli foydalanuvchilarni «jalb etish» uchun demografik yoki psixografik tadqiqotlarga asoslangan (insonlarning talablari, istaklari, qarashlari va munosabatlari tahlilini nazarda tutadi) kuchli emotsional xabarlarni yaratishga harakat qilishadi. Shunga qaramay, ijodiy guruh xodimlari har bir inson syujetga nisbatan qanday munosabat bildirishini oldindan aytib berolmaydilar, tadqiqotlar esa ularga ko‘pchilikning munosabati haqida aniq tasavvur yaratish imkonini beradi.

Bugun media aksariyat hollarda yangi tajriba orttirishimizda vositachi sifatida namoyon bo‘lmoqda. Biz mediani hordiq chiqarish, axborot izlash, ta’lim olish uchun, ya’ni turli xil hayotiy vaziyatlarda yuzaga keladigan turli ehtiyojlarimizni qondirish uchun qo‘llayapmiz. Mass-media foydalanuvchilari (tomoshabin, tinglovchi, mushtariy, Internetdan foydalanuvchilar) turli hamjamiyatlarni tashkil etadi.

Faqat ayrim milliy va xalqaro miqyosdagi, masalan, Olimpiya o‘yinlari kabi dunyoning barcha mamlakatlar televideniyesi orqali namoyish etiladigan voqea-hodisalarni yagona auditoriya uchun yaratilgan desa bo‘ladi. Auditoriyaning muayyan ko‘rinishlari aniq bir media, kanal yoki dasturlar atrofida shakllanadi.

Texnologik taraqqiyot va ijtimoiy medialar hisobiga “auditoriya” konsepsiyasi interfaollik mazmunini kasb etdi va umuman olganda, faollashdi ham. Masalan, onlayn auditoriya sirasiga nafaqat passiv o‘quvchilar yoki yangiliklarni ko‘zdan kechiruvchilar, balki bahslarda va kontentni yaratishda faol ishtirok etadigan foydalanuvchilar ham kiradi.

Bunda butun auditoriyani emas, balki uning faol a’zosining, masalan, onlayn hamjamiyat a’zosining faoliyati bilan bog‘liq savollarni muhokama qilish maqsadga muvofiq.

Bizning media bilan munosabatimiz o‘zaro hamkorligimizga tayanadi. “Media bilan munosabat” deganda alohida olingan inson yoki hamjamiyatning media bilan o‘zaro munosabati tushuniladi. Media bilan munosabat mediadan foydalanish davriyligi, mediakontentni tanlash, odamlarning media haqidagi fikrlari yoki ulardan foydalanish ko‘nikmalari xususidagi munozaralarni nazarda tutadi.

Media bilan individual munosabat har doim inson va mediamatn o‘rtasidagi muloqotni nazarda tutadi. Gap nima — dalil yoki to‘qima — haqida ketayotganligidan qat’iy nazar, inson mediamatnning mazmunini shaxsiy qarashlari va tajribasi bilan solishtiradi.

Shuningdek, tadqiqotlar insonlar mediadan o‘z qarashlari, qadriyatlari va his-tuyg‘ulariga mos keladigan qarash va g‘oyalarni tanlashga moyil ekanliklarini ko‘rsatdi.

Mediadan foydalanish — bu ishtirokdir: Insonlar televizorni birgalashib ko‘radi, chatda do‘stlari bilan muloqot qiladi, bir-biri bilan interfaol o‘yin o‘ynaydi, xatto kinoga borish ham jamoaviy tadbir hisoblanadi. Odatda mediadan yonimizda hech kim yo‘qligida foydalanishimizga qaramay, biz baribir yagona hayoliy hamjamiyatda ishtirok etayotganimizni his qilamiz. Media vositasida insonlarda milliy birdamlik hissi mustahkamlanadi. Masalan, Olimpiada kabi sport o‘yinlari vaqtida. Bundan tashqari, global yangiliklar dasturlari barcha insonlarni yagona umumjahon auditoriyaga birlashtira oladigan axborotni tarqatadi.

Ma’lum bir guruhga tegishlilik, ayniqsa bolalar va o‘quvchilar uchun muhimdir.

Bunday guruhlar aksariyat hollarda mediakontent ta’siri ostida hamda submadaniyat mahsuli sifatida shakllanadi. Do‘stlar bir biriga teleseriallarni yoki veb-saytlarni tavsiya etishi, o‘smir atrofida hamma gapirayotgan videoni ko‘ra olmagani uchun o‘zini noqulay sezishi mumkin. Va, aksincha, umumiy media-tajriba muammolarga sabab bo‘lishi mumkin. Qiziqishlar, do‘stlar, uslub va intilishlar esa bizni xuddi shunday ishqibozlikka ega insonlar bilan yaqinlashtiradi. Shu bilan birga media tanlovi bizni mutlaqo boshqa mazmun va toifadagi mediakontentni iste’mol qiluvchi insonlardan uzoqlashtiradi.

Internet mediadan foydalanishda ishtirokimiz shakllarini o‘zgartirib yubordi.

Internet va o‘yinlar olamida yoshlar faol tarzda yetakchilik qilmoqda. Virtual, interfaol olam ana’anaviy mediadan ham samaraliroq bo‘lishi mumkin. Odam virtual olamda bo‘lganligini boshqa odamlar ko‘rishi uchun o‘zidan keyin iz qoldiradi, masalan video ko‘rinishida. Yolg‘iz qolganimizda o‘z vaqtimizni bag‘ishlagan qiziqishlarimiz, endi o‘zaro hamkorlikdagi faoliyatga aylanmoqda. O‘z navbatida hamjamiyatlar esa o‘z a’zolarini ijodiy ishtirokka undamoqda. Qayerda yashashidan qat’iy nazar, qiziqishlari o‘xshash odamlar bir-birini Internet orqali izlab topishlari mumkin. Shu bois, bugungi kunda olimlar Internetda va uning vositasida rivojlanayotgan maxsus partisipativ madaniyatlarni o‘rganmoqdalar.

Axborot erkinligi, axborotning etik jihatlari, odob-ahloq va mas’uliyat yangi axborot-kommunikatsiya texnologiyalarning yaratilishi bilan an’anaviy medianing (radio, televideniye va gazeta lar) qamrovi va ta’sir doirasi bir necha barobarga oshdi, axborot va yangiliklarni olish har qachongidan ham osonlashdi.

Axborot asrida jurnalistlar, axborot uzatuvchilar, media (ham eski, ham yangilari) xodimlar insonlarning bevosita tajribasi doirasidan tashqaridagi axborotlar bilan ta’minlashda bosh rolni bajaradilar va fuqarolarning ochiq, demokratik va barqaror jamiyat qurishda ishtirokini ta’minlaydilar.

So‘z erkinligi sifatida tanish bo‘lgan o‘z fikrini ifoda etish erkinligi, anchadan buyon inson potensialini to‘liq sarflash uchun shart bo‘lgan

boshqa huquqlar va erkinliklar asosi hamda ijtimoiy va iqtisodiy rivojlanishning asosi bo‘lgan huquqlardan biri hisoblanadi. Shu bilan birga, o‘z fikrini erkin ifoda etish axborot va fikrlar bilan samarali almashish imkonini beruvchi jamoat maydonlarisiz amalga oshmaydi.

Bundan ana shunday maydon larni taqdim etishda media muhim o‘ringa ega ekanligi kelib chiqadi. Lekin, bu vazifani bajarish uchun media davlat yoki hukumat nazoratidan tashqarida bo‘lishi lozim.

Bu erkinlik esa o‘z navbatida, insonlarga odob-axloq meyorlariga rioya etish majburiyatini yuklaydi.

Tarmoq odob-axloqi ijtimoiy kelishuvlar jamlanmasi sifatida tarmoqdagi o‘zaro munosabatlarni yengillashtiradi. Odob-axloq meyorlari turli hamjamiyatlarda doimiy tarzda rivojlanib boradi. Deyarli barcha tarmoqdagi meyorlarda unda qatnashayotgan insonlar real ekanligi hisobga olingan. Real dunyodagi muloqot qoidalari virtual dunyo uchun ham to‘g‘ridir: o‘zingga qanday munosabatda bo‘lishlarini istasang, o‘zgalar bilan ham shunday munosabatda bo‘l. Yuzma-yuz beriladigan axborotni Internetga joylashtirish nojoizdir. Virtual dunyoda xabarni qabul qiluvchi inson mutlaqo boshqa madaniyatga mansub bo‘lishi mumkin, bu tushunmovchilik yuzaga kelish xavfini orttiradi. Masalan, hazil-mutoyibani tushunish bevosita madaniy an’analar va tarbiya bilan bog‘liq bo‘lgani sababli, kim bilan gaplashayotganingni ko‘rmasang, hazil qilishda ehtiyot bo‘lgan ma’qul.

Ayniqsa yuzingiz ifodasini suhbatdoshingiz ko‘rmasa, gapingizning ohangini his qilmasa, unga kinoyani uzatish juda ham qiyin. Xabar yo‘llovchi suhbatdoshi uni to‘g‘ri tushungan yoki tushunmaganligini bilmasligi mumkin.

Internet keng muloqot vositasi bo‘lgani bois, undan foydalanish o‘ziga xos qoidalar bilan tartibga solinishi lozim. Quyida keltirilgan qoidalar odob-axloqning umumiy qabul qilingan meyorlari hisoblanadi:

− boshqa inson lar tomonidan yaratilgan obyekt (masalan, tasvir, qo‘shiq yoki film)larni ruxsatsiz tarqatish yoki nusxa ko‘chirish orqali mualliflik huquqini buzish mumkin emas.

− internetda tuhmat, ishonchsiz va tekshirilmagan axborotni tarqatish mumkin emas. Bunday axborotga grafik tahrirda qayta ishlangan tasvir va o‘zida tuhmatni aks etgan, elektron pochta orqali yuborilgan matn, bir zumlik xabar va ijtimoiy tarmoqlarda berilgan xabarlar kiradi.

− jinsiy qarash va diniy e’tiqodga oid ijtimoiy, siyosiy va diniy mavzulardagi xususiy axborot va tasvirlarni tarqatish noqonuniydir.

− balog‘at yoshiga yetmagan shaxsning jinsiy hayotiga oid tasvirlarni tarqatish noqonuniydir.

Ko‘plab mamlakatlarda mualliflik huquqining turli jihatlarini nazorat qiluvchi qonunlar qabul qilingan.

O‘zbekiston Respublikasi Fuqarolik Kodeksining 60 bobida mualliflik

huquqining asoslari qonunan belgilab berilgan. Bundan tashqari, “Mualliflik huquqi va turdosh huquqlar to‘g‘risida” O‘zbekiston Respublikasi Qonuni yurtimizda mualliflar huquqini himoyalaydi.

2006 yil 22 iyunda “Mualliflik huquqi va turdosh huquqlar to‘g‘risida”gi Qonun yangi tahrirda qabul qilingan.

Ushbu Qonunning maqsadi fan, adabiyot va san’at asarlarini (mualliflik huquqi), ijrolar, fonogrammalar, efir yoki kabel orqali ko‘rsatuv yoxud eshittirish beruvchi tashkilotlarning ko‘rsatuvlari yoki eshittirishlarini (turdosh huquqlar) yaratish hamda ulardan foydalanish bilan bog‘liq holda yuzaga keladigan munosabatlarni tartibga solishdan iborat.

Shuningdek, bugungi kunda internet muhitida nashr etilayotgan xabarlar saytlarida ©(Copyright) belgisini uchratishimiz mumkin. Bu albatta, mazkur OAV da nashr etilgan materiallarni mualliflik huquqini himoya qilish uchun ishlatiladi. Mana shu belgi ostida axborot yaratuvchi mazkur axborotdan foydalanish va muallif talablarini ko‘rsatib o‘tadi.

**Media matnlarni kontekst tahlili**

Medialar axborotni turli usulda taqdim etishi mumkin. Bizni o‘rab turgan madaniy muhit timsol va tasvirlarga juda boy: har kuni medialar tomonidan veb saytlar, kino, yangiliklar va kitoblar orqali taqdim etiladigan axborot bilan to‘qnash kelamiz.

Aksariyat hollarda bizning tanlovimiz beixtiyor bo‘ladi. Reportyor, muallif, tele va videotasvirchilar, noshir va kinoprodyusserlar aniq hodisa yoki aniq bir masalaga bag‘ishlangan axborotni taqdim etish uchun tasvir, ovoz va matndan foydalanadi. O‘z taxminlarini tayyorlash va ilgari surish asnosida ular vaqt, makon, resurs va h.k. ning yetishmovchiligi bilan bog‘liq muammolarga duch keladi.

Jamoatchilik e’tiboriga havola etiladigan kontent, shubhasiz, medialarda faoliyat yuritayotgan insonlar tomonidan tanlanadi. Ularning tanlovi esa subyektivlikdan holi emas. Bu, o‘z navbatida, yorliqlar “yopishtirilishi”ga, ma’lum bir tasavvur larning jurnalist yoki muallifning o‘zi xoxlamasada, asoslashga olib keladi. Bundan tashqari, ba’zida o‘quvchi yoki tomoshabin tasvir yoki matndan unga muallif singdirmagan mazmunni ham chiqarib olishi mumkin.

**Kontekst tahlil**. Turli media nashrlarda yoritilgan bir voqeaning tafsiloti tahlili. Ushbu tahlilda media nashrning har birida bir xil mavzuning ma’lum sanada qanday yoritilishi va har bir nashrning axborotga bo‘lgan yondoshuvlarini (ma’lum bir fikr yoki masalaga oid tushunchani taqdim etishi) va bayon qilish (taqdim etilayotgan axborotning o‘zini, e’lon qilingan axborot manbalarini, taqdim etilgan intervyular va yangiliklarni vizual qo‘llab-quvvatlanishi) usullari taqqoslanadi.

**Xulosa.** Media yordamida turli xil ma’lumot larni yaratish usullari, ular tomonidan axborotni taqdim etish usullari, tushunish uchun qiyin bo‘lgan hamda tartibsiz materiallarni qayta ishlash usullarini tushunish va foydalana olish media

savodxonlikning asosini tashkil qiladi. Media tomonidan qo‘llaniladigan turli usullar va «kodlar» negizi hamda ularni talqin qilishni tushunish muhim hisoblanadi. Bunda materiallarni kimlar yaratishi va qayta ishlashi, media va axborotning faol yoki interfaol iste’molchi lari yoki axborot yaratuvchi larning qarashlari axborotni taqdim etilish usuliga qanday ta’sir qilishini tahlil qilish ham foydadan holi emas.

MAS ko‘nikmalariga ega o‘quvchilar media va boshqa axborot yetkazib beruvchilar qanday yo‘l tutishlarini, ular g‘oyani qanday uzatish larini, ulardan qanday foydalanish mumkinligini va ular taqdim etgan axborotni qanday baholash mumkinligini tushuna oladilar.

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# MY VILLAGE YORTEPA: A GLIMPSE INTO OUR RICH HISTORY AND CLOSE-KNIT COMMUNITY

*6th grade student at public school №42,*
***Azizova O'g'iloy Abdulhamid qizi***
*Turakurgan, Namangan*

***Annotation:*** *This article is written by Ugiloy, a 6th grade student girl from Yortepa, a village in the Turakurgan district of the Namangan region in Uzbekistan. Ugiloy shares the rich history of Yortepa, including the origin of its name, which means "four hills" and reflects the village's landscape changes over time. She describes the historical significance of the village's water channels and the close-knit, modest nature of its people. The article highlights the strong community bonds, the tradition of giving affectionate nicknames, and the village's agricultural lifestyle. It also touches on the importance of education and the enduring cultural traditions that make Yortepa a unique and special place.*

***Key Words:*** *Yortepa, Uzbekistan, Turakurgan district, Namangan region, village history, four hills, water channels, modesty, community bonds, nicknames, agriculture, festivals, traditions, Navruz, education*

# МОЯ ДЕРЕВНЯ ЙОРТЕПА: ВЗГЛЯД В НАШУ БОГАТУЮ ИСТОРИЮ И СЛОЙНОСТЬ СООБЩЕСТВА

Учащийся 6 класса средней школы №42,
Азизова Ширин Абдулхамид кызы Туракурган, Наманган

***Аннотация:*** *Эту статью написала Угилой, ученица 6-го класса из села Ёртепа Туракурганского района Наманганской области Узбекистана. Угилой разделяет богатую историю Ёртепы, включая происхождение ее названия, что означает «четыре холма» и отражает изменение ландшафта деревни с течением времени. Она описывает историческое значение водных каналов деревни и дружный и скромный характер ее жителей. В статье освещаются крепкие общинные связи, традиция давать ласковые прозвища, аграрный образ жизни села. В нем также говорится о важности образования и устойчивых культурных традициях, которые делают Ёртепу уникальным и особенным местом.*

***Ключевые слова:*** *Ёртепа, Узбекистан, Туракурганский район, Наманганской области, история села, четыре холма, водные каналы, скромность, общественные связи, прозвища, сельское хозяйство, фестивали, традиции, Навруз, образование*

**Yortepa** is not just a name; it is a story in itself. The name "Yortepa" has evolved over time. Originally, our village was known as "Chortepa," which means "four hills" in our language. This name was derived from the seven hills that used to be a prominent feature of our village's landscape. However, after several floods, only four of these hills remained, leading to the name "Chortepa." Over the years, this name transformed into "Yortepa," but it still carries the essence of our village's history and its connection to the hills.

The history of Yortepa is deeply intertwined with the natural elements that surround us. Even the water channels in our village have historical significance. These channels were carefully constructed by our ancestors to manage the flow of water and ensure that our agricultural lands remained fertile. The intricate network of these channels is a testament to the ingenuity and hard work of the people who lived here long before us. They understood the importance of water and devised ways to harness it for the benefit of the entire community.

One of the most remarkable aspects of Yortepa is the modesty and warmth of its people. In our village, everyone knows each other well. This sense of familiarity creates a strong bond among the villagers, making Yortepa feel like one big family. We often greet each other with smiles and kind words, and it's common to see neighbors helping one another with daily tasks. This spirit of cooperation and mutual support is something I cherish deeply about my village.

In Yortepa, many people have nicknames, but these are always given with affection and respect. Each nickname has a story behind it, usually reflecting a person's character or a notable incident from their life. For example, one of our neighbors is called “Bobo Qahramon” which means “Grandfather Hero.” He earned this nickname because of his bravery during a flood many years ago when he saved several villagers from being swept away by the raging waters. These nicknames are a way for us to honor and celebrate each other's unique qualities and contributions to the community.

Life in Yortepa is simple yet fulfilling. Our village is surrounded by lush fields and orchards, where we grow a variety of fruits and vegetables. Agriculture is the mainstay of our economy, and many families are involved in farming. During the harvest season, the entire village comes together to pick fruits, gather crops, and share in the bounty of the land. It's a time of joy and celebration, with lots of laughter and delicious food.

The traditions and customs of Yortepa are deeply rooted in our culture. We celebrate various festivals with great enthusiasm, and each occasion is an opportunity for the community to come together and strengthen our bonds. One of my favorite festivals is Navruz, the Uzbek New Year, which marks the beginning of spring. During Navruz, we clean our homes, prepare special dishes, and visit friends and family. It's a time of renewal and hope, symbolizing new beginnings and the promise of a prosperous year ahead.

Education is highly valued in Yortepa, and our village has a small but dedicated school. Our teachers are passionate about imparting knowledge and instilling a love for learning in us. They often go beyond the regular curriculum, sharing stories about our village's history and encouraging us to appreciate our heritage. I feel fortunate to be a part of such a supportive and nurturing learning environment.

As I walk through the streets of Yortepa, I am reminded of the resilience and strength of our community. Despite the challenges we have faced, such as floods and economic hardships, we have always come together to rebuild and support one another. This sense of unity and solidarity is what makes Yortepa truly special.

In conclusion, my village Yortepa is a place of rich history, strong community ties, and enduring traditions. The story of our village's name, the historical water channels, and the affectionate nicknames all contribute to the unique identity of Yortepa. I am proud to be a part of this vibrant community and to carry forward the legacy of our ancestors. As I grow older, I hope to contribute to the continued prosperity and harmony of Yortepa, ensuring that our village remains a place where everyone feels at home.

Thank you for letting me share the story of my village with you. I hope you have enjoyed learning about Yortepa as much as I have enjoyed sharing it.

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5. MY FAMILY OF TEACHERS AND MY DREAM OF BECOMING AN ENGLISH TEACHER. Azizova Shirin Abdulhamid qizi

# ECHOCARDIOGRAPHY IN PRACTICE: APPLYING SCIENTIFIC DISCOVERIES TO BETTER UNDERSTAND AND TREAT HEART DISEASE

***Barotov Sh.K.***
*Bukhara Branch Of The Republican Research Center For Emergency Medical Care*

**Annotation:** Echocardiography, as an important method for examining the heart, is undergoing significant changes, moving from research phases to widespread clinical use. New technological advances, including improved image resolution and the development of data analysis software, are opening new horizons in the diagnosis and monitoring of cardiovascular diseases. This abstract discusses recent developments in the field of echocardiography, their impact on clinical practice and future developments. Particular attention is paid to the transition from research data to real-world application in clinical practice, and how this may impact the diagnosis, treatment and prognosis of cardiovascular disease outcomes.

**Keyword:** Echocardiography, Technological changes, Methodological changes, Diagnosis of cardiovascular diseases, Treatment monitoring.

***Echocardiography*** is an integral tool in the diagnosis and monitoring of cardiovascular diseases. Since its inception, this technology has come a long way, evolving from a relatively new research method to an important component of clinical practice. Today, we stand on the threshold of a new era in the field of echocardiography, where accumulated knowledge, technological advances and methodological changes combine to transform cardiac research into practical tools in clinical medicine. In this article, we review recent developments in echocardiography, focusing on the transition from research efforts to their application in the clinical environment. We will review emerging technologies, methodological changes, and their impact on the diagnosis, treatment, and prognosis of cardiovascular disease outcomes. In addition, we will discuss the challenges facing the medical community and the future prospects for this important area of medicine.

Materials and Methods: 1 . The study included 88 cardiac patients treated in the hospital. They were divided into the following age groups: 30 patients aged 40 years or older, 20 patients aged 60 years or older, and 38 patients younger than 40 years.

2. Echocardiographic data : Dynamic echocardiography was performed for all patients. This included the use of modern echocardiographic equipment with the latest technological advances. The study followed standard protocols to review all cardiac structures and evaluate their function.

3. Data analysis: Echocardiographic data of all patients were analyzed using specialized echocardiography software. The analysis assessed various parameters, including ventricular size, blood volumes, valve function, and concentric myocardial hypertrophy.

4. Statistical analysis: Obtained Echocardiographic data were statistically analyzed using appropriate data analysis techniques, including descriptive statistics, group comparison tests, and correlation analysis.

**Result:** A study of dynamic echocardiography in 88 cardiac patients, including patients of various age groups, revealed the following results:

1. Differences in echocardiographic parameters depending on age:

- In patients aged 40 years and older, certain changes in the structure and function of the heart, such as enlargement of the ventricles and deterioration of valve function, were identified, indicating the possible development of cardiovascular disease.

- Patients aged 60 years and older had more severe signs of cardiomyopathy and diastolic dysfunction, highlighting the importance of monitoring and early diagnosis of cardiovascular disease in older patients.

- In patients under 40 years of age, changes in the structure and function of the heart were observed, characteristic of young people with high activity and physical exertion.

2. Impact of changes in echocardiography on clinical practice:* *

- The data obtained can be used to optimize strategies for diagnosing, treating and monitoring cardiovascular diseases in clinical practice.

- Changes in echocardiography can help identify the risk of developing cardiovascular complications and take appropriate measures to prevent them.

**Conclusion:** The study highlights the relevance of echocardiography in clinical practice and its important role in the diagnosis and monitoring of cardiovascular diseases. A personalized approach to echocardiographic assessment of patients depending on their age and clinical status can improve the quality of diagnosis and the effectiveness of treatment. Further research in this area will help more fully understand the impact of changes in echocardiography on physician practice and patient outcomes.

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# CHANGES IN THE LYMPHATIC SYSTEM IN BURNS: PROSPECTS FOR DIAGNOSIS AND THERAPY

***Barotov Sh.K.***
*Bukhara State Medical Institute named after Abu Ali ibn Sino*

**Summary:** an Important role in the body's adaptation to adverse endo - and exogenous factors is played by the immune system (is), the importance of which in maintaining immune homeostasis and, consequently, the necessary level of adaptive potential of the body (APO), it is difficult to overestimate. This function is performed in the interaction of various immunocompetent organs, one of which is the lymph nodes (LU), visceral and peripheral (somatic) A new algorithm for studying the functional immunomorphology of lymph nodes is proposed, based on the determination of five parameters at the tissue level and the calculation of three coefficients. The new approach allows us to objectively and accurately assess the structural and functional state of organs both in normal and pathological conditions, which reflects the immune status and the overall level of adaptive potential of the body.

**Key words:** lymph nodes, functional immuno-morphology, morphometry, new research algorithm.

At the present time, she has found out in detail many of the features of anatomy and physiology in all structures of the lymphatic system, which now makes it possible for clinicians to actively search for ways to correct disorders of blood circulation and lymph outflow. In modern lymphology there are many controversial issues concerning the structure of endothelial cells, basement membrane, lymphatic capillaries and postcapillaries, organization, valves of lymphatic vessels and lymphangions. There is still no clear explanation of the reasons for the different number of lymph nodes in different regions and around organs. Thus, the statement that the lymph nodes are characterized by the fact that 5-7 lymphatic vessels enter the lymph node, and only one lymphatic vessel leaves the lymph node [7] is unfounded. Numerous studies of renowned lymphologists confirm that the number of inflowing and outflowing lymphatic vessels in lymph nodes varies from 2 to 8.

The lymph nodes — the most numerous organs of immunogenesis [1]. Their number in an adult is about 460, and the total weight is about 1% of the body weight (500-1000 g) [6]. This is three to five times the mass of the largest solitary organ of the IS - the spleen.

The lymph nodes carry out two main functions - immune and drainage-detoxification [3], which makes it possible to classify these organs as IS and the lymphatic system [11]. The drainage function is performed mainly by the medullary substance of the LN, the immune function belongs to the cortex, where three separate

structural and functional units are distinguished: 1) lymphoid follicles (LF), 2) interfollicular zone, or cortical plateau (CP) and 3) the inner cortex, or paracortical zone, paracortex (PC) [2].

The cellular composition of Lf is dominated by B-lymphocytes, which, upon antigenic stimulation, undergo blast transformation and subsequent differentiation into plasma cells, forming light (germinal) centers (HC) of Lf [8]. In this case, the primary Lf turns into a secondary one, which documents the presence of an immune response of the humoral type [7].

On the contrary, the population of T-lymphocytes is localized in the CP and PC [2,7,9], the expansion of which indicates an increase in the immune response of the cell type [4; 1]. A mixed type of immune response is observed with a reactive change in all immunocompetent LN structures [4].

Therefore, the morphological development of these components of the LN parenchyma reflects the level of functional immune activity of these immune system organs [14].

The statement [1] that connective tissue in humans, all bones, muscles, ligaments, fascia and aponeuroses do not have their own lymphatic drainage, does not correspond to the results of our studies and contradicts the data of other authors [5; 6]. Also controversial is the idea that all lymphatic vessels, with the exception of the thoracic duct, have almost the same diameter [1]. Due to this, it is impossible to determine to which generation a particular lymphatic vessel belongs.[20]

Literature data and our long-term observations refute this information. So, the diameter of the lymphatic vessels is extremely variable: in the ventricle it is 67-113 microns, in the small intestine - 27-945, in the liver - 67-1700, in the heart - 67-1080, in the lung - 40-1600, in the ovary - 40 -160, in the periosteum of the ribs-120-150, in the articular capsule-40-160, in the peritoneum-60-180, in the fascia-25-115, in the aponeurosis-45-175 microns. [8; 15]

Although lymphology is 400 years old, however, there are currently controversial issues on the anatomy of the lymphatic system. For example, in [10] it is noted that lymphatic capillaries begin blindly in the interstitial spaces of all organs and tissues. The exception is the brain and spinal cord, where the function of the lymphatic system is to a certain extent performed by the cerebrospinal fluid system. However, according to our data [5], there are 28 such organs, not 2.

So far there are no reliable data on the timing of the completion of the adaptation of lymphatic capillaries to the action of unfavorable factors, on the peculiarities of their reaction at various tissue and cellular levels, the degree of reversibility of these changes, etc. The solution of controversial issues in the field of studying the lymphatic system gives excellent results in clinical lymphology. Already, fundamental studies of the regularities of the structure of the lymphatic system contribute to the successful development of the endolymphotropic direction in the treatment of many diseases. [4;

11]

According to qualifications [12], "blind" lymphatic capillaries are divided into 3 groups: 1st group - capillaries have smooth contours and narrowed orifices, clavate and finger-shaped; 2nd group - capillaries are found in serous integuments with blind processes directed towards the mesothelium (they participate in the resorption of intraperitoneal fluid), the mouths of such capillaries are wide; 3rd group - the capillaries have a predominantly spherical shape, they have a narrow mouth. Often found in pathology, edema, hypoxia in the elderly.

In modern conditions, when new technical means are widely used (ultrasound, computed tomography, endoscopy, laparoscopy, radionuclide diagnostics, etc.), accurate data are needed on the individual parameters of the size of the lymph nodes, their shape, syntopy with arteries, veins, nerves, ducts of glands, lymphatic collectors, trunks and ducts.[1-5]

In recent years, some authors [13; 14] have raised the issue of the lymphatic postcapillary [15; 24], identified in the initial part of the lymphatic vessel "lymphatic postcapillary", which has a valve, in contrast to lymphatic capillaries. The valve in the lymphatic postcapillary is formed by a fold consisting of endothelial cells without connective tissue [14]. It is argued that the presence of connective tissue is a prerequisite for the valve, and the protrusion of endothelial cells into the lumen of the lymphatic capillary is not a prerequisite for the isolation on this basis of a new structural formation in the form of a "lymphatic postcapillary". [21]. We do not share the opinion that the lymphatic postcapillaries have elements of smooth muscles [2] found in the literature, and we did not find myocytes in the thickness of the walls of the postcapillaries. According to our data, smooth myocytes are found starting from the lymphatic vessels [8,11,14].

We cannot agree with the statement [16] that: Lymph is a liquid that is contained in the blood and makes up oxygen and nutrients to cells. Having received toxins in return, lymph is removed from the tissues in the veins and lymphatic vessels. However, lymphatic vessels are extremely fragile: they are prone to internal rupture, and can also be easily damaged as a result of external influences, which leads to a disruption in the flow of lymphatic fluid. The lymphatic fluid is rich in protein and rather thick. [14]

It is now generally accepted that lymph is a liquid located in the lumen of the lymphatic bed. Lymph (from Latin - clean, transparent spring water, moisture) is a biological fluid of complex composition and function, located in the lumen of lymphatic capillaries, lacunae, networks, postcapillaries, vessels, collectors, nodes, trunks and ducts. It is not necessary to identify tissue, intercellular and other types of fluids (cerebrospinal, cavity, synovial, etc.) with lymph. So, according to [11] “With a closed circulatory system, blood is not a liquid medium surrounding the cells. This role is played by tissue (intercellular) fluid - lymph. Small vessels (lymphatic capillaries) with walls of unilamellar epithelium open directly into the intercellular space and

lymphatic vessels, hence it is subdivided into tissue lymph and vascular. [13] Notes that "... in the intercellular gaps, lymphatic fluid circulates, which brings nutrient material for the cells of the Malpighian layer and carries away metabolic products from the epidermis." In such cases, it is advisable to consult a qualified lymphologist.[25]

For a clear understanding of what lymph is and how it is formed, knowledge of the theories of lymph formation is necessary [12]. It should be borne in mind that the presence of many such theories speaks of the complexity and laboriousness of the study of this issue and the need for a comprehensive analysis of different theories, which, in fact, complement and enrich each other.[15]

Since 2015, information has appeared in mythology that there are lymphatic capillaries and blood vessels in the dura mater and human brain. Until that time, it was written everywhere that there were no elements of the lymphatic channel in the brain and spinal cord and in their membranes.[26]

A group of scientists from Finland and the USA claims the existence of lymphatic capillaries and blood vessels in the dura mater (DM) of mice, humans and monkeys.

Daniel Reich (Maryland) using MRI imaged lymphatic vessels (LS) in the dura mater. The author used staining and showed the presence of lymphatic vessels in the dura mater. CSF from the brain goes to the cervical lymph nodes (here is a link to these discoveries: ne.Zimpho, 2018, No. 2, p.9).

A sensation in 2015 was the publication in the journal Nature of a study by Jonathan Kipnis and co-authors on the structural and functional characteristics of the lymphatic vessels of the central nervous system. [19]

These structures have all the molecular characteristics of lymphatic endothelial cells, they are able to carry immune cells from the cerebrospinal fluid and are connected to the deep cervical lymph nodes. The unique arrangement of these vessels may have hindered their discovery to date, thereby contributing to the dominance of the long-standing concept of the absence of a lymphatic vascular system in the central nervous system.

Conclusion. Currently, there are controversial and variable issues in the field of lymphology. The question is unclear why not all organs have lymphatic capillaries. There are large discrepancies about the structure of lymphatic capillaries (isolation, openness, lymphatics, prelymphatics, etc.). It has not been established how many regional lymph nodes are needed for each organ, etc.

Thus, the proposed new morphometric approach to the study of the functional immunomorphology of LN makes it possible to objectively and accurately assess the structural and functional state of the organ both in normal conditions and in pathological conditions, which reflects the immune status and the general level of APO.

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# TRACHEOSTOMY REQUIRES A SYSTEMATIC APPROACH AND UNDERSTANDING OF THE MAIN ASPECTS OF THIS PROCEDURE.

**Usmonov U.R., Teshaeva D.Ch.**
Bukhara State Medical Institute.

**Abstract:** Tracheostomy is an important medical procedure often used in clinical practice to provide access to the airway in patients with various diseases. However, successfully performing this procedure requires not only surgical skill, but also a systematic approach and a thorough understanding of the underlying aspects. This abstract discusses key aspects of tracheostomy, including indications, patient preparation, choice of technique and equipment, procedure performance, postoperative care, and risks and complications. Understanding these aspects is essential to ensure patient safety and successful tracheostomy outcomes.

**Keyword:** Tracheostomy, systematic approach, main aspects.

**Tracheostomy** is a medical procedure required in a variety of clinical situations, requiring a systematic approach and in-depth understanding. It involves creating an opening in the trachea to provide access to the airway. Key aspects include patient preparation, choice of technique and equipment, surgical performance, postoperative care, and management of complications.

1. Introduction

- Introduction to the topic of tracheostomy: explanation of the procedure and its purpose.
- The importance of tracheostomy in medical practice.

2. Medical indications:

- Review of conditions that may require a tracheostomy (eg, respiratory failure, laryngeal tumors, laryngeal trauma, etc.).

3. The process of tracheostomy

- Tracheotomy surgical procedure: steps, instruments and equipment used during the operation.
- The main stages of the postoperative period and recovery.

4. Care of a patient with tracheostomy:

- Regular tracheostomy care: cleaning and maintenance procedures necessary to prevent infections.
- Educate patients or caregivers about proper tracheostomy care and management of associated medical devices (eg, cannulas).

5. Possible complications and side effects:

- Review of possible complications after tracheostomy (eg, infection, bleeding, respiratory dysfunction) and methods for their prevention and treatment.

6. Forecast and prospects:

- Prognosis for patients after tracheostomy: restoration of respiratory function and general well-being.
- Current trends and innovations in tracheostomy technologies and patient care.

7. Conclusion:

- Summing up and summarizing the main aspects of the topic.
- Emphasize the importance of proper care and support for tracheostomy patients.

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# NEUROPROTECTION IN CRITICAL CARE: STRATEGIES TO PROTECT NEURAL TISSUE IN THE CRITICALLY ILL

***Khaitov Dilshod Khayotovich***
***Radzhabov Sultonmurod Samandar ugli***
*Bukhara State Medical Institute*

**Abstract:** The article discusses the relevance of neuroprotection in the context of resuscitation of critically ill patients. Neuroprotection is a set of strategies and methods aimed at protecting nervous tissue from damage caused by various pathological conditions and medical procedures. The article discusses pharmacological and non-pharmacological approaches to neuroprotection , as well as prospects for research in this area.

**Keywords:** Neuroprotection , resuscitation, critically ill patients, protection strategies, nervous tissue, pharmacological methods, non-pharmacological methods, research.

**Neuroprotection** is a set of strategies aimed at preventing damage to neural tissue in the critical care setting. The article discusses both pharmacological and non-pharmacological methods of neuroprotection , and their role in improving survival and reducing consequences for patients.

1. Critical ICU Patients: ICU patients often face a high risk of nerve tissue damage due to various factors such as hypoxia, ischemia, trauma, surgery, etc. This can lead to the development of serious neurological complications .

2. The importance of preserving nervous tissue: Nervous tissue is a key element of the body responsible for the functioning of the nervous system. Damage to nerve tissue can lead to serious consequences such as cognitive impairment, paralysis and even death. Therefore, protecting neural tissue is important to improve the prognosis and quality of life of patients after resuscitation.

3. Potential Neuroprotection Strategies: In recent years, considerable attention has been given to the development and investigation of various neuroprotection strategies that may help protect neural tissue during resuscitation. These strategies may include the use of pharmacological agents, the introduction of blood flow control techniques and oxygen therapy, and the use of methods to reduce body temperature.

4. Need for further research: Despite progress in the field of neuroprotection, many aspects of this problem remain insufficiently studied. Further research is needed to develop more effective and safe neuroprotection strategies that could be widely applied in critical care practice.

Thus, the topic “Neuroprotection in intensive care: strategies to protect neural tissue in critically ill patients” is relevant and important from the point of view of providing more effective care for patients in intensive care and improving their outcomes.

Okay, here's an example of a completed Materials and Methods section for your paper:

**Materials and methods:** Patient selection: The study included patients over 18 years of age who were in critical condition after severe trauma or a cardiovascular incident requiring resuscitation in the intensive care unit. Patient assessment: The clinical status of patients was assessed on admission and throughout treatment using the Glasgow Coma Scale (GCS) to assess consciousness and other clinical parameters to assess the severity of the condition . Monitoring methods: Neuroimaging, neurophysiological methods (eg, electroencephalography), as well as clinical methods for assessing neurological symptoms were used to assess the state of the nervous system.

**Neuroprotection strategies used:**

Use of pharmacological drugs: All patients were prescribed anti-inflammatory drugs, antioxidants and neuroprotectors to reduce inflammation and oxidative stress in the nervous tissue.

**Non-pharmacological methods:** In some cases, hypothermia therapy has been used to reduce metabolic oxygen consumption in the brain and protect nerve cells from ischemic damage.

Ethical principles: The study was conducted in accordance with the principles of the Declaration of Helsinki. All patients or their legal representatives gave informed consent to participate in the study.

Data were analyzed using SPSS software. Descriptive statistics and survival analysis methods were used to evaluate the effectiveness of the neuroprotection strategies used.

The results obtained were assessed taking into account changes in the clinical status of patients and the results of additional methods of monitoring the nervous system. The effectiveness of the applied neuroprotection strategies and their implications for resuscitation practice were discussed.

**Conclusions:** In this article, we discussed the relevance of neuroprotection in the context of resuscitation of critically ill patients. Our review highlighted the importance of developing and implementing neural tissue protection strategies to prevent tissue damage and reduce neurological complications in critical care practice.

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# ALISHER NAVOIYA ASARLARIDA PAYG‘AMBARLAR OBRAZI

***Jo’rayeva Shohnoza***
*Buxoro davlat universiteti Filologiya fakulteti*
*Filologiya va tillarni o’qitish: o’zbektili*
*6-6-uzb-21guruh talabasi*

**Annotatsiya:** Iso Masih hayoti va Alisher Navoiy asarlarida Iso Masih obrazi haqida.’’Xazoyin ul-maoniy’’da Iso obrazlarini tahlil qilish. Kalit so’zlar:Qur’on,Tavrot,Injil,yahudiylar,IsoMasih,Maryam,Xazoyin ul-maoniy

Alisher Navoiyning Mukammal asarlar to‘plami yigirma tomlikning uchinchi, to‘rtinchi,beshinchi,oltinchi tomlaridagi ’’Xazoyin ul-maoniy’’tarkibiga kiruvchi devonlarni kitobxonlarga taqdim qilish uchun bir guruh olimlar izlanishlar olib bordi.Ushbu izlanishlar mahsuli sifatida ’’Xazoyin ul-maoniy’’ga kirgan devonlarning qayta ko‘rilgan va to‘ldirilgan shaklini filologiya fanlari kandidati F.Q.Sulaymonova rahbarligi ostida filologiya fanlari kandidatlari M.SH.Hamidova,SH.U.Sharipov,L.H.Serikova va ilmiy xodimlar M.Inog’omxo‘jayeva,M.Bahodirova,M.Xayrullayevalar amalga oshirdilar.

‘‘G‘aroyib us-sig‘ar“ ushbu debocha bilan boshlanadi:

Shukru sipos ul qodirg‘akim, chun adam osoyishgohidan vujud oroyishi ogohlarig‘a jilva berdi,insonni soyir maxluqotdin nutq sharafi bilan mumtoz qildi.

Ruboiya:

Ulkim, chu jahon hilqatin og‘oz etti,
Sun‘i kilkini naqshpardoz etti.
Inson xaylin nutq ila mumtoz etti,
Nutq axlini nazm ila sarafroz etti.

Xaylin-tiriklik,jonli,inson turadigan joy ,qishloq
Sarafroz-baxtiyor,xursand,mag‘rur

Ushbu ruboiy orqali inson nutqini nazm she’riyat orqali bezalishiga,nazm nutq naqshi ekanligiga ishora qilinadi.Kimki,chiroyli nuqt so’zlasa nazm orqali uni baxtiyor etadi.Inson nomli yaratqining naqshi bu uni nutq ekanligini isboti deb ushbu ruboiyga nazar solsak ayni mudao bo’ladi.

Iso yoki Iso Masih-Qu’onda tilga olingan payg’ambarlardan biri.Islomda Muhammad (s.a.v.)dan oldingi payg’ambar sifatida alohida e’zozlanadi.Onasining ismi Maryam.Iso-Allohning o’g’li emas,Xudo ham emas,Iso Allohning bandasi va bokira qiz Maryamdan mo’jiza bilan tug’ilgan.Alloh unga ,,Bani Isroil”qavmini hidoyatga boshlash uchun payg’ambarlik darajasini iroda etadi.

U zotning tug’ilgan yili aniq emas.Eng ishonarli manbalarga ko’ra,Iso alayhissalom taxminan milodning boshlanishidan 4 yil avval hukmronlik qilgan shoh

Avgust zamonida,Vifleem shahrida dunyoga kelgan.Iso a.s.ning tug'ilishi qator samoviy hodisalar bilan bir vaqtga to'g'ri kelganligi tufayli uni Masih va yahudiylar mamlakatining yangi shohi deb hisoblashgan.

Qur'oni karimda shunday oyat keltiriladi.''Eslang ey Muhammad,Olloh aytgan edi:''Ey Iso binni Maryam,senga va volidangga bergan ne'matimni-seni Ruhul-Qudus(Jabroil)bilan quvvatlantirganimda odamlarga beshikda(go'dakligingda)ham balog'atga yetgan holingdagi kabi so'zlaganingni,senga Kitob-xat va hikmat-ilmni,Tavrot va Injilni bildirganimni va mening iznimni-ixtiyorim bilan loydan qush timsolini yasaganingni,so'ngra unga puflaganingda,Mening iznim-ixtiyorim bilan o'liklarni tiriltirib qabirdan chiqarganingni eslagin!''Moida surasi,110-oyat.

Iso alayhissalom o'z ta'limotini ko'proq masallar orqali bayon etgan. Uning chuqur, ma'nodor va o'ta mukammal tarzda ifodalangan fikrlari, har bir iborasi, so'zlari hammani hayratga solib, maftun etgan. Barcha buyuk zotlar kabi Iso alayhissalomning ham g'animlari bo'lgan. Ana shu g'animlari orasidan o'rin olgan yaqin shogirdining sotqinligi tufayli Iso xalqni g'alayonga da'vat qilganlikda ayblangan.

Amalsiz e'tiqod — o'lim

Iso yahudiylarning oliy mahkamasida turib, o'zini Xudoning O'g'li deb tanitgan. Uni Tangriga qarshi so'zlaganlikda ayblab, o'limga mahkum qilishgan. Keyin uni rimlik hokim Pontiy Pilat oldiga olib borishgan. Garchi u Isoda hech qanday ayb topmagan bo'lsa-da, olomonning talabiga ko'ra, uni o'ldirishga buyruq bergan.Rim askarlari Isoni Go'lgota degan joyga olib borib, ustunga mixlashgan. Kunduzi qo'qqisdan butun yerni zulmat bosgan. Iso o'lishi bilan yer larzaga kelgan. Uning tanasini qoyada o'yilgan qabrga olib borib qo'yishgan. Ertasi kuni esa, ruhoniylar qabr og'zidagi toshga muhr bosib, soqchilarni qo'yishgan.Iso payg'ambar xochga osilgan bo'lsada, shoirlarning e'tibor va e'tirofidan chetda qolgani yo'q. Hattoki Navoiy ham o'z asarlarida ul zotga ishora qiladilar. "Xazoyin ul-maoniy" kulliyotining birinchi devoni bo'lmish "G'aroyib us-sig'ar" da 19 ta g'azalda,''Navodir ush-shabob''da 6 o'rinda, "Badoyi' ul-vasat''12ta o'rinda ,"Favoyid ul-kibar"da 13 o'rinda Iso Masih obrazi bilan bog'liq baytlar keltirilgan.''Xazoyin ul-maoniy''kulliyotining birinchi devoni "G'aroyib us sig'ar"devonidagi g'azallaridagi Iso payg'ambar obrazlariga va bizga notanish so'zlar izohiga to'xtalamiz.

Nutqi jon bermak qilur ul la'li xandon birla baxs,

Rost Isodekki qilg'ay obi hayvon birla baxs.

Nutqi-so'zi la'l-qimmatbaho tosh,yor labini la'lga qiyoslamoqda obi hayvon-hayot suvi,jon baxshida qilguvchi suv

La'li xandon bilan baxs qilsa,suhbatlashsa uning suhbati jon berishni talab qiladi,Iso jon baxsh qilguvchi bo'lsa hamki, u bilan bemalol bahs qila oladi demoqchi bo'lgan shoir ushbu bayt orqali.

Yana bir baytida Iso dami jonbaxsh dam ekanini aytib o'tgan.Iso damidan,nafasidan o'lganlar tiriladi,jon topib xursand bo'ladi demoqchi.Hamda ushbu bayt orqali Qur'oni karimdagi oyatga ishora qilingan

Iso damidin o'lgankim,rux topar erdi,
Bilgachki,topar dining, jon topti bo'lub xursand.
Chiqib bu dayrdin Isog'a nevchun hamnafas bo'lmay,
Bixamdillax tajarrud birla himmatdin-qanotim bor.
Dayrdin-o'zga din vakili Bixamdillax-xudoga shukr
Tajarrud-aloqasizlik,chetlanish,hamma narsadan kechish,yolg'izlik
O'zga dindan bo'lgan,g'ayridin Isoga nega hamnafas bo'lmay
Xudoga shukrki hamma narsadan kechsam ham himmatdan qanotim bor degan fikrni anglab olishimiz mumkin.
Damingni asra,ey Isoki,Ranjim dafig'a har kun
G'izo ul oy qilichi zahmining bir qatra qoni bas.
Ranj-mashaqqat,qiynalish,og'riq;kasallik
Daf-qaytarish,rad etish,ketkazish
G'izo-ovqat,oziq,yegulik
Chamanda tozalig'din har quruq shoxe erur Xiziriy
Magarkim andin o'tmish obi hayvonim xirom aylab.

Xizr,Hazrati Xizr,Xizr buva-islom rivotlaridagi shaxs,taqvodor inson.Qur'oni Karimda tilda olinmagan,lekin ulamolar tomonidan Qur'onda ''Allohning quli''nomi bilan tilga olingan,boqiylikka erishgan shaxs sifatida talqin etadi.Qur'oni karimning ''Kahf surasi''da Xizr haqida gap boradi.Aytilishicha,Muso a.s.Allohga murojat qiladi,so'ngra o'zidan ham ilmli kishi bor yoki yo'qligini so'raydi.Alloh taollo esa Xizr undanda ilmli ekanini aytadi.Muso Xizr bilan uchrashib, unga hamroh bo'lishini so'raydi.Xizr rozilik berib shartini aytadi.Xizr nima qilsa ham o'zi aytmaguncha so'ramasligini,sabr qilishini uqtiradi.Muso rozi bo'lgach safarga otlanishadi.Yo'lda Xizr tomonidan kemaning teshilishi,bir bolani o'ldirishi,yiqilay deb turgan devorni tuzatishi Musoni hayratga solidi.Xizrni aytganiday sabr qilish o'rniga har bir hodisaning sabini so'raydi.Xizr har bir voqeani bayon etgach Muso bilan shu yerda xayrlashadi.Bu voqea orqali Xizrning o'ziga xoz yetik sifatini ko'rishimiz mumkin.Musoning Xizrdan ta'lim olgani Xizr Musodan Afzal ekanini ko'rsatib turibdi.

Bizga ma'lumki Iso nafasi orqali tiriltirish xususiyatiga ega edi. Baytda mening kasalimga nafasingni sarf qilavermay damingni asr.Ul oyning,go'zalning qilichi zahmidan,yarasidan bir qatra qon bas menga deb,- mashuq Isoga murojaat qiladi.

Gar habibim qilsa izxori kalom,ey piri dayr,
Isoyi Maryamni ul dam gungi modarzod bil.
Dayr-butxona,Mayxona
Gungi modarzad-tug'ma soqov

Agar menga habibim so’z so’zlasa,ey mayxona piri

Isoning onasi Maryamni tug’ma soqov bil.Ushbu baytda bokira Maryamning taqdiriga ishorani ko’rishimiz mumkin.U g’oyibdan,bokira holatida ham homilador bo’ladi.Oy kuni yetganida qishloqdagilardan uyaladi,hayo qiladi.Shu sababli qurugan darxat kovagida farzandini dunyoga keltiradi shaklidagi rivoyatlar ham mavjud.

Ey labing Iso damidek xasta jong’a choraras,
Vax,necha g’amzang Navoiy qatlin etgay multamas.
Ul muborak ko’nglunga bo’lg’ay muyassar bu xavas,
Lutfini boshtin yana tirguzsang,ey Iso nafas

Choraras-biror ishning chorasiga yetuvchi,iloj qiluvchi
G’amzang-noz va dilbar ishva bilan kipriksuzib boqish
Multamas-iltimos,so’rov,so’ralgan

Bu muxammasda nido san’ati qo’llangan bo’lib,mashuqani labini Iso damiday jonga xuzrbaxsh.necha nozing Navoiy qatlin so’raydi.Yorni muborak ko’ngliga xavas qildim

Badoyeul-vasat kulliyotining Alif xarfiningofatlarining ibtidosi’’Badoye’’dinning birinchi g’azalidagi quyidagi baytga e’tibor qaratsak.

Zahri firoqingdin qayu oshiqki bo’ldi talxkom
No’shi visoling yetmasa,Iso anga topmas davo

Ushbu baytda yorning visoliga yetishishda ma’shuqning chekkan ozorlariga hattoki Iso ham davo topolmasligini aytib o’tadi.Firoqingda qaysi oshiq mubtalo bo’lsa,sening husni jamolingga yetisha olmasa uning dardiga hattoki Iso ham chora topolmaydi.Uning jonbaxsh dami ham ojiz demochi.Bu misralardagi go’zal yor obrazi orqali shoirning Allohga bo’lgan muhabbati ifodalanmoqda.

Dardi xajrimg’a ul ikki la’li xandondur davo
Kim,o’lar Iso damiyu obi hayvondur davo.
Ne davo Iso daminfahm ayla,ne hayvon so’yin,
Hajr jonin olg’anelga vasli jonondur davo.

Mening dardimga ul la’li xandon(yor labini la’l qimmatbaho toshga o’xshatyapti)davo.Kimdir bu dunyoni tark etsa Iso nafasi yoki tiriklik suvi davo bo’lur.Menga Iso dami nefoyda berur.Hajr jonini olganga jonon vasli davo bo’lur-deb nasriy bayon qilishimiz mumkin.Yuqorida keltirilgan baytda nihoyatda betakror Tashbih-o’xshatish san’atidan foydalanilgan.G’ayridindan chiqib, payg’ambarlik darajasiga yetgan Iso Masih nomini keltirish orqali talmih san’ati yuzaga kelgan.’’Davo’’so’zi qofiyalanuvchi so’zdir.

O’yla ruxafzo labing anfosidin toptim xayot
Kim,gar o’lsam,ko’rmagaymen Iso-yu Maryam yuzin
Yor mexmon bo’lmoq ermish,boring,ey jonu ko’ngul,
Istaramkim ko’rmagay,albatta,nomaxram yuzin.

Ruxafzo-jon baxsh etguvchi,shodlik baxsh etuvchi,jonlantiruvchi
Anfosi-dam,nafas
Tiyra kulbamga kirib,jono,o‘lumdin ber najot,
Zulmat ichra Xizrg‘a ul navkim obi hayot.
Tiyra-qorong‘u,qora
Nay-qamish
Qorong‘u kulbamga kirib,ey jonon,o‘limdan najotkorim bo‘l
Zulmat ichra Xizrg‘a ul qamish obi hayot erur

O’yla jon baxsh etguvchi labing nafasidan topdim xayot
Agar o’lsam iso-yu Maryam yuzini ko’rmayman
Agar yor mehmon qilsa boring boring jonu ko’ngildan
Nomahram yuzini ko’rmasliginggizni istar edim.

Ushbu baytda juft qatordagi so’zlar o’zaro qofiyadosh bo’lib kelgan.Talmih-Iso,Maryam ismlarini ifodalash bilan yuzaga chiqqan.Shoir nido sanatini ifodash uchun ko’ngilga murojaat qilgan.

“Favoyid ul-kibar’’da ham Iso payg’ambar obrazi e’tibordan chetda qolib ketmagn.Shoir undan mohirona foydalanib tengsiz baytlarning dunyoga kelishiga sababchi bo’ldi.

Ne husnu nutq erur, yo rabki,zohir aylasang andin
Quyoshqa tiyralig’ bolgay,ayon Isog’a abkamliq.
Zamon ahlin qotiqmu deyin yo sustkim,yoqtur
Jafo ichra alarda sustlig’,ahd ichra mahkamliq.

Abkamliq -soqovlik,gunglik.lol bo’lganliq
Yorning husnu nutqi,so’zlagan so’zidan so’zlasang oshkpr etsang,
Quyoshg’a tirgak bo’ladi,Iso lol bo’lganidan saqov bo’lishi ayondir.
Zamonamiz ahli qattiq yki sustmi
Ularda sustkashlik ham jafo ham yo’q lekin ahdiga vafo bor.

Ushbu baytlardan ko’rinib turubdiki,yor shu darajada go’zalki hattoki Iso payg’ambarninghayotbaxsh dami ham ojiz uning oldida. Ma’shuqaning hijroni jon olsa,tarifi jon baxsh qiladi.Abkamliq,mahkamliq so’zlari qofiyadoshlikni yuzaga keltiradi

Bo’lma dersan,nosixo,xusn ahlig’a xayronu zor,
Mendin o’tkil,ko’ngul otlig’ zori xayronimg’a ayt.
Va’dasi ummididin bukim Navoiy berdi jon,
Ey sabo,Iso nafasliq axdi yolgonimg’a ayt.
Nosixo-nasihatgo’y

Vax ne tarsodurur ul dayrdakim,
So’z demas oldida Iso gustox.
Xoling ul hindu erurkim,bo’lmish
Labing ustida shakarxo gustox.

Gustox- adabsiz,andishasiz,tortinmaydigan,tortinmas
Tarso-Xristian,nasroniy
Vax ne nasroniydur mayxonada
So’z demas oldida Iso andishasiz
Holing hinduga ham ayon
Labing ustidagi shakar ham adabsiz

Poya oliy istasang,tajrid et avval ixtiyor
Iso andin aylar ushbu nilgun ayvoni tavf.
Bir Navoiyning buzug’ ko’ngliga evrul,rahm etib,
Netti gohi Yusuf etsa ehzonni tavf.
Poya -martaba
Tajrid-ajratish, yakkalash
Tavf-aylanish,ziyorat
Nilgun-ko’k rang,nil rang,ko’kimtir

Labing obi hayotida erur Iso dami muzmar,
Ne tong,bo’lsa o’luk jonbaxsh aning shirin kalomidin.

Muzmar-yashiringan,berkitilgan
Labingda Iso dami yashiringan.U har tong o’liklarga jon baxsh etishga qodir deydi
Har nafas la’li labing nuqta bila
Iso e’jozini aylab izhor Nola noqus kebi tortib zor-zor.
Dayr -butxona,mayxona
Noqus-katta qo’ng’iroq

“Qur’oni karimda”ning ma’nolar tarjimasida ham Iso payg’ambar Baqara Surasida aytib o’tadi.Baqara sigir demakdir. Surada Muso alayhissalom qavmi orasida noma'lum shaxs tomonidan bir kishi o'ldirilganda, Alloh taolo bir sigir so'yib, uning bir bo'lagi bilan o'likni ursinlar, deb buyuradi. Shu buyruqni bajarishganda murda tirilib, o'z qotili kimligini aytib beradi. Shu sababli sura sigir nomi bilan atalgan. Bu Qur'ondagi eng yirik sura bo'lib, unda e'tiqod (Islom mafkurasi), ibodat, muomala, axloq, nikoh, taloq va idda kabi masalalar bayoni bilan bir qatorda Muso alayhissalom, Fir'avn va Isroil avlodi o'rtasidagi mojarolar o'z aksini topgan.

Iso ulardan kufrni sezgach, aytdi: "Alloh sari (borishimda) menga yordamchilar kim?" Havoriylar aytdilar: "Biz Alloh (dinining) yordamchilarimiz. Allohga imon keltirdik va Allohga (bo'yin sunuvchi) musulmon ekanimizga guvoh bo'lgin (ey, Iso!)

Ular (yahudiy kofirlari Isoning qatli borasida) makr qildilar. Alloh ham "makr" qildi. Alloh makkorlarning yaxshisidir. Izoh:Allohning "makri" bu yerda ularning makri muqobiliga beradigan jazosidir. Zero, Allohni makkor deb sifatlash joiz bo'lmagan bo'lur edi.

Alloh aytdi: "Ey, Iso! Men seni vafot ettiruvchi, huzurimga ko'taruvchi, inkor etganlardan seni poklovchi (xalos etuvchi) hamda senga ergashganlarni qiyomat kunigacha kofirlardan yuqori qo'yuvchidirman. So'ngra, Menga qaytursizlar. O'shanda sizlar ixtilof qilgan (kelisha olmagan) narsalar borasida o'rtangizda hakamlik qilurman. Izoh:Bu oyatdagi "vafot ettiruvchi" iborasini turli xil tafsir qilganlar. Binobarin, Iso(a.s.) ni Alloh o'z huzuriga tirigicha ko'targanmi yoki haqiqatan ham vafot ettirib, so'ng ko'targanmi degan savolga tadqiqotchi ulamolarning ba'zilari: "Bu yerdagi vafot so'zi uyqu ma'nosidadir. Uni oldin uxlatib qo'yib, so'ng ko'targan yoki vafot ettirishi osmonga chiqqanlaridan keyindir" - desalar, boshqa tafsir sohiblari jonsiz holda ko'tarilganlar deb ta'kidlaydilar. Biz - hanafiylarning aqidamiz bo'yicha, Iso (a. s.) tirik holda ko'tarilganlar, deymiz. Oyatni esa: "Ey, Iso! Men seni o'z ajaling bilan vafot ettiruvchiman, ularning qatli bilan emas", - deb ta'vil qilamiz. Izoh(a): Ushbu oyatda nasroniy dini ham qiyomat kunigacha boqiy qolishiga ishorat bordir.

Albatta, Isoning (otasiz tug'ilish) misoli, Alloh nazdida bamisoli Odam (Ato) kabidirki, uni tuproqdan yaratib, so'ngra unga "Bo'l!" dedi, bas, (u) bo'ldi.

(Bu) Haq (So'z) Rabbingizdandir. Bas, shubha qiluvchilardan bo'lmang!

Sizga kelgan shu (haqqoniy) bilimdan keyin (nasroniylardan) kim Siz bilan (Iso) to'g'risida bahslashmoqchi bo'lsa, (unday kimsalarga) ayting: "Kelinglar, o'g'illarimiz bilan o'g'illaringizni, xotinlarimiz bilan xotinlaringizni, o'zimiz bilan o'zlaringizni chorlab, so'ng (birgalikda) iltijo qilamiz, bas, yolg'onchilarga Alloh la'natini tilaymiz". Izoh:"Madorik" tafsirida aytilishicha, Nijron qabilasining yepiskopi Oqib boshchiligida nasroniylar uchrashuv belgilangan joyga yaqinlashganlarida payg'ambarimiz nabiralari - Hasan, Husan va Fotima qizlari bilan kelayotganini ko'rishadi. Shunda Oqib o'z izdoshlariga: "Ey, nasroniylar jamoasi! Ortingizga qaytaveringiz! Men biz bilan bahslashish uchun kelayotgan shunday zotlarni ko'rayapmanki, ular agar Allohdan tog'ni ko'chirishni so'rasalar ham ijobat bo'lur", - deb qaytib ketishgan ekan.

Albatta, bu rost qissadir. Allohdan o'zga iloh yo'q. Allohning O'zigina qudrat va hikmat egasi.

Ibrohim-Qur’ onda nomi zikr etilgan payg‘ambarlardan biri,o‘zidan keyin o‘tgan barcha payg‘ambarlarning bobokaloni,arablar va yahudiylarning umumiy avlodi.Allohning chin do‘sti,imomi,siddiq va hanif deb ta‘riflanadi.Yahudiylar-xristian diniy adabiyotlarida Avraam nomi bilan ma‘lum.Bobilda taavallud topgan.

## FOYDALANILGAN ADABIYOTLAR RO’YXATI:

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# THE IDEOLOGICAL AND ARTISTIC ANALYSIS OF ALISHER NAVOY'S RUBAI'S AND THEIR MAIN THEME

***Saidova Mokhinur Yakubjon's daughter,***
*Student of Philological Faculty of BukhSU*
*Saidova_mohinur@mail.ru*
*+99893 475-25-06*

**Annotation**

*In this article, Alisher Navoi's poetry gulshan and rubai from "Perfect works" are analyzed. Their ideological and artistic content, weight, and artistic arts used in them are determined.*

**Key words:** *sick, lover, loyalty, devotion, caravan, allusion, narcissus, soul, friend.*

Alisher Navoi is a great poet and thinker, statesman. His full name is Nizamiddin Mir Alisher. Under the pseudonym Navoi, he wrote in Chigatai (old Uzbek language) and Farsi (his works in Persian). In the West, Chigatai literature is considered the largest manifestation of Uzbek literature. In general, there is no great person like him among all the Turkic peoples.

Navoi was a friend of the future ruler of Khorasan (Transoxania) Husayn Boykara from his youth. He started writing poems at the age of 10-12. According to the information left by the historian Khondamir, a contemporary of Navoi, the famous Uzbek poet Lutfiy met the boy Navoi in his old age and appreciated his poetic talent.

During his life, Navoi visited different countries of the Muslim East and met famous people of his time. Improves his poetic skills.

Navoi tries his pen in almost all genres of the Muslim East and can show that he has his own voice and style. If we talk about his lyrics as just one example, Navoi's lyrics are like a great work of art recognized by the whole world. The topics covered in his poetic works, especially his ghazals and rubai, are the most discussed topics.

In most of his ghazals and rubai's written on the subject of love, both love for God and love for his servant are expressed in beautiful lines.

His rubai's have also attracted the attention of many poets. One of the poet's rubai's is as follows:

*I received a letter from the patient,*
*It is inevitable that this letter will mention loyalty.*
*I cried when I saw this letter that guided me,*
*I poured myself onto the paper like tears that had already flowed.*
(Collection of perfect works. Volume 20)

As we can see, in this rubai the poet sang about the pain of a lover. One of the most common literary traditions in classical literature is to sing the pain of a lover in lyrics.

That is, I am sick, I received a letter from a beautiful place. It is inevitable that the loyalty of my wife was reflected in this letter, that's why I couldn't stop my tears when I saw this letter. I spilled a little and wrote you a letter.

This is the prose description of the rubai. In this rubai, the poet describes how he suffered in love with his lover and shed tears non-stop for even one of his letters.

*A caravan of spring breezes came to Chaman,*
*Instead of a load, Chin tied his navel with a clean sunbule.*
*Expressing joy from the bud of Nargiz,*
*It seems that dust fell into his eyes from (your) way.*

*The artistic arts used in this rubai are as follows:*

1. Talmeh.

Instead of a load, CHIN tied his trunk with a rope.

Here, Chin is the name of one of the ancient cities, so we can say that it directly belongs to the art of talmeh.

2. Allegory.

A caravan of spring breezes entered Chaman.

That is, the caravan of the spring breeze can be an example of simile here.

In this rubai, Navoi describes the arrival of summer as the coming of spring. As much as people are happy when spring comes, which is the season of rejuvenation and renewal, the lover is so happy that the light has arrived.

*John, don't take your hand off my wrist for a moment,*
*Don't take your ear off my mouth when I'm talking.*
*Do not take your face from my face, do not release my neck from your arms,*
*Do not take my soul from my body and my pleasure from my body.*

In this Ruba'i, Navoi expressed the fact that he does not smile even for a moment by the side of the fire, with great mahurat and very perfect metaphors.

*Strength in the heart,*
*There was a zinc badge on the body,*
*Dil is inclined to charm*
*John was fascinated by the world's conspirator.*

This rubai is the first rubai in Mir Alisher Navoy's "Perfect collection of works".

This rubai property is considered ruby. It is known that in the poetry of Alisher Navoi, love and pain are closely related to each other, one is in harmony with the other. The interpretation of love is the most meaningful theme in the great poet's poetry. In particular, the love of man for man, for life, for God.

The same theme of love dominates the first Rubaiyat. Real love is a person's love for God, and a person's love for a person, life, and the world is figurative love.

*O, from your face, the flower of the eye is overflowing with flowers and tulips,*
*Ravshan is the place of sight from Chehrang lamp,*
*If your face doesn't make your pupils light up,*
*The two bright torches of the eyes remain in the darkness.*

In this Rubaiyat, the lover is addressing the mistress. It is said that Yor's face and eyes are like a pink tulip, the color is so bright that your eyes can be seen clearly, your pupils are bright because of your face, and if there is no light from your face, your two eyes Hey, without you, my patience has nothing to lose,

*There is nothing like the pain of hijran in the heart from your sorrow*
*There is nothing in life that is free from the hardships of deprivation*
*(Therefore, I have) no patience, no heart, no soul.*

One of the types of rubai is taronai rubai. (a, a, a, a)

The fact that the lover shows his features to the inner world and shows himself as a poor person is one of the characteristic features of the image of the lover in our classical literature.

In this verse we can observe the poverty of the lover. It is known that the lover is telling his lover about his inner feelings. We observe that a lover without words has no patience, no language, no soul.will remain in darkness.

*Soqi, na zi obi talkh, k-az tashihi fast*
*Yak ratli garon so'I man ovar, barkhez*
*If you do, please forgive me*
*Andoz ba ostinu dar ringkam rez*
*Analysis:*
*(O) savior, get up, not from bitter water,*
*He filled a huge goblet from the incendiary fire and brought it to me.*
*If I apologize by saying that I have repented (from drinking alcohol),*
*Put (the water) on your sleeve first, and then pour it (from it) down my throat*

When we say Navoi, we think of a great ghazal writer and thinker. But along with his ghazals, there is another genre - Rubai. The rubai is rhymed in the form of a- a-a-a, and its taronayi belongs to the type of rubai. We know that Saqi means the May Pourer. In this Rubaiyat, Navoi said to Saqi: fill me a big glass and bring me bitter oil like a burning fire. And if I tell you that I have repented by giving up drinking oil and ask for forgiveness, you should put the oil on your stomach first and then pour it down my throat. Abstaining from intoxicating drinks has been revealed by the loving and dear Allah even in our great book "Qur'an al-Karim".

*Soki, ba kadah mai tarabnok andoz*

*Otherwise, the spirit is pure and pure*
*So salty shagab bar mani bebok andoz*
*Z-on gulgula dar gunbadi aflok andoz*
*Analysis:*
*Soki, pour the wine of joy into the glass*
*Let the reflection of your pure face fall on transparent oil*
*So, if there is (any) strife and commotion, put it on the head of my begum,*
*So that his voice reaches the firmament*

This rubai is the 29th rubai in the "Collection of Perfect Works". Rhymes: a-a-a-a; The taronayi of the rubai belongs to the type of rubai. In this rubai, there is an appeal to the saqee. Pour the wine of joy into my glass towards the Holy Spirit, let it be so transparent and pure that I can see your reflection falling on it. If there is any incitement or conspiracy, put it all on my head, so that the sound from it reaches the sky and the sky.

*Raftiyu ba chismam az tu to bast hanoz*
*Chashmam zi dream tu purobast hano'z*
*Tan z- atashi ishqi tu kabobast hano'z*
*I'm waiting for you in my heart*

Analysis:

*(You) have gone, and from then on my body will suffer (in a thousand and one pains),*
*My eyes are still filled with tears*
*My body is still hot in the fire of your love,*
*Come again, your heart is still broken*

Rhyming of rubai: a-a-a-a in the form. We take it as a special rubai. In this rubai, Alisher Navoi addresses Yor. That is, since he left, the body of the lyrical hero-lover has been in a thousand and one pains. He lives with his imagination and his eyes are always filled with tears. The body of the lover is still burning in the fire of Yor's love. If the day comes, the sadness in the lover's tongue will disappear, and the desolation will disappear. After reading this rubai, I became even more convinced that Navoi used the words beautifully and created beautiful, heart-pleasing verses in the rubai.

*I am not aware of who I am in this world*
*Or what am I injured from, why am I injured?*
*I don't know whether I am from the human race or from the soil?*
*If I am made of dust, what kind of person am I?*

This 1st rubai of ours is the 52nd rubai in the "Collection of Perfect Works" of Hazrat.

Rubai is rhymed in the form of a-b-d-e, and its property belongs to the type of rubai. Navoi examines himself in this rubai. That is, he says that he does not know who he is in this world. He asks himself whether he is from the human race or from the soil. There are many stories and legends about this among the people. Or Navoi says that if I am made of dust, he thinks about what kind of person I am.

*My soul is in pain from the pain of love, what should I do?*
*I have become a disgrace to the world, what should I do?*
*I know that the cure for this pain is patience*
*But what can I do if I can't be patient?*

This rubai is the 53rd rubai in the "Collection of Perfect Works". Rhymes: a-a-b-a; The property of the rubai belongs to the type of rubai. In this rubai, Navoi writes verses about love. He talks about the pain he suffered from falling in love. He says that my soul is in pain because of this love, and I am ashamed of the whole world because of this. I know that patience is the remedy for every pain, but he is upset with himself when he says that he can't be patient, poet. Patience is the best medicine for everything. Only a person who has faith knows how to be patient. With this word, we do not mean that Navoi has no faith. We have just analyzed the flaws of some people on the scale of these examples.

*Oh, your dust is the jewel of the crown of kings,*
*Because you are the king of the beautiful,*
*A spark fell from your face to the peculiar body of the world,*
*Free me from this torta-torta of the people of the world.*

Rhyming of rubai: a-b-b-d form. We take it as a special rubai. In this Rubaiyat, we can understand that Alisher Navoi is addressing God or God. Because the king of all beauties is only God who made us human. The day came from his one word. Or he created the first human race, Adam and Eve, by burning the oven. All mountains, land, water, mountains, high sand dunes came into being from his single sparking glance. God's power is unlimited. He will have what he wants and nothing will happen that he does not want. Navoi also turns to Allah when he is tired of the troubles of the world and the troubles of people, he says, save me from this.

*So much air love is possible*
*Ashkam daryo az liver khunpolo*
*Giryad ba holi man dar on ranj-u ano,*
*Murg is a river with air and water.*
*Analysis:*
*Key words: air love, tears, liver, khunpolo, gryad, ranj, murgon, mohiyo*
*Since the air of love of that moon face fell on me*
*My tears became a river and my liver was filled with blood.*

*Birds in the sky and fish in the river*
*This is (no doubt) crying over my suffering.*

This poem by Alisher Navoi is in the Persian-Tajik language and is written on the subject of love. Rhyming: taronayi ruboiy a-a-a-a (mohliqo, khunpolo, ranj-u ano, daryo) way. In the quatrain, he describes the lover as "moon-faced". In this poem, the author described his situation. The hero of the metaphorical love lyric cries and says that tears flowed from his eyes like a river. In addition, he notes that because this labor of love is so difficult, birds and fishes also cried besides him.

*A little hajri tu koram is suffering,*
*It's time to rush off the shelf,*
*The god is in the oven,*
*Daryaob ki kori dil harob ast imshab.*

In it, four stanzas are rhymed with each other (angry, rush, oven, ruin). Therefore, the poem belongs to the taronayi rubai type of this genre. And the words "Ast imshab" are performing the function of radif. He is saying that you are doing well in your marriage tonight, even that you have lost your soul. The lyrical hero explains that living apart from a lover is a pain and his heart is in a bad state.

In general, in most of Navoi's rubai, we come across the theme of lover and lover. The theme of love dominates in all three rubai's analyzed above. The artistic arts used in Navoi's rubai also give a special shine to the rubai.

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# KO‘HNA TUPROQQAL’A YODGORLIGI-POYTAXTMI YOKI SAROY?

***Xusanova Gulchiroy Sherali qizi***
*Toshkent davlat sharqshunoslik universiteti talabasi*
*husanovagulchiroy4@gmail.com*
*Ilmiy rahbar:* ***I.B.Xudoynazarov***

**Annotatsiya:** Ushbu maqolada Xorazmning qadimiy madaniyatining birinchi darajali yodgorligi hisoblangan Tuproqqal’a manzilgohi atroflicha tahlil qilinadi. . Milodiy II-IV asrlarda Qadimgi Xorazm davlatining poytaxti hamda undan keyingi davrlarda esa, harbiy istehkom vazifasini o‘tagan Tuproqqa’la manzilgohi antik davrda Xorazm va unda kechgan siyosiy, iqtisodiy, etnomadaniy masalalarini o‘rganishda muhim ahamiyat kasb etadi. Yodgorlik o‘sha davrdagi yuqori ko‘lamdagi harbiy arxitektura yutuqlari namunasida qurulganligi va hali hanuz uning asosi mustahkam tarzda saqlanib qolgaligi e’tiborimizni tortmay qolmaydi. Bundan tashqari, Tuproqqal’adan topilgan tamg‘a shakllarining ajoyib ulug‘vorligi, loydan yasalgan haykallar, kichik terrakota haykalchalar, hayratlanarli tarzda qurulgan monumental me’morchilik, rangtasvirlarning boy diapazoni hamda grafik manzarali murakkab tasvirlari qarshimizda buyuk Kushon va Xorazm madaniyatining yaqqol tasvirini mujassamlantiradi. Avvalo ,mazkur maqolada qal’aning o‘rganilish darajasi, manzilgoh joylashuv o‘rni va yodgorlik tuzulishi , undan topilgan arxeologik topilmalar va so‘ngra uning qurulishi bilan bir qatorda antik Xorazm jamiyatida kechgan siyosiy voqealar hamda qay tarzda tanazzulga yuz tutganligi keng ko‘lamda ochib beriladi.

**Kalit so‘zlar:** Quyi Amudaryo havzasi,Ellikqal’a, Xorazm ekspeditsiyasi, S,P,Tolstov, Tuproqqal’a yodgorligi, B.V.Andrianov, Kushonlar imperiyasi, Gavhar kanali, Olovli ibodatxona, E.E.Nerazik, Markaziy Massiv, Janubiy darvoza, Shimoliy Majmua, Kanishka,Xuvishka,Vima Kadfiz, Artav tangalari, Vazamar toji, Abu Rayhon Beruniy, shoh Afrig‘, Al-Fir qal’asi, Siyovushlar.

Qadimgi Xorazm diyori o‘z bag‘rida yuksak va betakror badiiy madaniyat yaratgan.Shu madaniyatning ajoyib namunasi sanalmish Tuproqqal’a yodgorligi, bugungi kunda Qadim Kushon imperiyasi va Buyuk Xorazmshohlar davridagi mamlakatimiz tarixi va madaniyatida qanday o‘zgarishlar sodir bo‘lganligini ochib beruvchi, Xorazm ijodkorlarining mustaqil tafakkuri, badiiy mahoratining qanchalik yetukligidan dalolat beruvchi, o‘ziga xos va yaxlit majmuadir. Amudaryoning quyi oqimida, hozirgi Qoraqalpog‘iston hududining Ellikqal’a tumanida joylashgan ushbu yodgorlik Markaziy Osiyo antik davrining asosiy yodgorligi, butun qadimgi Yaqin Sharq tarixi, san‘ati va dinini tushunish uchun muhim inshootlardan biridir.

Keling, Quyi Amudaryo hududida joylashgan, va qadim Kushon madaniyating ajoyib namunasi sanalgan Tuproqqal'a manzilgohi va ushbu shahar hududidan topilgan arxeologik topilmalarga murojaat qilaylik. Ko'hna Xorazmdagi Tuproqqal'a shahar xarobasi XX asrning 30-yillaridan boshlab keng tadqiq qilina boshlandi. Dastlabki yillarda, ushbu yodgorlik B.V.Andrianov boshchiligidagi 1936-1937 yillarda tuzulgan Xorazm arxeologik-etnografik ekspeditsiyasining arxeologik-topografik otryadi tomonidan atroflicha o'rganildi. Ammo qadimgi manzilgoh bilan hamohang bo'lgan voha tadqiqot uchun imkonsiz bo'lib chiqdi, chunki uning yerlari keyingi davrlarda, ayniqsa, 12-13-asr boshlarida, Gavhar kanali bo'yida aholi zich joylashgan va yaxshi dehqonchilik qilingan davrda, o'zlashtirilgan edi. Bu yerda hayot ko'p asrlar davomida to'xtamagan va qal'qaning uch tomonida katta-katta dalalar bo'lgan. Turar-joy binolari qoldiqlari Tuproqqal'adan 1,5-2 km sharqda, janubdan shimolga chiziq bo'ylab cho'zilgan dala maydonlari chegarasida qayd etilgan edi va shu sababli manzilgoh o'rganilishini bir'oz qiyinlashdi [1]. 1937-yildan boshlab buyuk kushonshunos olim, tarix fanlari doktori Sergey Pavlovich Tolstov boshchiligidagi Xorazm arxeologiya-entografiya ekspedidtsiyasi Quyi Amudaryo bo'yidagi bir qancha manzilgohlarda keng ko'lamda qazishma ishlarini olib bordi. Tuproqqal'a manzilgohi ham shular jumlasidandir. Afsuski, arxeologik qazishma ishlari 1940-yilda boshlangan urush tufayli to'xtatildi. Moskva yaqinidagi janglarda razvedkachi artilleriyachi kapitan Tolstov og'ir yaralandi. U 1945-yilda Xorazmga qaytib keldi va 1950-yilgacha saroy katta Xorazm arxeologik-etnografik ekspeditsiyasining asosiy ish ob'yektiga, ma'lum darajada maktabga aylandi [2]. SSSR Fanlar akademiyasining S.P.Tolstov boshchiligidagi Xorazm arxeologik-etnografik ekspeditsiyasi shov-shuvli kashfiyotlarga olib keldi. Birinchi marta so'nggi antik Xorazmning yorqin va betakror san'ati, rang-barang devor rasmlari, loydan bo'yalgan haykaltaroshlik, monumental me'morchilik haqida ma'lumotlar paydo bo'la boshlagan edi. Olim o'zining " Qadimiy Xorazm Sivilizatsiyasini izlab " asarida (4-bob, 1946 yildagi ekspeditsiyaning kundalik daftarlaridan) ushbu ekspedidsiya haqida shunday deydi:

"1946-yil iyulida yangi eradan oldingi I asr- milodningning VI asriga mansub ulkan Tuproqqal'adek qadimiy shaharda qazishmalar keng avj olib ketdi.Shahar hokimining qasr saroyi asosiy maskan qilib olindi. Uch mavsumda-1938, 1940 va 1945 yillarda o'tkazilgan dastlabki tekshirishlar va qazishmalar bizga ma'lum barcha qadimiy yodgorliklar ichida Tuproqqal'a tadqiqotlarimiz uchun juda katta istiqbollar ochib berishini ko'rsatdi "[3] .

Keyingi yillarda E. E. Nerazik boshchiligidagi arxeologik otryad yodgorlik haqida kata to'plam nashr etishga tayyorgarlik ko'rish munosabati bilan 1965-1976 yillarda shahar hududida qazishma ishlarini boshlashdi va 1981-yilda Tuproqqal'a

[1].Миклухо Маклая.Н.Н., Городище Топрак-Кала.//М.,1981 -С.8
[2] .Рапопорт Ю. А., Е. Е. Неразик Топрак-кала Дворец, -М., 1984. -С.7.
[3] Tolstov S.P., Qadimiy Xorazm Sivilizatsiyasini izlab.//T., 2014.-C.53.

manzilgohi to‘g‘risida monografiya ham nashr etildi [4]. 1984-yilda 1945-1950-hamda 1965-1972-yillarda Tuproqqal’adagi arxeologik tadqiqot ishlari natijalari ma’lum bir tizim bo‘yicha birlashtirildi hamda “Топрак-кала Дворец” kitobi nashr qilindi [5]. Tuproqqal’a yodgorligi hududi to‘rtburchak shaklga ega bo‘lib, har ikki tomonida ko‘plab minoralar qoldiqlari bilan o‘ralgan. Devorlar ichida o‘ralgan maydon 17,5 gektarga (500 × 350 m) tashkil etadi. Qal’a devorlari to‘g‘ri burchakli bo‘shliqni egallaydi, cho‘zilgan va yo‘nalishi bo‘yicha meridional ko‘rinishga ega. Janubiy devorning o‘rtasida murakkab konstruktsiyali darvoza-kirish joyi bo‘lgan. Shimoli-g‘arbiy burchagida esa loy g‘ishtdan qurilgan baland tepalik ustiga qurilgan saroy bor edi. Shaharning saroy etagiga tutash hududi ham ichki yo‘lakli qalin g‘isht devori bilan o‘ralgan edi va bu ehtimol, qal’a sifatida qaralishi kerak. Ushbu saroy manzilgoh hududining 180x180 m joyni egallagan. Saroyga tomon Janubiy darvozadan yo‘naltirilgan katta yo‘l bo‘lib, u qal’aning janubiy darvozasi bilan qal’aning shimoli-g‘arbiy tomonini bog‘lab turgan [6]. Ushbu perpendikulyar yo‘l binoning xiyobonlar va zallar kabi bir necha bloklarga bo‘lib turgan. Bloklarning aksariyati turar joylar va ibodatxonadan tashkil topgan edi. S.P.Tolstovning urushgacha bo‘lgan tadqiqotlariga ko‘ra, bu yerda boshqa binolar qatorida 3-olovli ibodatxona ham bo‘lgan. Hozir bu binolarning barchasidan faqat devorlarning asoslari, pol va poydevorlarning g‘isht qoplamalari qolgan.

Keyinchalik qurilgan inshootlar ostida saroyning tashqi devorlari 7,5 m gacha (ularning asl balandligi taxminan 9 m edi) saqlanib qolgan hududlar mavjud. Shunday qilib, butun tuzilma atrofdagi tekislikdan deyarli 25 m balandlikda ko‘tarilgan.[7] Albatta, qal’a atrofini o‘rab turgan xandaqni eslab o‘tishimiz joiz.Antik davrda yodgorlik ikki qatorli devor bilan o‘rab olingan hamda, uning atrofidan xandaq ham qazilgan. Bu xandaqdan qal’a tomon uning janubiy devor o‘rtasidagi osma ko‘prik orqali kirilgan [8]. Ushbu majmuaning muhim qismi bo‘lgan bu xandaq shahar atrofidagi chegarasida, taxminan 26 gektar maydonni egallaydi. Uning devorlar tekisligidan chiqib turadigan ko‘plab to‘rtburchaklar tayanchlar bilan mustahkamlangan. Shahar

[4].Рапопорт Ю. А.,Неразик. Е. Е. Топрак-кала Дворец //-М., 1984- С.5.
[5].Толстов С. П. Древний Хорезм. М.: Изд-во МГУ, 1984. -С.6.
[6].Толстов С. П. Древний Хорезм. М.: Изд-во МГУ, 1948.-С.121.
[7] .Рапопорт Ю. А.,Неразик. Е. Е. Топрак-кала Дворец //-М., 1984-С. 13.
[8].Karimov Y.A.,Sa‘dullaev D.X. Tuproqqal’a antik davr moddiy va manaviyati xazinasi. –Xiva.,-2014-C. 53-54.

devorlari bilan o‘ralgan hududning shimoli-g‘arbiy qismi (17,5 gektar) taxminan 4 gektar maydonga ega kvadrat qal’a devorlari bilan kesilgan. Ulkan baland platformada joylashgan bu saroy qal’aning shimoli-g‘arbiy qismini egallagan va shahar devorlarining chiziqlarini yopgan holda butun me‘moriy kompozitsiyaning hal qiluvchi tarkibiy qismi bo‘lib, nafaqat shahar, balki butun atrofdagi hududda hukmronlik qilgan.

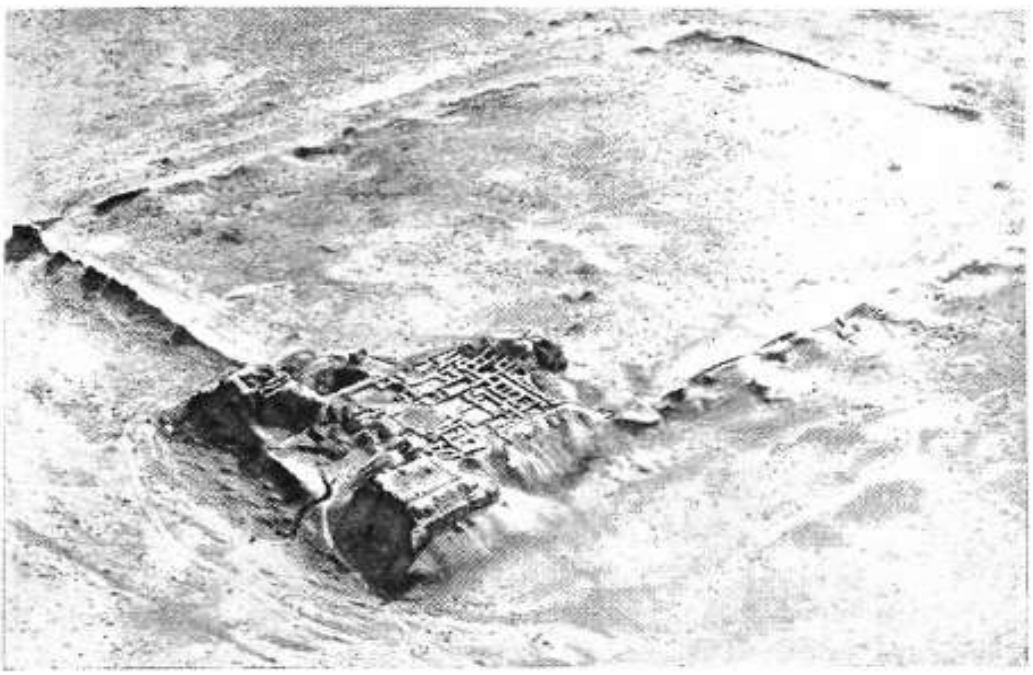

*Рис. 3. Топрак-кала. Вид на дворец и город с воздуха. 1950 г.*

Ushbu ma’lumotlar orqali Tuproqqal’aning qanchalik keng va tarkibiy jihatdan murakkab arxeologik majmua ekanligiga amin bo‘lamiz. Umuman olganda qal’a-shahar quyidagilardan iborat: mustahkam qurilgan shahar; qal’aning shimoli-g‘arbiy burchagini berkituvchi baland platformadagi saroy va unga tutash hudud, shaharning qolgan qismidan kuchli devor bilan ajratilgan zal (yoki qo‘rg‘on); shaharning shimolidagi katta saroyi massivi (Shimoliy majmua); shaharning shimoli-g‘arbiy tomonida qal’a bilan chegaralangan muhim rivojlanmagan makon;bir nechta “olovli ibodatxona” lar va zallar. Bularning barchasi deyarli bir vaqtning o‘zida qurilgan, va bizga muqim poytaxtlik belgilarini berayapti. Ammo xulosa qilishga shoshilmasligimiz darkor. Chunki bu masalada olimlar hali bir to‘xtamga kela olganlaricha yo‘q. Ushbu masala oldimizga muhim bir savol qo‘yadi.

“Tuproqqal’a yodgorligi Ko‘hna Xorazm davlatida poytaxt bo‘lganmi yoki oddiy saroy ? ”.

Albatta, yodgorlik hududidan topilgan ko‘plab topilmalar va moddiy va ma’naviy manbalar o‘rganayotgan hududimiz poytaxt bo‘lganligiga ishora qilayapti.Ayniqsa, Shimoliy majmuadan topilgan sherning oltin boshi, barelyeflar tayyorlash uchun qoliplar (Dionisian boshi shaklidagi, akant bargi va boshqalar), Kushon (Vima Kadfiz, Kanishka, Xuvishka) va Xorazm tangalari (Parem Artav tomonidan zarb qilingan ilk mis tangalar),Areamux va Vazamar yoki boshqa qadimgi Xorazm hukmdorlari tasviri tushurilgan tamg‘alar,[9] yodgorlik hududidan topilgan ko‘plab haykallar (asosan

[9].Толстов С. П. По следам Древне Хорезмийской цивилизации.-М-Л.,1948-С. 167.

shimoli-sharqidan 30 ga yaqin haykallar topilgan) va ulardagi hukmdor toj tasvirlari (haykallar milodiy III asrga tegishli bo‘lib,numizmatik materiallarga asoslangan holda taqqoslanganida Xorazm shohlarining tojlari bilan bir xil bo‘lib chiqdi) kabilar fikrimizni bir qadar isbotlaydi. Manzilgoh hududida yashagan aholi ham kam bo‘lgan deb ayta olmaymiz.( bir gektarda 200 kishidan ortiq kishi)[10]. Biz bu masalani aniqlashimiz uchun Tuproqqal’a yodgorligi qurulishining 2- tarixiy bosqichiga ya’ni milodiy III asrning 2-yarmi IV asr boshlariga qaytishimiz darkor. (1-bosqich milodiy II – III asr asrlarni o‘z ichiga oladi)[11]. Bir paytlar saroyni uning aholisi yoki (ehtimol, aniqroq) egalari tashlab ketishgan. Ammo ekspeditsiya natijalari harbiy falokat natijasida inshootning vayron bo‘lishi izlarini yoki sulolaviy markaz dushmanlar tomonidan bosib olinganidan keyin kutilishi kerak bo‘lgan shohlar va xudolar suratlarini maqsadli, yo‘q qilish belgilarini borligini ko‘rsatmaydi. Faqat devorlardan bo‘yalgan gipsning asta-sekin tushishi va pollarda kichik loy allyuviy qatlamlari va qum konlarining to‘planishi kuzatildi. Ko‘rinib turibdiki, bu davrda bo‘sh saroy qandaydir tarzda qo‘riqlangan. Agar qirollik qarorgohi Tuproqqal’adan qayoqqadir ko‘chirilgan deb hisoblasak, hamda Xorazm hukmdorlari bir muncha vaqt eski sulola markazini saqlab qolishga harakat qilgan degan to‘htamga kelsak, kuzatilgan manzara oydinlashadi. Shu bilan birga, aynan Oliy saroy tashlab ketilganda, saroy me‘morchiligining eng muhim elementlari, qirol hokimiyatining o‘ziga xos timsollari yo‘q qilingangan yoki ko‘chirilganga o‘xshamaydi. Ko‘rib turganimizdek, taxt ansamblidagi markaziy stol ham ehtiyotkorlik bilan joylashtirilgan [12].

Oliy saroyda qayd etilgan o‘zgarishlarni yaxshi tushuntirib beradigan yozma manba ham mavjud. Bu manba o‘rta asrlarning buyuk olimi, kelib chiqishi xorazmlik Abu Rayhon Beruniyning “O‘tmishdagi avlodlar yodgorliklari” asaridir. Ma’lumotlarni taqqoslash jarayonida, Beruniyning ushbu asarida keltirilgan qadimgi Xorazmshohlar sulolasi haqidagi bo‘limda, xususan, milodiy 305 yildagi qurilish haqidagi tarixiy jarayon tasvirini to‘liq ishonchli deb hisoblaymiz. Ya’ni qirol Afrig‘ poytaxtni Qiyot (Kat) shahri yaqinidagi yangi saroyga ,Al-Fir qal’asiga ko‘chirgan. O‘shanda Tuproqqal’a saroylari bo‘m-bo‘sh edi, deb taxmin qilish mumkin. Shunisi e‘tiborga loyiqki, asarda Afrig‘ yangi sulolaning asoschisi va ayni paytda oldingi sulolaning afsonaviy asoschisining avlodi sifatida taqdim etilgan. Manbalarda, S.P.Tolstov ta’kidlaganidek, Afrig‘ taxtga o‘tirishi bilan bog‘liq ba’zi notinch voqealar ham aks etadi [13]. Balki u Tupproqqal’a egasini ag‘darib hokimiyatga erishgandir va u yerda qolishni istamagandir,ammo sulolaviy an‘anaga ko‘ra muqaddas qilingan binolar saqlanib qolinishi kerak bo‘lgan [14]. Ushbu voqeadan keyin Markaziy massivda va qo‘shimcha zallarda juda kichik ta’mirlash ishlari olib borilgan. Xatto bir necha asrlar davomida poytaxt shahardan oilalar ham ko‘chib kelgan. Ammo, bu vaqtga kelib "joyning muqaddasligi" g‘oyasi yo‘qolgan va bino shahar qal’asiga aylantirilgan, ehtimol uning hukmdori va garnizonining qarorgohiga aylangan edi. Keyingi davrlarda esa shunday buyuk qal’a-saroyda turar-joy binolari vayronalari va madaniy qatlamlarning qatlamlari yo‘qligini ko‘rishimiz mumkin (yoki kam topilganligi, bu

[10].Рапопорт Ю. А.,Неразик. Е. Е. Топрак-кала Дворец //-М., 1984 . –С.139-140.
[11].Толстов С. П. Древний Хорезм. М.: Изд-во МГУ, 1948.-С. 16.
[12].Рапопорт Ю. А.,Неразик. Е. Е. Топрак-кала Дворец //-М., 1984 . –С.17.
[13].Толстов С. П. По следам Древне Хорезмийской цивилизации.-М-Л.,1948 –С.191.
[14] Рапопорт Ю. А.,Неразик. Е. Е. Топрак-кала Дворец //-М., 1984 . –С.18.

shaharning ma’lum bir qismiga xosdir). Shubhasiz, bu paytga kelib eng yaxshi mudofaa qobiliyatini saqlab qolish uchun yangi saroy- Al-Fir qal’asi yaqinidagi barcha qurilishlar ta’qiqlangan edi va su sababli Tuproqqal’a hududida ham yangilanishlar kuzatilmaydi[15]. Va ushbu voqealardan so‘ng o‘rganayotgan yodgorligimizning 3-tarixiy davri boshlanadi.

XX asrning 50-yillarida “Siyovushlar parter galereyasi”ning ochilishi esa Tuproqqal’a yodgorligi shahzodalar saroyi ekanligini ochib berdi.U butun Xorazm shohlari va shahzodalarining qadimiy saroyi va mudofaa qarorgohi bo‘lganligi isbotlandi [16]. Oliy saroyni qazish jarayonida olingan arxeologik materiallar orasida VI-VIII va hatto XII asrlarga oid topilmalar mavjud. Bu moddiy manbalarni ko‘p hollarda qal’a mudofasidagi kishilar hamda vaqti-vaqti bilan xarobalarga yashab yuradigan odamlar qoldirgan edi.

Yuqorida keltirilgan ma’lumotlarga asoslanib xulosa qiladigan bo‘lsak,muhtasham salobatga ega bo‘lgan Tuproqqal’a manzilgohi milodiy II asrga qadar qadim Xorazm davlatining poytaxti bo‘lgan. Arxeologik qazishmalar chog‘ida topilgan buyumlar manzigoh tarixi miloddan avvalgi I asrga borib taqalishini isbotladi [17]. Bundan chiqdi yodgorlik bir necha asrlar davomida ma’muriy markaz ro‘lini bajargan bo‘lishi ham mumkin. Garchi markaz hududi o‘zgargan bo‘lsa ham, Afrig‘iy podshohlar uni saqlab qolishga harakat qilishgan. Xatto manzilgoh hududidan XII XIII asrlarga oid buyumlarni ham uchratishimiz mumkin [18]. Nima bo‘gan taqdirda ham, Tuproqqal’a bizga boy Kushon madaniyati va san‘atidan tarixiy bir dalil, nishonadir. Ayniqsa yodgorlik hududidan topilgan devor naqshlari nafaqat Xorazmda, balki O‘rta Osiyoning boshqa manumental me‘moriy obidalaridan qadimiyligi, rang-barangligi, va hashamati ajralib turgan.

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[15] Рапопорт Ю. А.,Неразик. Е. Е. Топрак-кала Дворец //-М., 1984 . –С.19
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# KOMPYUTER TARMOQLARI TUZILISHI

***Xudoyberdiyev Nortura Kabilovich***
*Termiz davlat pedagogika instituti*
*Informatika va uni o‘qitish metodikasi*
*kafedrasi o’qituvchisi,*
***O‘taganov Akbarjon Fozil o‘g‘li***
*Termiz davlat pedagogika instituti*
*Tarix fakulteti talabasi*
***Yo'ldoshev Abdimurod Bo'riyevich***
*Termiz davlat pedagogika instituti*
*Tarix fakulteti talabasi*
***Nuraliyev Salohiddin Muzaffar o‘g‘li***
*Termiz davlat pedagogika instituti*
*Tarix fakulteti talabasi*

**Annotatsiya:** Ushbu maqolada Kompyuter tarmoqlari tuzilishi , turlari, tarmoq ip manzillari haqida gap boradi.

**Kalit so’zlar:** Tarmoq, Pentester yoki xaker, kommutatorlar(switch), routerlar(routers), xavfsizlik, Kompyuter tarmoqlari, Lokal, Mahalliy, Global, lokal tarmoq.

## Kirish.

**Pentester yoki xaker** – bu kompyuter tarmoqlarini yaratish ishlash printsiplarini juda yaxshi tushunadigan professional. O’zi aslida xakerlik tarmoq protokollari va umuman kompyuter tarmoqlari bilan chambarchas bog’liq.Pentesterlik keng dunyoqarashni va tarmoqlar bo’yicha chuqur bilimlarni talab qiladi.

Tarmoq xavfsizligi haqida gap ketganda pentester ega bo’lishi kerak bo’lgan eng muhim bilimlardan biri bu tarmoq protokollarini bilishdir. Bu tarmoqdagi kompyuterlarning ishlash qoidalarini belgilaydigan dasturiy ta’minot va apparat vositalarining to’plamidir. Tarmoq protokollarini bilish xakerga tarmoq faoliyatini tushunish,tarmoq haqida dastlabki ma’lumotlarga ega bo’lish va shuningdek infratuzilma xavfsizligini tekshirish imkonini beradi.

**Pentestingda e’tibor talab qiladigan yana bir muhim jihat** – bu tarmoq qo’rilmalarini bilish va tushunishdir.Tarmoq qo’rilmalari deganda biz kommutatorlar(switch),routerlar(routers),xavfsizlik devori(firewall) va tarmoqni yaratish va ishlashi uchun zarur bo’lgan boshqa qurilmalarni tushunamiz.

Biroq, Pentester yoki xaker tarmoq buyicha bilishi kerak bo’lgan bilimlar faqat tarmoq protokollari va qo’rilmalar bilan chegaralanmaydi. Zur xaker bo’lish uchun bu sohada ishlash, virtual tarmoqlarni yaratish,sozlash qobiliyati, bulutli texnologiyalarni bilish va bu yunalish buyicha keng bilim talab qilinadi. Pentester sifatida ishlash doimiy o’rganish va rivojlanishni talab qiladi, chunki tarmoq texnologiyalari doimo

rivojlanib, takomillashtirilmoqda. Pentester eng so'nggi tendentsiyalar va yangi texnologiyalardan xabardor bo'lishi, shuningdek, o'zini doimiy ravishda o'qitishga tayyor bo'lishi kerak.

Mavzumizda tarmoq xavfsizligi, kompyuter tarmog'i nima ekanligi va tarmoq protokollari va tarmoqqa oid eng asosiy tushunchalar haqida bo'ladi.

**Asosiy qism.**

**Tarmoq –** bu kompyuterlardan tashkil topgan yaxlit bir tizim bo'lib, ular(kompyuterlar) o'rtasida axborot almashish imkonini ta'minlaydi.

**Kompyuter tarmoqlari –** ikki yoki undan ortiq qurilmalar o'rtasida ma'lumot almashish uchun kerak.

**Axborot hisoblash tarmoqlar qamrab oladigan hududga bog'liq ravishda quydagi guruhlarga bo'lishimiz mumkin.**

- **Lokal** (LXT yoki LAN-Local Area Network);
- **Mahalliy**(hududiy) (XXT yoki MAN-Metropolitian Area Network);
- **Global** (GXT yoki Wan-Wide Area Network) bo'lishi mumkin.tarmoq.

Agar tarmoqning abonentlari bir-biridan uncha katta bo'lmagan masofalarda (10—15 km gacha) joylashgan bo'lsa, u holda bu tarmoq **lokal tarmoq** deb ataladi. LXT uncha katta bo'lmagan hudud oralig'ida joylashgan abonentlarni birlashtiradi. Hozirgi vaqtda lokal hisoblash tarmog'i abonentlarining hududiy sochilib ketishiga aniq bir cheklanishlar mavjud emas. Odatda bunday tarmoq aniq bir ob'ektga bog'langan bo'ladi. LXT sinfiga alohida korxonalar, firmalar, banklar, ofislarning va x.k. tarmoqlari misol bo'la oladi.

**Hududiy tarmoqlar** shahar, tuman, viloyat yoki uncha katta bo'lmagan mamlakat abonentlarini birlashtiradi. Odatda hududiy MXT abonentlari orasidagi masofa o'nlab, yuzlab kilometrni tashkil etadi.

**Global tarmoqlar** bir-biridan sezilarli uzoq masofada joylashgan, ko'pincha turli mamlakatlarda yoki har xil qitalarda joylashgan abonentlarni birlashtiradi. Bunday tarmoqning abonentlari orasidagi aloqa tarmoq(liniya)lari, radioaloqa tizimi va xattoki sputnikli aloqa asosida amalga oshirilishi mumkin.

Global, hududiy va lokal hisoblash tarmoqlarini birlashtirish ko'p tarmoqli ierarxiyani yaratish imkonini beradi. Ular ulkan ma'lumot to'plamlarini quvvatli, iqtisodiy maqsadga muvofiq qayta ishlash vositalarini va cheksiz ma'lumot resurslariga murojaat qilishni ta'minlaydi. Lokal hisoblash tarmoqlari hududiy tarmoqqa uning komponentalari sifatida kirishi mumkin, hududiy tarmoqlar global tarmoqlar tarkibiga birlashadi va nixoyat, global tarmoqlar ham murakkab strukturani tashkil etishi mumkin. Aynan shunday struktura hozirda eng mashxur va ommaviy bo'lgan dunyo miqyosidagi superglobal Internet axborot tarmog'ida qabul qilingan.

Qurilish geometriyasi (topologiyasi) bo'yicha AHT lar quyidagicha bo'lishi mumkin: shinali (chiziqli), ilmoqli (xalqali), radialli (yulduzsimon), taqsimlangan-radialli, ierarxiya (daraxtsimon), to'liq, aloqali, aralashgan.

**Internet –** bu kompyuter tarmoqlarining (dunyo bo'ylab) global tarmog'idir.

**Host –** tarmoqda faol bo'lgan va IP manziliga ega bo'lgan tizim yoki qurilma hisoblanadi.

**IP (internet protocol) address –** bu unikal identifikator, qurilmalarni tarmoqda identifikatsiya qilish uchun ishlatiladi. Ushbu manzil tarmoqdagi har bir qurilma (masalan, kompyuter, printer yoki tarmoq vositalar) uchun alohida identifikatsiya raqamiga teng bo'ladi.

**IP manzillar ikki turdadir: IPv4 va IPv6.**

**IPv4: IPv4** manzillari 32 bitdan iborat bo'lgan raqamlardan iborat. Ular 4 ta bo'sh joy bilan ajratilgan sonlar ketma-ketligi ko'rinishida yoziladi. Masalan: 192.168.0.1

**IPv6: IPv6** manzillari 128 bitdan iborat bo'lgan raqamlardan iborat. Ular 8 ta bo'sh joy bilan ajratilgan sonlar va harflar ketma-ketligi ko'rinishida yoziladi. Masalan: 2001:0db8:85a3:0000:0000:8a2e:0370:7334

**Switch –** lokal tarmoqlarda tizimlarni bog'lash va ma'lumot almashishni bajarish uchun ishlatiluvchi qurilma hisoblanadi. U tarmoq paketlarini qabul qiladi va ularni maqsadga muvofiq portga yo'naltiradi.

**Paket –** bu tarmoq orqali uzatiladigan ma'lumotlar birligi. Paketlarda jo'natuvchi, qabul qiluvchi, jo'natish tartibi va ma'lumotlarni etkazib berish va qayta ishlash uchun zarur bo'lgan boshqa ma'lumotlar mavjud.

**Protokol –** Tarmoqda ma'lumotlar formatini, ularni almashish va qayta ishlashni belgilaydigan, shuningdek kompyuter tarmog'idagi turli xil qurilmalar o'rtasida o'zaro aloqani ta'minlaydigan qoidalar va protseduralar to'plami.

**TCP/IP protokoli –** IP protokoliga asoslangan tarmoqlar orqali ma'lumotlarni uzatish uchun foydalaniladigan protokollar to'plamidir. TCP protokoli ma'lumotlarning ishonchli uzatilishini ta'minlaydi IP protokoli paketlarni marshrutlash uchun ya'ni paketlar qayerdan va qayerga borishiga javobgardir.

**UDP (User Datagram Protocol) –** tarmoq protokoli, tarmoqdagi ma'lumot almashish uchun ishlatiladigan bir transport protokolidir. UDP IP (Internet Protocol) bilan birgalikda ishlatiladi va ma'lumotlarni paketlarga bo'lib almashishni ta'minlaydi.

**OSI (Open Systems Interconnection) –** modeli, tarmoq kommunikatsiyasi va tizimlarining qurilishi va ishlab chiqarilishini tushuntiruvchi standart yaratish modelidir. Uning asosiy maqsadi, turli tarmoq protokollari va tizimlarining tariflashini, ta'rifi va ulanishini tashkil qilishdir.

**OSI modeli** mavzusi katta mavzu hisoblanadi biz shunchaki qisqacha ma'lumot berdik.Balki keyingi darslarda bu mavzuga yana kengroq tuxtalarmiz ko'ramiz.

**Firewall –** Tarmoqda xavfsizlikni ta'minlash uchun ishlatiladigan dasturiy ta'minot yoki qurilma bo'lib, tarmoq trafikini nazorat qiladi va himoya qiladi. Uning asosiy vazifalari tarmoq xavfsizligini ta'minlash, zararli va noaniq ma'lumotlar bilan kirishlarni chegaralash va tarmoq resurslarini himoya qilishdir.

**VLAN (Virtual Local Area Network) -**Tarmoqni bir nechta virtual tarmoqlarga bo'lish usuli.Bitta VLAN-ga tegishli qurilmalar, ular turli xil routerlarga ulangan bo'lsa ham xuddiki bitta ular bitta tarmoqga ulangan kabi ma'lumot almashishi mumkin.

**SSL/TLS –** Tarmoqda ma'lumotlarni uzatish xavfsizligini ta'minlash uchun foydalaniladigan xavfsizlik protokollaridir.SSL va TLS, server va klient (masalan, brauzer) orasidagi aloqani xavfsizlashtirish uchun ma'lumotlarni shifrlash, autentifikatsiya qilish va boshqa xavfsizliglarni ta'minlashni o'z ichiga oladi.

**TLS (Transport Layer Security) va SSL (Secure Sockets Layer)** protokollarining asosiy farqi ularning tarixi va versiyalari bo'lsa ham, ularning asosiy maqsadi va ishlash prinsiplari o'zgarmagan bo'lib, TLS SSL ni rivojlantirilgan va uning yangi versiyasidir.

**DNS (Domain Name System) –** internetda domen nomlarni IP manzillarga o'girishda ishlatiladigan tizim hisoblanadi. U foydalanuvchining kiritgan domen nomini IP manziliga aylantiradi va ularga bog'liq serverlarga so'rov yuboradi.

**DHCP (Dynamic Host Configuration Protocol) –** tarmoqdagi IP manzillarni avtomatik ravishda taqsimlash uchun ishlatiladigan protokoldir.Oddiyroq qilib aytadigan bo'lsak tarmoqga yangi host ulanganda u o'ziga IP ni aynan DHCP serverdan oladi.

**Port –** Tarmoq protokollari yordamida ma'lumot almashish uchun ishlatiladigan mantiqiy kanal yoki interfeysni ifodalaydi. Har bir portning raqami mavjud bo'ladi va har bir portning belgilangan vazifalari va protokollari bo'lishi mumkin.

Istalgan tarmoq protokolining o'ziga xos portlarining o'zaro aloqasi bo'lishi mumkin. Masalan, HTTP protokoli uchun 80-raqamli port, HTTPS uchun 443-raqamli port, FTP uchun 21-raqamli port, SSH uchun 22-raqamli port, SMTP uchun 25-raqamli port kabi protokollar uchun alohida portlar belgilanadi.

**Xulosa.**

Internet tarmog'i shunday bir muhitki, u o'zida turli ko'rinishdagi va turli tillardagi ko'plab axborotlarni jamlagan. Bunda ushbu axborotlar ichidan kerakli bo'lgan ma'lumotlarni qidirib topish muammosi paydo bo'ladi. Internet tarmog'ida har bir foydalanuvchi axborotni qidirish uchun o'zbek, rus, ingliz yoki boshqa tillardagi bir yoki bir necha so'zdan tashkil topgan so'rovlardan foydalanadi. Ya'ni ma'lumotlarni uning sarlavhasi yoki uning tarkibida ishtirok etgan so'zlar va jumlalar bo'yicha qidirib topish mumkin. Bunda foydalanuvchi tomonidan Internet qidiruv tizimi qidiruv maydoniga kerakli ma'lumotga doir so'z yoki jumla kiritiladi va qidiruv tizimi ishga tushiriladi. Shundan so'ng qidiruv tizimi foydalanuvchiga o'zi tomonidan kiritilgan so'z yoki jumlaga mos keluvchi ma'lumotlarni qidirib topadi va kompyuter ekranida ularning ro'yxatini hosil qiladi. Va nihoyat ro'yxatdagi ma'lumotlarni ketma-ket ko'rib chiqilib kerakli bo'lganlari kompyuterga saqlab olinadi. Ko'rib o'tilganidek, har bir foydalanuvchi Internet tarmog'i orqali o'ziga kerakli bo'lgan ma'lumotlarni uning

mavzusi hamda tarkibidagi so‘z yoki jumla bo‘yicha qidirib topishi mumkin, lekin Internet tarmog‘ida ma’lumotlar shunchalik ko‘p-ki, ta’kidlab o‘tilgan usul samara bermasligi mumkin.

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# INTERNET IMKONIYATLARI VA INTERNETDAN FOYDALANISH BILAN BOG‘LIQ ASOSIY TUSHINCHALAR

***Abdurazzoqov Ilhom Rustamovich***
*Termiz davlat pedagogika instituti*
*Informatika va uni o‘qitish metodikasi kafedrasi o’qituvchisi,*
*Tel: +998 91 587-00-96*
*Elektron pochta (e-mail):*
*ilhomabdurazzoqovterdpi@gmail.com*

**Annotatsiya:** Ushbu maqolada Internet imkoniyatlari va internetda uchraydigan xatarlar, internetning foydali va yoshlar ongiga ta’siri haqida fikr yuritdik.

**Kalit so’zlar:** International Network, Internet tarmog‘ining tuzilishi, Ijtimoiy media, tarmoq.

**Kirish.** Internet tushunchasi. Internet bu yagona standart asosida faoliyat ko‘rsatuvchi jahon, global kompyuter tarmog‘idir. Uning nomi ikki xil talqin qilinadi, ya’ni “International Network” – xalqaro tarmoq va “Interconnected networks” (Interconnec netwok) «tarmoqlararo» degan ma’noni anglatadi. U mahalliy (lokal) kompyuter tarmoqlarni birlashtiruvchi axborot tizimi bo‘lib, o‘zining alohida axborot maydoniga ega bo‘lgan virtual to‘plamdan tashkil topadi. Internet tushunchasi. Internet bu yagona standart asosida faoliyat ko‘rsatuvchi jahon global kompyuter tarmog‘idir. Uning nomi ikki xil talqin qilinadi, ya’ni “International Network” – xalqaro tarmoq va “Interconnected networks” (Interconnec netwok) «tarmoqlararo» degan ma’noni anglatadi. U mahalliy (lokal) kompyuter tarmoqlarni birlashtiruvchi axborot tizimi bo‘lib, o‘zining alohida axborot maydoniga ega bo‘lgan virtual to‘plamdan tashkil topadi.

## Asosiy qism.

**Internet tarmog‘i**, unga ulangan barcha kompyuterlarning o‘zaro ma’lumotlar almashish imkoniyatini yaratib beradi. Internet tarmog‘ining har bir mijozi o‘zining shaxsiy kompyuteri orqali boshqa shahar yoki mamlakatga axborot uzatishi mumkin. Masalan, Vashingtondagi Kongress kutubxonasi katalogini ko‘rib chiqish, Nyu-Yorkdagi Metropoliten muzeyining oxirgi ko‘rgazmasiga qo‘yilgan suratlar bilan tanishish, xalqaro anjumanlarda ishtirok etish, bank muomalalarini amalga oshirishi va hatto boshqa mamlakatlarda istiqomat qiluvchi Internet tarmog‘i mijozlari bilan shaxmat o‘ynash mumkin.

**Internet tarmog‘ining tuzilishi.** Internet o‘z - o‘zini shakllantiruvchi va boshqaruvchi murakkab tizim bo‘lib, asosan uchta tarkibiy qismdan tashkil topgan:

- texnik;
- dasturiy;

- axborot.

Internet tarmog‘ining texnik ta’minoti har xil turdagi kompyuterlar, aloqa kanallari (telefon, sun’iy yo‘ldosh, shisha tolali va boshqa turdagi tarmoq kanallari) hamda tarmoqning texnik vositalari majmuidan tashkil topgan.

Internet tarmog‘ining dasturiy ta’minoti (tarkibiy qismi) tarmoqka ulangan xilma-xil kompyuterlar va tarmoq vositalarini yagona standart asosida (yagona tilda) ishlashni ta’minlovchi dasturlar. Internet tarmog‘ining axborot ta’minoti Internet tarmog‘ida mavjud bo‘lgan turli elektron hujjatlar, grafik rasm, audio yozuv, video tasvir, veb-sayt va hokazo ko‘rinishdagi axborotlar majmuasidan tashkil topgan. Internetning ikkita asosiy vazifasi bo‘lib, buning birinchisi axborot makoni bo‘lsa, ikkinchisi esa kommunikatsion vositasidir.

**Internetga bog‘lanish**-Internet tarmog‘iga ulanish ajratilgan aloqa kanali (optik tola, sun’iy yo‘ldosh aloqasi, radiokanal, ajratilgan kommutatsiyalanmaydigan telefon liniyasi) bo‘yicha doimiy ulanish, shuningdek kommutatsiyalanadigan, ya’ni uzib-ulanadigan ulanish (Dial-ur access, Dial-ur) ko‘rinishida amalga oshiriladi.

**Ijtimoiy media -** Ijtimoiy media foydalanuvchilarning bevosita muloqotini ta’minlaydi. Foydalanuvchi lar o‘z mediakontentini ochiq foydalanish uchun yuklashi mumkin.

Internetning xususiyati va an’anaviy OAVdan farq laridan biri foydalanuvchilar imkoniyatini kengaytirishidir. Zarur dasturlar yordamida keng auditoriya uchun har bir foydalanuvchi o‘z kontentini yaratishi mumkin. Tadqiqotlarning ko‘rsatishicha, Internetda uncha keng bo‘lmagan foydalanuvchilar guruhi kontentning asosiy qismini yaratadi, masalan, video, bloglar yoki matnlar. Ijtimoiy mediada ishtirok etishning eng keng tarqalgan usuli — mavjud kontentni tahrir qilish, baholash va izohlashdir. Ishtirok etishning boshqa usullari qatoriga turli guruhlarga a’zo bo‘lish, “menga yoqadi” belgisini qo‘yish orqali munosabat bildirish yoki onlayn imzolash aksiyalari kabilar kiradi.

**Ijtimoiy media shakllari:**

1. Foydalanuvchilar profillarini o‘z ichiga oluvchi hamjamiyatlar portali, tarmoqdagi o‘zaro harakat va izohlar.

2. Munozara va izohlarga asoslangan bloglar.

3. Foydalanuvchilar tomonidan tahrir qilinadigan viki-veb sahifalari. Unda taqdim etilgan axborot foydalanuvchilar hamjamiyatiga nafaqat mavjud axbo-rotni izohlash, balki yangi bilimlarni yaratishda ishtirok etish imkonini beradi. Bunda hamjamiyatning har bir a’zosi unga axborot kiritishi yoki uni olib tashlashi mumkin.

4. Foydalanuvchi lar bir biridan qanday masofada bo‘lishidan qat’iy nazar yuzma-yuz muloqotga kirishish imkonini beruvchi tezkor axborot almashinuvi.

Ijtimoiy platformada profilni yaratishda foydalanuvchi lar hamjamiyatga o‘zini tanishtirish uchun shaxsiy axborotni taqdim etishi lozim. Chat yoki forum-larda foydalanuvchilar ba’zan shaxsiy axborotni ham, ya’ni manzil yoki telefon raqamlarini

taqdim etishadi. Bolalar va o‘smir lar shaxsiy ma’lumotni barchaning e’tiboriga taqdim etish oqibatlarini ko‘ra olmaydi. Ko‘plab ijtimoiy media xizmatlaridagi muloqot ma’lumotlari formasi shaxsga yuboriluvchi reklamaga asoslangan. Foydalanuvchi o‘zi haqida qanchalik ko‘p ma’lumot bersa, reklama shunchalik ixtisoslashtirilgan bo‘ladi.

Internetdagi axloqsiz xatti-harakat (bulling) asosan undagi foydalanuvchilarning anonimligi natijasida yuzaga keladi. Bugungi kunda ijtimoiy mediada bulling ommaviy tus olgan. Demak, bulling obyektiga aylangan inson uchun uning oqibatlari o‘ta jiddiydir. Tanaffus paytida sinfdosh lar tomonidan aytilgan haqoratli so‘zni bir nechta odam eshitishi mumkin, chunki qurbon va uni haqorat qilgan shaxs bir maktabda o‘qib, bir birini taniydi. Ammo tuhmat mazmunidagi videodan Internetda juda ko‘p saytlarga, uyali aloqa telefon-lariga, kompyuter lardagi arxivlarga nusxa ko‘chirish mumkin. Bunday material tarmoqda uzoq vaqt saqlanadi.

Internetning anonimligi hisobiga muayyan guruh va alohida shaxslarga nisbatan nafrat uyg‘otish va uning targ‘iboti keng tarqalishi mumkin. Bundan tashqari, virtual dunyoda inson larning xatti-harakati u larning real hayotdagi faoliyatidan tubdan farq qiladi. Chunki ular o‘z raqibining yuzini ko‘rmaydi va o‘z harakatining oqibati haqida o‘ylamaydi. Shuning uchun ham Internetda inson huquqlarining kamsitilishi va tuhmat qurboniga aylanish xavfi yuqoriroq. Bundan tashqari axloqsiz kontent bolalar va yoshlar uchun xavfli hisoblanadi. Chunki berilgan soxta ma’lumotlar ularning qarashlariga salbiy ta’sir o‘tkazishi mumkin. Aksariyat hollarda yoshlar o‘z yoshiga mos bo‘lmagan materiallar, masalan, pornografiya yoki reklamani Internetdan olish imkoniyatiga ega bo‘ladilar. Pornografiya mazmunidagi material bilan tanishish yoshlarning ruhiyatiga ham, jinsiy rivojiga ham salbiy ta’sir ko‘rsatishi mumkin.

**Internetdan foydalanish bilan bog‘liq chaqiriq va xatarlarni tushunish**

**Onlayn-kontent bilan bog‘liq muammolar va xatarlar**

«Youth Protection Roundtable Tool Kit — Stiftung Digitale Chancen 2009» bo‘yicha moslashtirilgan shaklda iqtibos qilinmoqda.

Yoshga to‘g‘ri kelmaydigan kontent: Internet barcha yoshdagi foydalanuvchilar uchun xilma-xil kontent taklif etadi va shu orqali ham ommaviy foydalanuvchi-larning hamda alohida guruhlarning turli qiziqishlarini qondiradi. Bolalar va o‘smirlar kontentning hammasidan ham foydalanish imkoniyatiga ega bo‘lmaslik-lari kerak. Shu munosabat bilan muayyan kontent qanday yosh guruhigamos kelishini aniq belgilash lozim. Qonun bilan taqiqlanmagan, ammo yosh foydalanuvchi larga zarar yetkazishi mumkin bo‘lgan kontentga alohida e’tibor qaratish kerak. Yoshga to‘g‘ri kelmaydigan kontent, xususan kattalar uchun mo‘ljallangan pornografiya bolalarga zarar yetkazishi mumkin, ayniqsa undan foydalanish imkoniyati tasodifan yuzaga kelgan bo‘lsa. Yoshiga to‘g‘ri kelmaydigan kontentga duch kelish xatari foydalanuvchining o‘z xatti-harakatlari bilan bog‘liq. U bu kontentni atayin qidirishi yoki bexosdan unga to‘qnashishi mumkin. Yoshi nuqtai nazaridan cheklangan kontent tijorat asosida taqdim etilishi mumkin, ammo foydala-nuvchilar tomonidan ham yaratilishi mumkin.

Yoshi nuqtai nazaridan cheklangan kontentdan foydalanish huquqi muayyan foydalanuvchi larga beriladi, umumiy kontentdan esa, odatda, hamma foydalanuvchilar foydalanadi va shu sababdan u alohida e'tibor talab etadi. Bugungi kunda ko'p bolalar va o'smirlarning multimedia imkoniyatlariga ega telefonlari bor va bitta tugmani bosib Internetga kirishlari mumkin. Bunda, ular yoshlariga to'g'ri kelmaydigan kontentga duch kelganlarida, yonida kattalar bo'lmasligi mumkinligini unutmasligi kerak.

**Kontent tekshirilmasligi:** Internetdan olingan kontent mustaqil ekspertlar tomonidan tekshirilmaydi, shunday ekan o'smirlar kontentga tanqidiy yondashishni o'rganishlari va u yerda o'qiganlarining hammasiga ko'r-ko'rona ishonmasliklari juda muhim. Veb 2.0 muhitiga xos bo'lgan foydalanuvchilik kontenti ko'pincha to'liq emas, noxolis va noaniq bo'lishi mumkin. Yoshlaronlayn o'qisabo'ladigan narsalarning hammasiga ham ishonib bo'lmasliginibilishikerak. Zarar yetkazishga undash: Tarmoqda foydalanuvchi larni o'ziga-o'zi zarar yetkazishga undaydigan ko'plab saytlar bor (bu o'z joniga suiqasd qilishni, anoreksiya yoki sektachilikni targ'ib qiladigan sayt lar). Veb 2.0 va kontent joylashtirish bo'yicha yangi texnologiya lar bor ekan, foydalanuvchi o'ziga o'zi zarar yetkazishga undaydigan kontentning ta'siriga tushib qolishi mumkin. Xususan, bolalar va o'smirlar, ko'pincha, bu kabi sayt larning yo'riqnomalarida ko'rsatilgan xavfni real baholay olmaydilar.

**Inson huquq larini poymol etish:** Internet anonimlikka asoslangan, shuning uchun ayrim aholi guruhlari va alohida shaxslarga qarshi yo'naltirilgan targ'ibotni osongina tarqatish mumkin. Boz ustiga, odamlar o'zraqiblari yoki qurbonlari bilanto'qnashganda, o'zxatti-harakatlari uchun javob bermaslik-larini bilganlarida onlayn tartibda o'zlarini o'zgacha tutishlari mumkinligini e'tibordan qochirmaslik kerak. Shunday qilib, inson huquq lari buzilishi va diffamatsiya qurboni bo'lish xatari real hayotga qaraganda virtual muhitda ko'proq.

**Reklama va marketing ko'rinishidagi bolalar uchun nomaqbul ma'lumotlar:** bolalar uchun mo'ljallanmagan reklama ta'sirida bolalar ular uchun mo'ljallanmagan tovarlar yoki xizmatlarini (masalan, plastik jarrohlik) sotib olishlari mumkin. Foydalanuvchilar o'z shaxsiy ma'lumotlarini (ismi, yoshi, jinsi) qancha ko'p oshkor qilsalar, reklamada ishtirok etish yoki lotereya o'ynashga taklifnoma olishlari etimoli shunchalik ko'payadi. Bolalar biron blankada yoki Internetdagi parchalarda o'z ismini yozish istagi qanday oqibatlarga olib kelishi mumkin-ligini ko'p hollarda oxirigacha tushunib yetmaydi lar. Shunday ekan juda katta xavfga qoladilar. Bolalar va o'smirlar orasida mobil telefonlar qanchalik ommalashgani inobatga olgan xolda, reklamani ko'rishning ushbu qo'shimcha kanaliga alohida e'tibor berish kerak.

**Shaxsiy hayot daxlsizligi:** Intenetda paydo bo'lgan kontent cheklanmagan vaqt davomida butun dunyo bo'ylab aylanib yurishi mumkin. Foydalanuvchilar, ayniqsa bolalar va o'smirlar, matn va rasmlarning qisqa va uzoq muddatli oqibatlarini tasavvur qila olmaydilar, vaholanki keyinchalik ularning o'zi bu kontent ochiq makonda

turishini istamasliklari mumkin. Server yoki platformada saqlab qolingan ma’lumotlardan har kim foydalanishi mumkin, ma’lumot egalari esa ularning shaxsiy ma’lumot lari qanchalik himoyalanmaganligini tasavvur ham qilolmaydilar. Internetda ishlar ekanlar, odamlar ushbu muhitning o‘ziga xos jihatlarini tushunishlari kerak.

**Mualliflik huquqlarining buzilishi:** mualliflik huquq larining buzilishi — bu ko‘pgina foydalanuvchilarning o‘z xatti-harakatlari bilan bog‘liq xatar. Mualliflik huquqlari atayin buzildimi yoki atayin emasmi, bundan qat’iy nazar, foydalanuvchi buni buzish deb hisoblashi va huquqni buzgan shaxs jazolanishini talab qilishi mumkin.

**Pul o‘g‘irlash/firibgarlik:** bu fuqarolarning bankdagi hisob raqamlaridan pul yechib olish maqsadida ularning shaxsiy bank hisob raqamlari, xususan shaxsiy identifikatsiya raqamlari (PIN) va bitimlarning individual raqamlari (TAN) haqida ma’lumotlarni olish jarayoniga aytiladi. Yoshlar yolg‘on veb-saytlarni haqiqiy veb-saytlardan ajratishni bilmaydilar va o‘zlarining bank ma’lumotlarini oshkor qiladilar.

**Savdodagi firibgarliklar:** sotuvchilar xuddi tovar yoki xizmatni sotayotgandek bo‘lib, aslida esa to‘lov amalga oshirilganidan so‘ng bu tovar yoki xizmatlar aytilgan tavsiflarga ega bo‘lmasligi yoki xaridorga umuman yetkazib berilmasligi savdodagi firibgarlik deb ataladi. Bu firibgarlik ham shaxsiy ma’lumot lar o‘g‘irlanishi yoki fishing bilan bog‘liq. Savdodagi yana bir firibgarlik — raqamli xizmat-larni (masalan, ringtonlarni) yolg‘on yoki noto‘g‘ri narxda sotish bo‘lib, ko‘pincha, foydalanuvchi istamagan xizmatlarga doimiy yozilishiga bog‘langan bo‘ladi. Ko‘p hollarda foydalanuvchilar (o‘smirlar va bolalar ayniqsa) bunday shartnomalarni onlayn tuzish bilan bog‘liq xavfni to‘liq anglamaydilar.

**Profil yaratish:** inson turli platformalar uchun qancha ko‘p profil yaratsa, ushbu platformalardan birida joylashtirilgan shaxsiy ma’lumotlar boshqalarga berilishi xavfi shuncha ortadi (masalan, aholi ichida so‘rov o‘tkazish yoki lotereyada ishtirok etish uchun). Demak, profil lar bevosita biror odam bilan aloqa bog‘lash va unga kerakmas kontent yoki reklamani yuborish, yoxud biron xizmatni taklif etish uchun yaratiladi. Foydalanuvchi har qanday veb-saytda, shu jumladan shaxsiy ma’lumot lar ochiq e’lon qilinadigan veb-saytda profil yaratishi mumkin. Foydalanuvchilarning profili bilan (yoki ularning shaxsiy profillari) veb-saytlarning ma’lumotlar bazasida tanishish mumkin yoki platformaning provayderi ma’lumotlarni uchinchi shaxslarga sotib yuborishi mumkin. Bunday holatlar ayniqsa xavflidir.

**Xulosa.** Internet barcha yoshdagi foydalanuvchilar uchun xilma-xil kontent taklif etadi va shu orqali ham ommaviy foydalanuvchi-larning hamda alohida guruhlarning turli qiziqishlarini qondiradi. Bolalar va o‘smirlar kontentning hammasidan ham foydalanish imkoniyatiga ega bo‘lmaslik-lari kerak. Shu munosabat bilan muayyan kontent qanday yosh guruhigamos kelishini aniq belgilash lozim. Qonun bilan taqiqlanmagan, ammo yosh foydalanuvchi larga zarar yetkazishi mumkin bo‘lgan kontentga alohida e’tibor qaratish kerak. Yoshga to‘g‘ri kelmaydigan kontent, xususan kattalar uchun mo‘ljallangan pornografiya bolalarga zarar yetkazishi mumkin, ayniqsa

undan foydalanish imkoniyati tasodifan yuzaga kelgan bo‘lsa. Yoshiga to‘g‘ri kelmaydigan kontentga duch kelish xatari foydalanuvchining o‘z xatti-harakatlari bilan bog‘liq.

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# NATIONAL CULTURAL VALUES IN THE TRAINING OF QUALIFIED PERSONNEL

***Shohjahon Saminov***
*2nd year student at Tashkent State Transport University,*
*Faculty of Economics*

**Abstract:** In addition to training national personnel, it is important to educate them in the spirit of loyalty to national cultural values, as well as to make them specialists who meet the requirements of the time. Training qualified personnel requires introducing openness, transparency, transparency, and integrated education in Uzbekistan. This article analyzes the reforms carried out in the national spiritual sphere at all levels of education in Uzbekistan their importance in personnel training, and the optimal options for achieving high efficiency in the system of all-around mature personnel training.

**Keywords:** value, ethnoculture, personnel policy, tradition, custom, education, thinking, cultural growth, enlightenment, science, production, innovation, globalization.

**Introduction.** Today, it is an important issue to deeply inculcate national and cultural values in the minds of the young generation and thereby establish confidence in the future of our youth. The soil of our country is the cradle of immortal values. The study of national values, their role, and their importance in the social life of society allows us to determine the aspects of ethnoculture related to identity.

To strengthen the social, economic, political, legal, cultural, and spiritual grounds and values of the Republic of Uzbekistan in the current period, its further development and prospects, and its independence, educating the young generation at the level of world standards and educating them in the national spirit has always been one of the most urgent problems of the society. Social development will not be ensured if these tasks are not fully implemented. Only mature personnel who are devoted to their profession and country, have high knowledge and skills, have a solid life position, are eventful and enterprising, who will give all their knowledge, skills, and talents for the benefit of society, will ensure that Uzbekistan becomes one of the most advanced countries in the world.

President of the Republic of Uzbekistan Shavkat Mirziyoev, "It is known that education of the young generation has always been important and relevant. But in the 21st century in which we live, this issue is becoming a matter of life and death" [3] - he pointed out that the educational process is a leading value.

In the important directions of the development strategy of New Uzbekistan, called "Conducting a fair social policy and developing human capital" and "Ensuring spiritual

development and bringing the field to new levels", tasks such as the fundamental reform of the personnel training system in the country, and the implementation of systematic work in the spiritual field have been defined. [1]

**Analysis of literature on the topic.** We can see that the concept of value is assessed from a spiritual point of view as "value is a component of human and social spirituality, a concept used to express the value of events, events, processes, situations, qualities, requirements and procedures in the world"[6].

In the encyclopedic dictionary of philosophy, "Value is a philosophical-sociological and axiological concept used to show the universal, social-ethical, cultural-spiritual importance of certain events in reality. All things, events, and events that are important for society, man, and humanity: freedom, goodness, equality, peace, truth, enlightenment, culture, material and spiritual wealth, monuments, beauty, moral character and virtues, tradition, tradition, Udum, and others" [7] - it is said.

The doctrine of values in general is considered by some scholars to be a recent concept. Different philosophical periods and philosophical schools that exist in them have contributed to the formation of the concept of values.

At the beginning of the 20th century, the French philosopher P. Lapi coined the term "Axiology" to explain the theory of values scientifically.

The scientific studies conducted on these problems were studied and appropriate conclusions and recommendations were developed.

This article focuses on the importance of national values and their use in the personnel training system. To reveal the essence of the matter, the consistent policy of the First President of the Republic of Uzbekistan I.A. Karimov on training national personnel in the early years of independence and the stable activities of our country's leader Shavkat Mirziyoev at the new stage of the country's economic, social and political development aimed at further improving national thinking products were used. Also, to understand the essence of the current era more deeply, Eastern and Western thinkers Kaikovus, Abu Nasr Farabi, Yusuf Khos Khajib, R. Springer, O. The views of Bauer, G. Gachev, and others were comparatively analyzed.

As a methodological basis of this analysis, methods such as general interrelationship, principles of historicity, general logic, systematic analysis, comparative analysis, and generalization were used.

**Analysis and results.** In all periods of the development of society, education on the social consciousness of different strata of the population, their level of civilization, and political vigilance have become important.

The person lives in a society based on the rules of life of that society. In today's globalization process, it is becoming an important task to inculcate in the minds of not only our people but also the young generation that preserving national pride, national pride, honor, and dignity of the country is a high value for each of us.

It is no secret that the value of Islam is deeply embedded in the consciousness of the people in our country. M. According to Bekmurodov, "...combination of religious faith with work. The act of knowing the secrets of the world through science is connected with the understanding of the greatness and power of Allah" [9]. We can see that feelings such as faith, belief, and conscience prevail in a person who values work.

Knowledge and skills are important conditions for happiness, but it seems a bit vague to say that it is the only condition for achieving this value. That is, it is a difficult matter for a person to achieve happiness with knowledge alone. Therefore, to raise the human consciousness further, it is necessary to embody all the national and universal qualities with the attribute of value.

Today, the intellectual landscape of the world is changing radically. Technology and equipment are developing rapidly. The human mind and thinking do not even notice the changes in the environment. Such a rapid development demands a great responsibility from humanity. It is no secret that in such conditions, the education system provided to the young generation is lagging behind development in terms of quality and effectiveness.

On August 14, 2018, in the Resolution of the President No. PQ-3907 "On the measures to bring up young people spiritually, morally and physically, and raise the quality of their education system to a new level"[2] ideological immunity, respect for national and universal values, measures to eliminate deficiencies in non-educational educational activities such as deficiencies have been determined.

In general, in the short time that has passed, dozens of decisions of the President of New Uzbekistan on the organization of the education system and personnel training in a new format, and many orders of the ministry and higher organization bodies are being submitted for implementation. The goal is one. That is to say, if we allow slackness in the work of instilling national and universal values in the minds of the growing generation, forming the spirit of self-sacrifice for the country and the country, and improving the spiritual and cultural world, it will become more and more difficult to achieve the noble goals we have set before us.

According to the number of labor resources, Uzbekistan is the largest country in Central Asia in the region. According to estimates, today's population has increased to over 35 million people. Uzbekistan is a country with a share of about 40% of the labor market in Central Asia;

It can be seen that the need for potential personnel in the country will increase in the future. The educational system also needs to be organized in new conditions.

Significant work is being done to further develop the higher education system in Uzbekistan. Year by year, the amount of funds allocated for the development of education is also increasing, which serves to form a new approach to the system. In particular, the process of effective use of foreign educational experiences in the training of mature specialists is expanding.

Scientific-pedagogical integration is the main factor in achieving high results. At the same time, it is possible to observe the positive influence on the ethno-cultural development of the Uzbek people. Because today, without raising the intellectual potential to a higher level, it is very difficult to carry out the assigned tasks. Along with the scientific potential, the development of ethno-cultural characteristics will ensure the emergence of personnel loyal to the country, armed with the skills of self-sacrifice.

This practice requires changing some rules that are maintained in the educational system. This also has a positive effect on the social views of students. The most important thing is that social justice is being resolved in the educational system, and it can be predicted that shortly great success can be achieved in the field of science in our country. After all, we know that science has been at the center of special attention in the system of ethno-cultural values of the Uzbek people since ancient times.

The middle class - the class of owners, which did not exist at all in our country before independence, but today is becoming a powerful support of our society, is rapidly developing, the share of small business and private entrepreneurship in the GDP has reached 56.5%, and 77.9% of the population employed in this sector is labor. it should be noted that it makes a worthy contribution to the development of the country. As President Shavkat Mirziyoyev noted, "The people's intentions are great, their work is also great, their life is bright and their future will be prosperous" [5].

A well-known sociologist-futurologist E. Toffler, "A new person is not being formed, a new social character is being formed. That's why we need to define the characteristic features of the character, not the image of a "man" in the form of a myth because it can be evaluated by tomorrow's development", [8] the issue of time and space, the views of humanity in it are revealed.

It is an important philosophical issue to develop criteria for the adoption of innovations that correspond to the principles of national culture, spirituality, and morality.

Especially when it comes to the innovations that are being spread and implemented in the spheres of culture, spirituality, morality, and art, the problem of their compliance with the principles and boundaries of national spirituality arises. Today, most scientists consider the 21st century in which we live - an era dominated by intellectual wealth, a period of rapid growth of production industries based on modern and advanced technologies.

Today, Uzbekistan does not ignore the priority of national values in the process of reforming the system of training qualified specialists. After all, it is a fact that professional personnel with high morale can conscientiously serve the development of the country. In-depth teaching of social and humanitarian sciences in all existing educational institutions serves as the main basis for the formation of a sense of patriotism, loyalty to the country, profession, and national pride in the minds of tomorrow's owners.

President Shavkat Mirziyoyev said, "Today, as we step into a new stage of our national development, it is natural that we, along with our achievements, analyze our mistakes and shortcomings in depth and think about their elimination. If we don't do these things ourselves, no one from outside will solve our problems. ... Today, people's opinions and worldviews are changing because the people have started to serve our people, not state agencies, and our country is looking with confidence in its strength and capabilities, and tomorrow"[4].

Ignorance of spirituality is the cause of all social ills. Freedom, democracy, and personal freedom are great values. But without spirituality, they lose their value, according to the golden rule of philosophy, they become their opposite.

**Conclusions.** Today, at a time when broad economic development throughout our country is a priority, the need for mature specialist personnel is increasing. Unfortunately, there are still deficiencies in the appointment of personnel within the networks. Unpleasant situations such as abuse of the powers of the position held by a highly educated specialist are observed during his career. These cases are less noticeable in enterprises built in a modern spirit. From this point of view, based on our ethnocultural characteristics, we make some comments. Determining the reasons for this, and making appropriate decisions on taking timely measures should be a task that cannot be delayed.

The main thing is to change our national thinking and our antagonisms, besides, the need to deeply inculcate the skills of respect for national culture and values in the minds of the growing generation will increase over time. After all, it is possible to implement the above-mentioned great tasks only with healthy people in all respects.

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# INGLIZ TILIDAN O'ZBEK TILIGA SO'ZMA-SO'Z TARJIMA QILISH JARAYONIDAGI MUAMMOLAR TAHLILI MAG KABOT QALAMIGA MANSUB "THE PRINCESS DIARY" ASARI ASOSIDA

***Nilufar Ruxillayeva***
*O'zbekiston milliy universiteti Xorijiy filologiya fakulteti*
*Xorijiy til va adabiyoti ingliz tili yo'nalishi bosqich talabasi*
*+998 95 182 88 08 / ruxilayevanilyfar@gmail.com*
***Iroda Jurayeva Ahmedovna**, filologiya fanlari nomzodi, dotsent*

**Annotatsiya:** Mazkur maqola Mag Kabot tomonidan yozilgan "The princess diary", ya'ni "Malikaning kundaligi" asarini ingliz tilidan o'zbek tiliga so'zma-so'z tarjima qilish jarayonida duch kelingan muammolar va ularning tahlili haqida. Maqolada foydalanilgan transformatsiyalar haqida ham ma'lumot berildi.

**Kalit so'zlar:** leksik transformatsiya, antonimik transformatsiya, kompensatsiya, punktuatsion tahlil, leksikologik tahlil, morfologik tahlil.

**Annotation:** This article is about the problems encountered in the process of literal translation of "Dnevnik princessy", i.e. "Princess's Diary" written by Mag Cabot from English to Uzbek and their analysis. The article also provided information about the transformation used.

**Key words**: lexical transformation, antonymic transformation, compensation, punctuation analysis, lexicological analysis, morphological analysis.

**Аннотация:** Данная статья посвящена проблемам, возникающим в процессе дословного перевода «Дневник принцессы», то есть «Дневника принцессы», написанного Мэг Кэбот с английского на узбекский язык, и их анализу. В статье также предоставлена информация об использованном преобразовании.

**Ключевые слова:** лексическая трансформация, антонимическая трансформация, компенсация, пунктуационный анализ, лексикологический анализ, морфологический анализ.

"Malikaning kundaligi" asari Mag Kabot tomonidan yozilgan o'smirlarning maktub shaklidagi romanining bir qismi hisoblanib, birinchi jildi 2000-yilda nashr qilingan. Ushbu asar asosida film suratga olingan. Film "Nyu-York Times" bolalar sonining eng ko'p sotilgan asar ro'yxatidan o'rin olgan bo'lib, film 48 hafta davomida namoyish etilgan. Asar Nyu-Yorkdagi o'smir Ameliya (Miya) Termopolis haqida bo'lib, u o'zini Jenoviya deb nomlangan kichik Yevropa knyazligining malikasi ekanligini bilib oladi.

## MUHOKAMA

Tarjimani biz juda katta bilim va ko'p mehnat talab qiladigan ko'p qirrali bir faoliyat deb bilamiz. Tarjimashunos olim I. Zinger: "Tarjimon sinchkov o'quvchi, ajoyib uslubchi, so'z ustasi, psixolog, har tomonlama bilimdon bo'lishi kerak", deydi [17, 164 b.] ammo shuni ham e'tibordan qochirmaslik lozimki, bu ishga ixlos bilan yondashishga shaylangan tarjimonlar uchun aniq ishlangan uslubiy yo'riqnoma yohud tarjimada aniqlikka erishish borasida qat'iy bir to'xtamning o'zi yo'q. Tarjimada aniqlik tarjima asarning asliyatga nechog'li yaqinligida, ya'ni adekvat ekanligida namoyon bo'ladi. Tarjima - bu tillararo transformatsiyalar majmuasidir, chunki bir tildan ikkinchi tilga biror parchani o'girganda biz bevosita manba (source language) tilidagi matn mazmunini tarjima tiliga (target language) ko'chiramiz, ya'ni transformatsiya qilamiz.

Mazkur asarni ingliz tilidan o'zbek tiliga tarjima qilishda ko'plab transformatsiyalarni amalga oshirishga to'g'ri keldi. Jumladan, leksikologik transformatsiyalar. Hozir ularni ko'rib chiqamiz va gaplar misolida asoslab o'tamiz: ,, Psychoanalysts find out about people's feelings "[2, 8-p] ,, Psixoanalizistlar odamlarning his-tuyg'ularini o'rganadilar. " Leksikologiya – tilshunoslikning til lug'at tarkibi, ya'ni muayyan bir tilning leksikasini o'rganuvchi bo'lim isoblanadi. Lug'atlar qanchalik mukammal bo'lmasin, unda so'zlarning barcha ma'nolari yoki ma'no nozikliklarini qamrab olishning iloji yo'q.

Leksik transformatsiyalar tarjima nazariyasida so'zlarni kontekstda almashtirish deb ham yuritiladi. Bunday transformatsiyalarning beshta turi mavjud: Birinchi turdagi transformatsiyalar keng ma'noli yoki ma'nosini aniqlash qiyin bo'lgan so'zlarni tarjima qilishda qo'llaniladi.[109-p] Yuqoridagi gapda ham xuddi shu turdagi transformatsiyadan foydalanilgan. Gapdagi ,,find " fe'li ,,topmoq " degan ma'noni anglatadi. Lekin bu fe'lga ,,out " predlogi qo'shilishi natijasida so'z ma'nosi ,,o'rganmoq " bo'lib o'zgargan va bu so'z transformatsiyaga uchragan. Leksik transformatsiyaning to'rtinchi turi bu antonimik tarjima bo'lib,[112-p] buni ushbu gap misolida izohlab o'tamiz: ,, I'm not good at math'' ''Mening matematikam yomon''. Keltirilgan gap inkor mazmunda bo'lsa-da, tarjima jarayonida antonimik transformatsiyadan foydalangan holda ,, not good at " birikmasidagi ,, good"-,,yaxshi " so'zi o'rniga uning antonimidan, ya'ni ,, yomon" so'zidan foydalanib, transformatsiya amalga oshirildi. Leksik transformatsiyaning ikkinchi turi bu umumlashtirish nomi bilan yuritiladi. Tarjimada aksariyat hollarda asliyatda berilgan ma'noda tarjima tili normalarida ortiqcha hisoblangani bois ba'zi aniqliklar umumlashtiriladi. Ingliz tilida odamning bo'yi, og'irligi aniq raqamlarda berilishi qabul qilingan. Ammo o'zbek tilida bo'y va vaznga nisbatan ishlatilgan turli raqamlar ortiqcha hisoblanadi. Raqamlar o'rniga ,,novcha ", ,,baland ", ,,daroz ", ,,og'ir ", ,,yengil " kabi aniqlovchilardan foydalaniladi.[111-p] Masalan: ,,He is six feet and very good at sports "[2, 9- p] ,, Uning bo'yi baland va u sportda juda yaxshi " gapiga

e’tibor qaratadigan bo’lsak, bu gapni o’zbek tiliga tarjiam qilish jarayonida bo’y uchun berilgan raqam bildiruvchi son umumlashtirib ketilgan, ya’ni „six feet” birikmasi „baland “ so’zi bilan ifodalangan. „ There are about two million guys in Manhattan. She could go out with any of them. Why does she want to go out with my school’s Algebra teacher? “[2,10-p] „ Manhettonda shuncha odam bo’la turib, onam nega aynan mening algebra o’qituvchim bilan uchrashyapti ?“ Ushbu gapda ham leksik transformatsiyaning umumlashtirish turidan foydalanildi. Gapda qo’llanilgan „about two million guys “ birikmasi „shuncha odam’’ birikmasiga o’zgartirildi, ya’nikim raqamda bildiruvchi so’z umumlashtirildi. Leksik transformatsiyaning uchinchi turi bu ikki hodisa o’rtasidagi mantiqiy aloqaga asoslanadi. Ulardan bittasi asliyat matnini atasa, ikkinchisi uning tarjima varianti deb hisoblanadi. Bu transformatsiya matnda tasvirlangan vaziyatning semantik hamda mantiqiy tahlilini talab etadi.[4, 112-p] Quyida keltirilgan gap ushbu fikrimizga izoh bo’ladi: „ I went into the kitchen early this morning. My mom was there, and she was making pancakes! “[2, 12-p] „ Men erta tongda barvaqt oshxonaga kirganimda onam u yerda quymoq pishirayotgan edi. “ Keltirilgan gapni so’zma-so’z tarjima qilganimizda „ Men ertalab barvaqt oshxonaga kirdim. Onam u yerda edi va quymoq pishirayotgan edi,- “ degan tarjima kelib chiqadi. Ko’rinib turganidek, gapdagi ayrim bo’laklar ortiqcha hisoblangani bois ushirib qoldirilgan va ikkita gap bitta gapga aylantirilgan.

## XULOSA

Asliyat tilidagi ibora, gap, matn yoki butun boshli asarni ikkinchi tilga to’g’ri va mukammal tarjima qila olish ham bir mahorat aslida. Tarjima qilinayotgan asardagi voqea hodisalarni, his-tuyg’ularni, kechinmalarni xuddi o’sha asardagidek qilib o’quvchi qalbiga yetkazish hamma tarjimonlarning ham qo’lidan kelavermaydi. Buning uchun tarjimondan mukammal so’z boyligi, mas’uliyat va kuchli bilim talab qilinadi. Chunki boshqa bir tildagi asar mazmuni, uning so’zlari o’sha millatning urf-odatlaridan, madaniyatidan kelib chiqqan holda yaratiladi. Tarjimon esa tarjima qilayotgan millat tiliga uning urf-odatlari, madaniyatidan kelib chiqqan holda asarni asliyat tilidan ikkinchi tilga o’giradi. Shuning uchun tarjimon mas’uliyatli va o’z ishining ustasi bo’lmog’i lozim. Asarni tarjima qilib boshlashdan oldin o’sha asarning kelib chiqishini, muallifining hayoti va ijodini, ilgari yozgan asarlarini va shu asarning tarbiyaviy ahamiyatini o’rganib chiqmog’i darkor.

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# THE ROLE OF PLASMAPHERESIS IN THE TREATMENT OF ACUTE RADICULONEUROPATHY SYNDROME: MECHANISMS AND EFFECTIVENESS

***Usmonov U.R. Teshaeva D.Ch.***
*Bukhara State Medical Institute*

**Abstract:** This review examines the important role of plasmapheresis in the treatment of acute radiculoneuropathy syndrome (ARN). ORN is a neurological disease characterized by inflammation and degeneration of peripheral nerves. Plasmapheresis, as a procedure for purifying plasma from the blood, plays a key role in reducing the concentration of harmful antibodies and inflammatory mediators, which helps slow the progression of neuropathy and improve the clinical symptoms of acute respiratory failure. The potential effectiveness of plasmapheresis in the treatment of ARF is confirmed, but further research is needed to optimize its use and increase understanding of the mechanisms of action.

**Key words:** plasmapheresis, acute radiculoneuropathy syndrome, peripheral nerves, antibodies, inflammation, treatment effectiveness.

***Acute radiculoneuropathy syndrome (ARN)*** is a neurological disease characterized by inflammation and degeneration of peripheral nerves. This condition can present with a variety of symptoms, including pain, numbness, weakness and paralysis. Treatment of ORN is a challenge for the medical community, and one method that is gaining attention is plasmapheresis.

***Plasmapheresis is*** a procedure aimed at purifying plasma from the blood in order to remove harmful factors such as antibodies circulating in the blood. In the context of ORN, plasmapheresis may play a key role in reducing inflammation and suppressing the immune response that can lead to peripheral nerve damage.

The mechanism of action of plasmapheresis in acute respiratory failure is based on the removal of pathogenic antibodies and other inflammatory mediators from the blood. Reducing their concentrations in the blood can help slow the progression of neuropathy and improve clinical symptoms in patients.

**Method for studying** the role of plasmapheresis in the treatment of acute radiculoneuropathy syndrome: mechanisms and effectiveness.

**Purpose of the study:** To evaluate the effectiveness of plasmapheresis in the treatment of acute radiculoneuropathy syndrome and analyze its mechanisms of action.

**Subject of the study:** Patients diagnosed with acute radiculoneuropathy syndrome undergoing plasmapheresis treatment.

**Material and method:**

1. Patient Selection: Patients diagnosed with acute radiculoneuropathy syndrome will be selected according to clinical criteria, including symptoms and results of additional testing (eg, electromyography).

2. Grouping: Patients will be randomly divided into two groups: an experimental group that will receive plasmapheresis treatment in combination with conventional therapy, and a control group that will receive conventional treatment alone.

3. Plasmapheresis: Patients in the experimental group will undergo plasmapheresis using standard protocols and equipment.

4. Evaluate effectiveness: Clinical parameters (eg, pain level, muscle strength, range of motion) and the results of additional studies (eg, electromyography) will be assessed before treatment, after each plasmapheresis session and at the end of the course of treatment.

5. Statistical Analysis: The obtained data will be analyzed using appropriate statistical methods to compare the results between the experimental and control groups.

Expected Results: Plasmapheresis in combination with conventional therapy is expected to result in more rapid improvements in clinical parameters and electrophysiological parameters in patients with acute radiculoneuropathy syndrome compared with controls.

**Conclusion** The proposed research methodology will allow us to evaluate the role of plasmapheresis in the treatment of acute radiculoneuropathy syndrome and to better understand its mechanisms of action and effectiveness.

This is only an example of the study methodology, and specific details may vary depending on goals, available resources, and patient characteristics.

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# INGLIZ VA O'ZBEK TILLARIDA TURIZM ATAMALARI O'XSHASHLIKLARI

***Isroil Abdalimov***
*Guliston davlat universiteti tayanch doktoranti*
*E-mail: abdalimovisroil@gmail.com*
*Tel: +998994739601*

**Annotatsiya**. Ushbu maqolada ingliz va o'zbek tillarida turizm atamalari o'xshashliklari hamda bugungi kunda jahon xalqlarining tili, tarixi, turmush tarzi, urf-odat va an'analari hamda milliy-madaniy o'ziga xosligining universal o'rganish uchun o'sha davlatni tili va madaniyatni bilish darkor buning, uchun albatta sayohat qilish kerak bo'ladi. terminologiyaning rivojlanish tarixi, turizm sanoatining rivojlanish bosqichlari, terminlar yaratilishi va ularni ishlatishning umumiy tamoyillari batafsil tahlil qilingan. Turizm termin tizimining shakllanishi inson kasbiy faoliyatining tegishli sohasi rivojlanishining darajasi bilan belgilab berilgan.

**Kalit so'zlar:** terminologiya, tizim, davr, xalqaro turizm, sayohat, leksik, bosqich, qadryat, iqtisodiyot, siyosat, turizm.

**KIRISH**. Bugungi kunda jahon xalqlarining tili, tarixi, turmush tarzi, urf-odat va an'analari hamda milliy-madaniy o'ziga xosligining universal va differensial holatlarini frazeologizmlar asosida o'rganishga qaratilgan ilmiy tadqiqotlar ko'lami borgan sari kengayib bermoqda. Bu sohada olib borilayotgan tadqiqotlarda inson va til, til va madaniyat masalasi paradigma asosida o'rganishga jiddiy e'tibor qaratilmoqda. Frazeologik birlik tarkibigidagi obrazlar tizimi millat dunyo qarashining shakllarishida uning moddiy, ijtimoiy yoki ma'naviy madaniyati bilan bo'g'liq bo'ladi, shuning uchun ham ular o'sha millatning milliy-madaniy tajribasi, an'analari, urf-odatlari haqida ma'lumot berishi bilan muhim ahamiyatga ega. Dunyodagi har qanday davlat hayotini turizm xizmatisiz tasavvur etib bo'lmaydi. Turizmning esa turlari ko'p. Ularning har biri ahamiyatlilik jihatidan bir-biridan muhim ahamiyatga ega.

Turizm bir-biri bilan muloqotda bo'lgan xalqlar, tillar va madaniyatlarning xilma-xilligi bilan bog'liq bo'lgan, tarjimaga kundalik ehtiyoji muhim bo'lgan sohalardan biridir. Zamonaviy dunyoda muloqot shunchaki muloqot emas, bu o'zaro axborot, resurslar va imkoniyatlar almashinuvidir. Muloqot qilish qobiliyati zamonaviy jamiyatda barkamol rivojlanish qobiliyatiga tenglashtiriladi. Muloqot jarayonida aytilgan so'zlar bizning haqiqatimizni ma'lum bir shaklda shakllantiradi. So'zlarni tanlashda aniqlik va ularning hissiy rangi, suhbatdosh uchun zatiladigan ma'lumotlarning "tozaligi" aloqa jarayoni ishtirokchilariga va atrofdagi voqelikka ta'sir qiluvchi energiya-axborot maydonini tashkil qiladi. Shunday qilib, to'g'ri muloqot jarayoni aniq bo'ladi ulkan ijodiy salohiyatga ega bo'lishi mumkin. O'z

mamlakatingizda bir xil mentalitetga ega odamlar bilan muloqot qilish muloqotning mumkin bo'lgan variantlaridan biridir. Ushbu format o'ziga xos xususiyatlarga ega. Bir tomondan, bir xil mentalitetdagi odam bilan muloqot qilish oson ko'rinishi mumkin, chunki muloqot ona tilida bo'ladi. Ammo, shu bilan birga, bir xil mentalitetga ega bo'lganlar bir-birlarini yanada nozik his qiladilar va natijada ular o'zaro munosabatlardan chuqurroq "saboqlar" olishlari mumkin. Chet elga, mahalliy aholisi boshqa tilda gaplashadigan mamlakatlarga sayohat qilishda muloqot jarayoni, bir tomondan, qiyin bo'lib tuyulishi mumkin, chunki bu chet tilida gapirish uchun bilim, ko'nikma va malakalarni talab qiladi. Biroq, boshqa tomondan, mahalliy aholining boshqa tillari bilan bir qatorda, bu mutlaqo tabiiydir, shuningdek, boshqa mentalitetga ega. Shu munosabat bilan aloqa jarayoni yanada "yuzaki" bo'lishi mumkin. Buning sababi aloqadagi sheriklarning dunyoqarashi, munosabati va qiymatqonunchilik bazasidagi farqlar bo'lishi mumkin. Ammo shu bilan birga, sayohat shunday ajoyib rivojlanish xususiyatiga egaki, buning natijasida odamga o'ziga tashqi tomondan qarash imkoniyati beriladi. Boshqa mamlakatning g'ayrioddiy yangi atmosferasida siz o'zingizning mentalitetingizning o'ziga xos xususiyatlarini, naqshlari va muayyan xatti-harakatlar namunalarini aniq ko'rishingiz mumkin. Xalqaro turizm sohasini o’rganish davomida madaniyatlararo almashinish, uni o’rganish ham yuzaga keladi. Pereyro (2009) fikriga ko'ra, ilmiy adabiyotlarda, shuningdek, turizm bozorida madaniy turizm atamasining 10 ta istiqboli va qo'llanilishini kuzatish mumkin:

1. Madaniy turizm psixosotsial tajriba sifatida;
2. Madaniy turizm madaniyatni bozorga aylantirish jarayoni sifatida;
3. Madaniy turizm nostalgia tendensiyasi sifatida;
4. Madaniy turizm qiziquvchanlik va o'rganish sifatida;
5. Madaniy turizm “boshqaga” o’tish sifatida;
6. Madaniy turizm zamonaviy ziyorat sifatida;
7. Madaniy turizm tarixiy-madaniy diqqatga sazovor joylarni izlash sifatida; 8. Madaniy turizm madaniyat vakillari sanoati sifatida;
9. Madaniy turizm sayohatning o'ziga xos shakli sifatida; 10. Madaniy turizm madaniyatni iste'mol qilishning o'ziga xos usuli sifatida. Ushbu murakkab hodisa so'nggi o'n yilliklarda o'zgardi va madaniy burilish, harakatchanlik, ijodiy burilish va kuratorlik burilishlarini boshdan kechirdi (Richards, 2006; Duxbury & Richards, 2019; Richards, 2021). Madaniy turizmning yangi istiqbollari madaniy turizmning "yaxshi turizm" va "muqobil turizm" kabi oldingi konseptual va axloqiy g'oyasini o'zgartirdi: ⟶ Ijodiy turizmda sayyoh, san'at va hunarmandchilik, badiiy dizayn, oziq-ovqat va gastronomiya, salomatlik, tillar, ma'naviyat, tabiat va mahalliy sport turlarini o'rganishi mumkin bo’ldi; Sayyohlar nuqtai nazaridan madaniyat va tabiat o'rtasidagi ko'proq aloqalar; ⟶ Madaniy turizmni tadbir va festivallashtirish; ⟶ Madaniy turizm sohasida yangi bo'shliqlar va ixtisoslashuvlar mavjud: meros turizmi; oziq-ovqat turizmi; kino turizmi; adabiy turizm; musiqa turizmi, mahalliy turizm; ⟶ Nomoddiy

madaniy merosga ko'proq talab va tajribalarni birgalikda yaratish; madaniy turizm sohasi doimiy ravishda o'zgarib turadi va yangi madaniy yo'nalishlar va kun tartibini o'z ichiga oladi. Ingliz tili va boshqa tillarda turizm atamalarining shakllanishi va rivojlanishi. Xalqaro turizmni rivojlantirish sohada professional muloqotni oshirishga imkon berdi. Turistik sohadagi muloqot jarayonining umumiy ishtirokchilari sayyohlik sohasi mutaxassislari, sayyohlar va mahalliy aholi hisoblanib kelgan. “Turizm” so’zining kelib chiqishi professional turizm tadqiqotchilarini ham, sayohat ishqibozlarining keng ommasini ham qiziqtirgan va ko'pchilik bu atamaning vatani Fransiya deb da'vo qiladilar, boshqalar esa Angliya deb tahmin qilishadi. Bu savolga javob topish uchun turizm mutaxassislari va filologlarning sa’y-harakatlarini birlashtirish zarurdek tuyuladi. Sayohat tushunchasi asosida turizm tushunchasi shakllangan. Bu 19-asrgacha yaratilgan adabiyot sayohat va sayohatchilar haqida. Masalan, qadimgi rus yodgorliklarida sayohat so'zlari 14 -asr matnlarida allaqachon qayd etilgan. Gap turizm va sayyohlar haqida emas, balki sayohat va sayyohlar haqida M.Monten o‘zining “Ocherklar”ida (1580, “Bekorona” bobida) va F.Bekon “Ocherklar yoki axloqiy va siyosiy ko‘rsatmalar”da (inshoda) qayta-qayta eslatib o‘tadi. 1597 "Sayohat haqida") Agar turizm va sayyohlar haqidagi bu tushunchalar o'sha davrlarda mavjud bo'lganida, tegishli so'zlar, albatta, qomusiy olimlarga ma'lum bo'lar va ular tomonidan qo'llanilishi mumkin edi. Ushbu nashr mualliflari tomonidan olib borilgan tadqiqotlar turistik atamalarning paydo bo'lishining quyidagi xronologiyasini qurishga imkon beradi. Tilshunos olimlarning fikricha, sayr, sayohat ma’nosini bildiruvchi tur so‘zi fransuzcha. Ehtimol, u fransuz tilidan ingliz tiliga olingan. 19-asrgacha, katta ehtimol bilan, turist so'zi ingliz va fransuz adabiy tillarida mavjud emas edi. "Le Nouveau Petit Robert" lug'atida birinchi navbatda fransuz tilidan ingliz tiliga o'zlashtirilgan tur otiga asoslanib, sayohatni amalga oshiruvchi shaxsning ismi turist sifatida paydo bo'lganligi haqida xabar berilgan. Uning birinchi yozma yozuvi 1800 yilga to'g'ri keladi 1803 yilda bu so'z fransuz yozma nutqiga o'tdi. Ingliz va fransuz tillarida "sayohat" degan ma'noni anglatuvchi tourism va tourisme nominatsiyalari ancha keyin paydo bo'lgan. Ingliz va fransuz manbalarida turizm leksemasining ingliz tilida paydo bo‘lishi XIX asr boshlariga to‘g‘ri keladi. (1805-1815). Va bu so'z frantsuz tiliga ingliz tilidan keyinroq kirdi. Har holda, u yozma shaklda faqat 1841 yildan beri ma'lum. Demak: tur – fransuzcha, turist – inglizcha, turizm – inglizcha so‘z. Turizm so’zining butun sayyora bo'ylab tez tarqalishiga va shu bilan birga turizm atamasining paydo bo'lishiga 1841 yilda Angliyada Frantsiya, Italiya, Misr, AQSh va boshqa mamlakatlarga sayohatlar uyushtirgan Tomas Kuk sayyohlik idorasining tashkil etilishi yordam berdi. Bir necha yil ichida Tomas Kukning izdoshlari paydo bo’ldi. 19-asrning oxiriga kelib ko'pgina Yevropa mamlakatlarida turizm xizmatlarini ko'rsatishga ixtisoslashgan agentliklar yaratildi. 19-asr oxirida Yevropa va AQShda sayyohlar soni yuz mingdan ortiqni tashkil etdi. Tomas Kuk va Son sayyohlik agentligining o'zi 1867 yilda butunjahon ko'rgazmasi uchun Parijga 20 mingdan ortiq

inglizlarni yubordi. Umuman olganda, ko'rgazmaga turli mamlakatlardan 9 millionga yaqin kishi tashrif buyurdi. Shunday qilib, turizm so'zi tezda butun dunyoga tarqalib, xalqaro atama maqomini oldi. Turist va turizm tushunchalarining Yevropa tillarida aks etishi: Turist va turizm so'zlari: турист, туризм - rus tilida, tourist, tourism - ingliz tilida, turisto, turismo- ispan tilida, turiste, tourismo- italiyan tilida, touriste, tourisme - fransuz tilida. O‘zbek tilida turizm atamalarining shakllanishi va rivojlanishi. O‘zbek tilidagi turizm terminologiyasi shakllanish bosqichida bo‘lib, turizm sohasining rivojlanishi natijasida uning tarkibi boshqa maxsus bo‘linmalar bilan boyib bormoqda. O‘zbekiston Respublikasi Oliy Majlisining 1999-yil 20-avgustda “Turizm to’g’risida Qonun ” qabul qilinishi ham mamlakatimizda turizmga qaratilgan Turizmning vatani Angliya bo‘lganligi va ingliz atamalarining xalqaro terminologiyada yetakchi mavqeini egallaganligini hisobga oladigan bo‘lsak, o‘zbek tilidagi turistik atamalarning ko‘proq foizini inglizcha so‘zlar tashkil etishi tabiiy. “Til va jamiyat bir-biri bilan chambarchas bog‘liq bo‘lib, jamiyatda sodir bo‘ladigan barcha o‘zgarishlar uning tilida o‘z ifodasini topadi. Bu esa, o‘z navbatida, til qatlami lug‘atini yangi leksik (frazeologik) birliklar bilan boyitishini ta’minlab, lingvomadaniy muhitda barqaror rivojlanishni ta’minlaydi. O‘zbek tilining turistik terminologiyasining shakllanishi va rivojlanishida quyidagi nonlingvistik omillar muhim ahamiyat kasb etadi :

1. Turizmga e’tiborni davlat siyosati darajasiga ko‘tarilishi; 2. Turistlarni jalb qilish uchun turizm salohiyatining mavjudligi; 3. Jahon hamjamiyatining O‘zbekistondagi tarixiy-madaniy yodgorliklariga qiziqishining ortishi; 4. Turizmga bo’lgan diqqat va talab darajasini davlat siyosati doirasida ko‘tarishi; 5. Turizmni rivojlantirish bo‘yicha qonun, qoida va me’yoriy hujjatlar qabul qilinganligi 6. Turli mamlakatlar bilan turizm hamkorligini rivojlantirilishi; 7. Turizmning yangi turlarining paydo bo'lishi; 8. Turistik zonalarni tashkil etish va rivojlantirishi ; 9. Turistik yo‘l xaritalarining mamlakat iqtisodiyoti tarkibida turizm ulushini oshirish; 10. Turizm sohasida malakali kadrlar tayyorlash bo‘yicha xalqaro hamkorlikni yo‘lga qo‘yilishi ; O‘zbek tilining ichki imkoniyatlaridan kelib chiqib yaratilgan turizm sohasida faol qo‘llaniladigan atamalarga misol sifatida bayram, bojxona, buyurtma, mablag‘, marosim, buyurtma, mozor, taklif, qala, qo‘riqxona, qabulxona, taklif, kabi atamalarni keltirish mumkin. Har bir tilning atama yasalishidagi ichki imkoniyatlari va morfologik xususiyatlaridan kelib chiqib, ayrim affikslar unumli deb hisoblanadi. Ingliz va rus tillaridan farqli o'laroq, o'zbek tilida aynan turistik atamalarni yaratish uchun dominant qo'shimchalar mavjud emas. Vinokur G.O. ta'kidlaganidek: "Qo'shma so'zlar nafaqat yangi so'zlarning ehtiyojlarini qondirish uchun, balki haqiqatan ham bir so'z bilan ikkita tushunchani ifodalash uchun zarurdir. ” Tadqiqot natijalari shuni ko'rsatadiki, xalqaro turizmning ham ingliz, ham o'zbek terminologiyasi umuman olganda tushunchalarni rasmiy ifodalash vositalarining ko'pligi bilan tavsiflanadi, ya'ni bu terminologiyalar sinonim bo'lishga moyildir.

Xulosa qilib aytganda, Prezidentimiz Shavkat Mirziyoyev tomonidan turizmni, rivojlantirishga jiddiy e’tibor qaratilayapti. Bu haqda muhim qarorlar, farmonlar qabul qilinayayapti. Ulardan biri Yurtboshimizning “O’zbekiston Respublikasining turizm sohasini jadal rivojlantirishni ta’minlash chora-tadbirlari to‘g‘risida”gi 2016 yil 2 dekabrdagi PF-4861-sonli farmonidir. Bugun respublikamizning barcha hududlarida mazkur farmon ijrosi yo‘lida bir qator ishlar amalga oshirilayapti. Shaharu qishloqlarimizda barpo etilayotgan biri-biridan shinam bo‘lgan oshxonalar, choyxonalar va boshqa turdagi ovqatlanish muassasalarida yaratilayotgan qulayliklardan, bunday muassasalarning jihozlanishidan ko‘ngil to‘ladi, xalqimiz madaniyati, ma’naviyati oshib borayotganidan ko‘ngillarda quvonch paydo bo‘ladi. E’tibor qilganlar yaxshi bilishadi. Gastronomik turizmga aloqador ishlarga bugun shaharlarga nisbatan qishloqlarda e’tibor oshib borayapti. Buni biz davlatlar ahamiyatidagi katta magistral yo‘llar bo‘ylarida, viloyatlararo yirik ko‘chalar bo‘ylarida bunyod etilayotgan ko‘plab ovqatlanish shoxobchalari misolida ko‘rishimiz mumkin. Bunda albatta ingliz va o'zbek tillarida turizm atamalari o'xshashliklari alohida ahamiyat kasb etadi.

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# АСПЕКТЫ ИЗУЧЕНИЯ ЯЗЫКОВОЙ ИГРЫ

***Б. Абдулхаева,*** *стажёр-преподаватель*
*Кафедры русского языка Наманганского государственного университета, г. Наманган, Узбекистан*

**Аннотация**: В данной статье мы рассматриваем языковую игру как преднамеренное нарушение нормы языка или языкового стандарта в целях создания стилистического эффекта, т.е. определенной эмоциональной реакции у адресата.

**Ключевые слова**: языковая игра, речевая ошибка, художественный текст.

**Abstract:** In this article, we consider a language game as a deliberate violation of a language norm or locale in order to create a stylistic effect, a certain emotional reaction from the addressee.

**Key words:** language game, speech error, literary text.

Предметом изучения лингвистики *языковая игра* является сравнительно с недавнего времени. Однако в ряде лингвистических работ, посвященных изучению феномена языковой игры в художественном тексте, подчеркивается, что её ведущей целью является акцентирование внимания читателя на определённых моментах текста с помощью языковой шутки, юмора, смеха. В основу языковой игры кладутся самые различные лингвистические явления: каламбуры, окказионализмы, контаминации, парадоксы, аллюзии. И вследствие такой неоднозначности языковой игры её интерпретируют по-разному.

Анализ современных лингвистических исследований позволяет выделить два разных направления в понимании явления *языковой игры*.

*Первое направление* представлено работами, реализующими *расширительную трактовку* категории «языковая игра». Так, в частности, Людвиг Витгенштейн в 1953 году для описания языка как системы условных правил, в которых принимает участие говорящий, вводит понятие **языковой игры**. Ученый отмечает:«Термин языковая игра» призван подчеркнуть, что говорить на языке — компонент деятельности, или форма жизни. <…> Языковой игрой я буду называть <…> единое целое: язык и действия, с которыми он переплетен» [3, с. 7]. Другими словами, по его убеждению, не только язык, но и сама жизнь включается в эту игру, так как человек воспринимает ее главным образом через призму языка.

*Второе направление* свидетельствует о сугубо лингвистической интерпретации этого явления. При этом языковая игра и ее отдельные формы анализируются на самом разном языковом материале и с разных точек зрения (см. работы Е. А. Земской, Н. Д. Арутюновой, Т. А. Гридиной, А. Вежбицкой, Т.

А. Букиревой, Э. М. Береговской, З. С. Санджи-Гаряевой, В. З. Санникова и мн. др.). Таким образом, определилось два понимания языковой игры: *широкое* – логико-понятийное и *узкое* – собственно-лингвистическое.

Позже,подвергнув критике *широкое* понимание Л. Витгенштейна о невозможности установления границ понятия «игра», А. Вежбицкая заявляет, что границы существуют и выявляет ее языковую природу: «На самом деле границы существуют, причем в разных языках они проведены по-разному, и носитель языка интуитивно знает и соблюдает эти границы» [2, с. 214]. Иначе говоря,А. Вежбицкой выявлен важнейший фактор – понятие границы и ее нарушения. Важно подчеркнуть, что это относится к пониманию языковой игры как в логико-понятийном, так и собственно лингвистическом аспектах. В рамках данного исследования особенно важно то, что, рассуждая об игре в логико-понятийном плане, А. Вежбицкая имеет в виду нарушение границ нормативности в *стереотипах языкового сознания*.

Исследование границ нормативности в логико-понятийном плане осуществлено и Н. Д. Арутюновой. По ее мнению, нормативность не дана в непосредственном наблюдении, а осознается на фоне ненормативности, что позволяет лучше понять и систематизировать свои знания о ненормативности.

*Узкое* понимание языковой игры, основанное на изучении приемов использования языковых средств, в русском языкознании получило развитие после публикации одноимённой работы Е. А. Земской, М. В. Китайгородской и Н. Н. Розановой. Так, в частности, некоторыми учеными языковая игра рассматривается как *лингвистический эксперимент*. Следует отметить, что еще в 20-е годы XX века ведущими русскими лингвистами А.М.Пешковским и Л.В. Щербой подчеркивалась важная роль метода лингвистического эксперимента для русского языка: «В возможности применения эксперимента и кроется громадное преимущество — с теоретической точки зрения — изучения живых языков» [7, с. 27].

Со временем термин «языковая игра» получил несколько иную трактовку: под *языковой игрой* понимается *осознанное нарушение нормы*. При таком подходе языковая игра противопоставляется языковой ошибке.

В. З. Санников подчёркивает, что *языковая игра* – это *неправильность*, которая специально допускается писателем. Он же рассматривает языковую игру применительно только к литературному языку и подчеркивает, что она «основана на знании системы единиц языка, нормы их использования и способов творческой интерпретации этих единиц» [6, с. 15]. Языковая игра выступает как своеобразный вид комического, но комизм – не единственная функция данного приёма. Языковая игра может использоваться:

1. Как реализация эмоциональной функции языка, целью которой является выражение отношения говорящего к содержанию собственного сообщения;

2. Как средство «смягчения» речи, отстранять чрезмерную серьёзность тона;

3. Может быть связана с содержанием речи в ситуации более точной и чёткой передачи мысли, для образной передачи сообщения;

4. Может иметь изобразительный характер, показывающийязыковой образ человека, слова которого передаёт говорящий, либо для наглядного изображения ситуации общения.

Исходя из этого, Е.Земская, М.Китайгородская, Н.Розанова выделяют два типа языковой игры:

1) *балагурство* – языковая игра, которая не обусловлена содержанием сообщения, берёт начало в народной смеховой культуре, когда шуткой называли всё необычное, низкое, грубое;

2) *остроумие* – необычная форма сообщения, связанная с более глубоким выражением мыслей говорящего .

Языковая игра имеет ряд приёмов: неологизмы, игра слов (каламбур), графическая игра. Кроме того, языковая игра, как и любая другая игра, осуществляется по правилам:

– наличие участников игры – создателя художественного текста и читателя;

– наличие игрового материала – языковых способов, которые использует автор;

– знакомство участников с правилами игры, которые выражаются в контексте. Контекст – ситуация, которая помогает читателю правильно понять текст, чтобы намеренная ошибка не вызвала удивления и разочарования;

– поведение участников, которое отвечает условиям и правилам игры.

На сегодняшний день в современной научной литературе существуют различные трактовки термина *языковая игра*. В частности, «Стилистический энциклопедический словарь русского языка» определяет языковую игру как «определенный тип речевого поведения говорящих, основанный на преднамеренном (сознательном, продуманном) нарушении системных отношений языка, т.е. на деструкции речевой нормы, с целью создания неканонических языковых форм и структур, приобретающих в результате этой деструкции экспрессивное значение и способность вызывать у слушателя / читателя эстетический и, в целом, стилистический эффект».

В.З. Санников, анализируя семантические, синтаксические и прагматические характеристики языковой игры на различных языковых уровнях, предлагает следующее определение: «Языковая игра – это некоторая неправильность (или необычность), осознаваемая и намеренно допускаемая говорящим»[6, с. 22]. Е.М. Александрова также определяет языковую игру как «осознанное и целенаправленное использование экспрессивных ресурсов речи, имеющее установку на создание комического эффекта». Автор относит языковую игру к асистемным явлениям языка, отмечая, что в феномене языковой

игры пересекаются эволюция языка и креативные способности носителей языка. Ученые выделяют такие лингвистические свойства приемов языковой игры, как условность, искусственность, вторичность, ассоциативность, способность являться заместителем важной информации, акцентуальность, рематичность, ассоциативность, индивидуальность.В. З. Санников, Б.Ю. Норман, Т. А. Гридина и др., характеризуя языковую игру как сложный и многоплановый феномен, отмечают, что языковая игра высвобождает творческий потенциал носителя языка, приносит ему эстетическое удовлетворение, предоставляет возможность отрегулировать отношения с собеседником, а также продемонстрировать определенную степень творческой свободы. Исследователи подчеркивают идею теорию самовыражения, к которому стремится любой человек во всех своих делах и занятиях, развивают концепцию «человека играющего» Й. Хейзинга, убедительно показавшего, что ключевая роль в происхождении и формировании человеческой культуры и цивилизации принадлежит игровому фактору.

Обобщая возможные трактовки языковой игры, можно сделать вывод о недостаточности чисто лингвистического изучения языковой игры и о необходимости более широкого, междисциплинарного подхода к ее исследованию.

Итак, к ключевым аспектам языковой игры можно отнести реализацию творческого потенциала языковой личности и ее языковой компетенции, что проявляется в сознательном нарушении нормативных отношений в системе языка, а также установку на достижение определенного стилистического (эстетического, комического) и прагматического эффекта.

В последние десятилетия все более востребованным становится взгляд на языковую игру с позиций когнитивной лингвистики, а именно когнитивных механизмов продуцирования и восприятия комического. В.З. Санников в монографии «Русский язык в зеркале языковой игры» описывает две теории, объясняющие взаимодействие между двумя составными компонентами языковой шутки как словесной формы комического: теорию обманутого ожидания и теорию комического шока. Теория *обманутого ожидания* подразумевает контраст между ожиданиями субъекта (основанными на его жизненном опыте) и конечной реализацией: в этом случае представленное в шутке явление, кажущееся естественным, далее демаскируется как абсурд и дискредитируется. В шутках, построенных на комическом шоке, напротив, внешне удивительное оказывается естественным и понятным. В зарубежной лингвистике теорию механизмов восприятия шуток, тексты которых традиционно состоят из двух структурных элементов – зачина и кульминации, разработала М. Дайнел. Согласно данной теории, существует три основных лингвокогнитивных механизма продуцирования и восприятия юмора, реализуемые в комических текстах шутки: механизм садовой дорожки, механизм

перекрестка, механизм красного света светофора. Так, механизм садовой дорожки (gardenpathmechanism) предполагает, что в зачине шутки реципиент воспринимает одно, очевидное значение, в кульминации же актуализируется иное значение, полностью отменяющее первоначальную интерпретацию. Суть механизма перекрестка (crossroadmechanism) заключается в невозможности спрогнозировать дальнейший ход шутки, поскольку в зачине шутки присутствует абсурдный элемент, никак не поддающийся интерпретации, таким образом, «реципиент как бы находится на перекрестке нескольких альтернативных направлений». Особенностью шуток, реализующихся посредством механизма красного света светофора (redlightmechanism), является то, что центральное противоречие возникает лишь в кульминационной части шутки и там же разрешается. Наиболее известной из теорий вербального юмора, разработанных в современной зарубежной лингвистике, является семантическая теория юмора В. Раскина, которая позднее была дополнена и переработана С. Аттардо в общую теорию вербального юмора. Базовым положением вышеуказанных теорий является разрешение неоднозначности, или «мотив разрешения противоречия (incongruity-resolution)», а одним из основополагающих понятий выступает понятие бисоциации, введенное А. Кестлером. Бисоциация определяется как «неожиданное столкновение в акте творчества двух совершенно различных «матриц» (ситуаций, планов), которые представляют одно и то же явление, но относятся к разным (далеким друг от друга) областям человеческих знаний или опыта». В работах В. Раскина и С. Аттардо понятие бисоциации стало трактоваться как «ситуация пересечения в сознании воспринимающего двух независимых, но логически оправданных ассоциативных контекстов», приводящая к «когнитивному диссонансу», стимулирующему смех . В основе комического эффекта, по В. Раскину, лежит не простое взаимодействие языковых средств, а столкновение двух противоположных по значению контекстов: реальная / нереальная ситуация, обычная / необычная ситуация, возможная / невозможная ситуация. Подобные контексты в теории В. Раскина называются скриптами и определяются как «когнитивные структуры, существующие в сознании носителя языка и отражающие фрагменты знания о каких-либо явлениях окружающего мира». Основываясь на семантической теории юмора В. Раскина, С. Аттардо в рамках общей теории вербального юмора разработал шесть параметров, на основе которых можно проанализировать любую комическую ситуацию или текст. К этим параметрам ученый относит подходах к изучению языковой игры дующие: оппозиция скриптов (scriptopposition), логический прием или механизм, на котором строится комический эффект (logicalmechanism), ситуация, описанная в комическом тексте (situation), объект высмеивания (target), нарративная стратегия (вопросно-ответная форма, форма рассказа и т.п.) (narrativestrategy),

стилистические особенности языка комического текста (language). При этом центральным параметром, по мнению Д.В. Казаковой, является оппозиция (противопоставление) скриптов, благодаря которой и возникает противоречие, которое разрешается далее с помощью логического механизма – логической операции, необходимой для разрешения данного несоответствия. И.И. Косинец, изучая языковую игру на материале текстов русских и английских анекдотов, приходит к закономерному выводу, что к шести параметрам, выделенным С. Аттардо, стоит добавить еще один критерий – культурологическую информацию, учет которой необходим при анализе отсылок к прецедентным личностям и фактам в анализируемом тексте. Сходная мысль о том, что языковая игра – это не просто комплекс приемов, но «носитель этнокультурной информации», звучит и в монографии Ю.О. Коноваловой. О.И. Быкова высказывает похожую точку зрения, согласно которой языковая игра (в частности, на уровне словообразовательной деривации компонентов сложных слов) является наиболее продуктивным способом актуализации этнокультурномаркированных коннотаций. На наш взгляд, именно этнокультурологический компонент – дополнительный критерий при анализе комической ситуации или текста, который мы предлагаем обозначить как этнокультурное своеобразие языковой картины мира (culture) – обеспечивает уникальность и оригинальность языковой игры, способствует раскрытию еелингвокультурной специфики, но, вместе с тем, и вызывает определенные трудности как при декодировании заложенного смысла в исходном языке, так и при его передаче в переводе средствами другого языка. По нашим наблюдениям, наиболее ярко этнокультурологический компонент прослеживается в тех случаях, когда языковая игра основана на окказиональных преобразованиях фразеологических единиц и устойчивых языковых оборотов.

*Языковая игра* – термин, в который разные авторы вкладывают подчас не вполне одинаковое содержание, что объясняется сложностью данного феномена. В настоящем исследовании *языковая игра*, вслед за А. П. Сковородниковым, рассматривается как «творческое, нестандартное (неканоническое, отклоняющееся от языковой/стилистической/ речеповеденческой/логической нормы) использование любых языковых единиц и/или категорий для создания остроумных высказываний, в том числе – комического характера» [6, с. 388-389].

Зачастую языковая игра строится на использовании *прецедентных текстов*, отсылая адресата к «коллективной памяти» народа, вынуждая его дешифровать оставленное сообщение.

Термин «прецедентный текст» был введен в научный обиход Ю. Н. Карауловым. По мнению ученого, *прецедентными* являются тексты, значимые для личности в познавательном и эмоциональном отношениях, хорошо известные ее широкому окружению, обращение к которым возобновляется

неоднократно в дискурсе данной языковой личности [5, с. 216].

В зависимости от объема передаваемой информации выделяются такие разновидности прецедентных феноменов, как *прецедентный текст*, *прецедентное высказывание*, *прецедентная ситуация* и *прецедентное имя* [4, с. 226].

Итак, *языковая игра* – это *осознанное отступление от нормы*. Учёные объясняют данный феномен стремлением к выразительности речи. Языковая игра помогает реализовать творческие замыслы писателей при помощи высвобождения дополнительных экспрессивных возможностей, и именно поэтому они так часто обращаются к приёму игры.

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# APPLICATION OF GRINDING PROCESS OF LARGE MODULE GEAR WHEELS WITH FINGER ABRASIVES STONE

***Suratjon Nuriddinov***
*Student, Navoi State Mining and Technologies Universities*
*prof.* ***Bakhtiyor Mardonov***
*Navoi State Mining and Technologies Universities*

**Annotation.** A copy transfer method using toothed the wheels grinding , processing to give of the process stability despite the tooth profile across cutting depth uneven being , this of the process efficiency reduces Real cutting in the depths differences tooth involute profile across down , they again processed the work to the surface moved . of the process technology with depends processing to give error appear it has been . Polishing conditions improve and processing to be given of the teeth quality improve for to him effect doer factors control to do through real cutting of depth stability provide need Offer being carried out the instrument analysis to do based on tooth profile across cutting depth relatively one different distribution provide through thought out to the result achieved shown .

**Key words :** cutting depth, copy grinding, teeth grinding, fingered abrasive touchstone, profile, attempt.

Competitiveness provide for in technology wide applied modern toothed transmissions mainly, gear the wheels work release quality with determined high work indicators have to be need

Geared of wheels teeth copy the way with grinding , this high accuracy and processing to give quality which provides and products make up the most efficient and reliable technologies is one This method using grinding next door the wheel teeth between of space to the profile complete suitable coming to the profile have has been fingered using an abrasive stone done increased Processing to give for permission done surface purity Ra = 0.6...0.7 mm. Polishing three or four in transition done increased


**Figure 1. Fingered abrasive stone views**

Technological of factors cutting to the depth effect determination for copy transfer method using teeth again work for surface cleanliness with research was conducted . Experience as a result It was found that the tooth in the parameters errors cause emits of reasons one processing given of surfaces elementary in places real cutting of depth uneven distribution is considered

That's why we are the first in line tooth outline analytical dry we went out

Geared do not pass contour tooth again work for his separately points tooth outline coordinate of the {0} ordinate in the system arrow the wheel your teeth A is the starting point of the contour from the point passable with to be determined need (Figure 2)

$$i = 1. . . n. \quad (1)$$

Contour consecutively of points radii the following from Eq determination possible (Fig. 1):

$$\frac{d_i}{2} = \frac{d_b}{2} + \frac{d_a - d_b}{2(n-1)}(i-1),$$

Contour of i-point diameter and of contour corners as follows is expressed .

$$\alpha^{(i)} = \cos^{-1}\frac{d_b}{d_i}$$

where a $^{(i)}$ - profile of the involute desired at the point profile corner

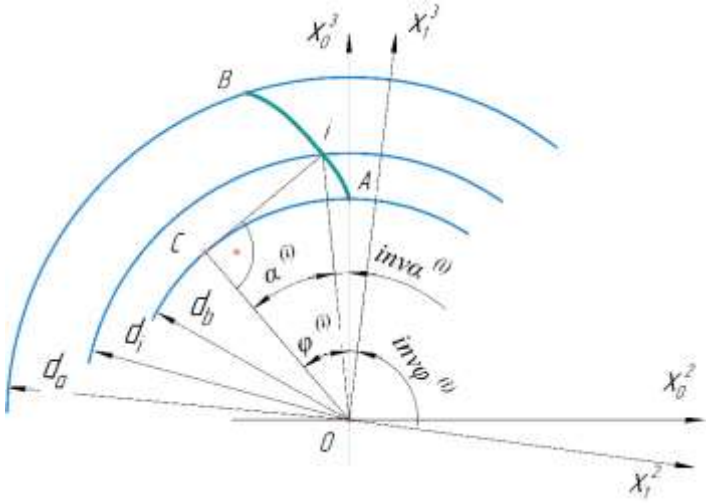



**Figure 2. Tooth outline : tooth the left side of the profile .**

Ordinate arrow and attempt of the point radius between corner this at the point main circle with the normal on the contour is as follows is expressed (Fig. 2):

$$\varphi^{(i)} = \alpha^{(i)} + \text{inv}\alpha^{(i)} = tan\alpha^{(i)},$$

φ - ( i ) at the point contour radius and attempt point radius between corner

Finally , the coordinates {0} and {1} are shown in Figure 1 in systems tooth left side of profile for tooth of the outline desired of the point coordinates as follows writing can :

$$x_0^{2(l)} = \frac{d_b}{2}(\sin(-\varphi^{(i)}) + \varphi^{(i)}\cos(-\varphi^{(i)})),$$

$$x_0^{3(l)} = \frac{d_b}{2}(\cos(-\varphi^{(i)}) - \varphi^{(i)}\sin(-\varphi^{(i)})),$$

$$x_1^{2(l)} = x_0^{2(l)} \cos\varphi_0 - x_0^{3(l)} \sin\varphi_0,$$
$$x_1^{3(l)} = x_0^{2(l)} \sin\varphi_0 + x_0^{3(l)} \cos\varphi_0,$$

The tooth contour equation for the left side of the tooth profile looks like this:

$$r_1^{(r)} = r_1^{(r)}(\varphi, u) = \left[u, \frac{d_b}{2}(\sin(\varphi + \varphi_0) - \varphi cos\,(\varphi + \varphi_0)), \frac{d_b}{2}(\cos(\varphi + \varphi_0) + \varphi sin\,(\varphi + \varphi_0))\right]$$

Involute outline so is characterized by its normals basis around touching stands That is , the contour consecutively for points (L. i ). circle so rotate maybe the main one circle (dot. C) with normal contact to the involute points always of the basis intersection at the point will be (Figure 3)

From this come it turns out that it is vertical to the arrow have , processing to be given to the outline try , in a row points for toothed horizontal from the arrow constant in the distance is installed and only his horizontal bullet direction according to shift will change .

Vertical milling on the RDB machine each of the plane for cross-section ( $d_b/2$). diaper circle in radius toothed of the screw vertical from the plain $x_f$ exclusion in the distance horizontal rotation arrow across placement need Geared wheel ε angle under is converted .

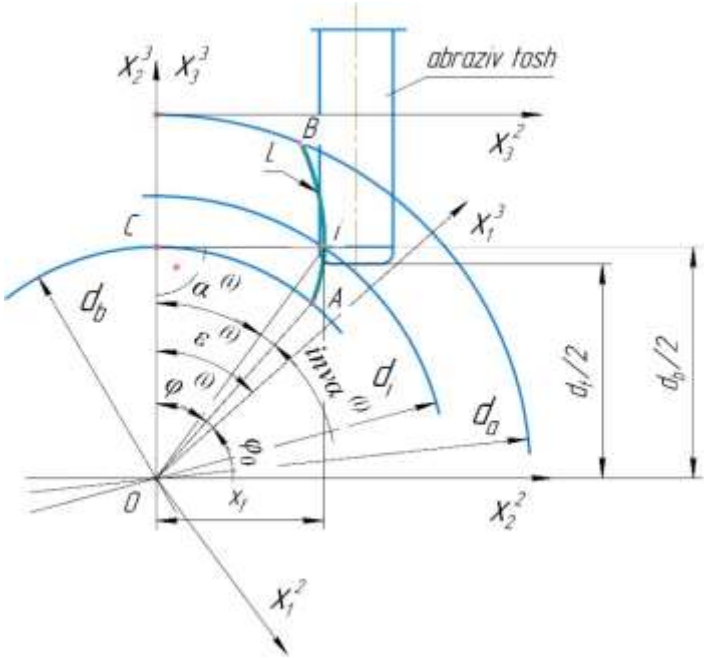



**Figure 3. Processing to give in the process fingered abrasive stone tool installation**

Normal horizontal of tooth profile to the situation suitable coming tooth turning corner to the following equal to :

$$\varepsilon^{(i)} = \varphi_0 + \alpha^{(i)} + \text{inv}\alpha^{(i)} = \varphi_0 + tan\alpha^{(i)},$$

Here $e^{(i)}$ - at the i-point the profile sharpening for tooth rotation corner

As shown in Figure 3 , the left tooth profile contour ( right tooth contour ) for this as follows to express can :

$$x_2^{2(il)} = x_1^{2(il)} \cos \varepsilon^{(i)} + x_1^{3(il)} \sin \varepsilon^{(i)},$$
$$x_2^{3(il)} = -x_1^{2(il)} \sin \varepsilon^{(i)} + x_1^{3(il)} \cos \varepsilon^{(i)},$$
$$x_3^{2(il)} = x_2^{2(il)},$$
$$x_1^{3(il)} = x_2^{3(il)} - \frac{d_a}{2} = \frac{d_b}{2} - \frac{d_a}{2},$$
$$\varepsilon^{(il)} = \varepsilon^{(i)}.$$

Same so , right tooth tooth profile outline for (left tooth profile ) this as follows to express can :

$$x_2^{2(ir)} = x_1^{2(ir)} \cos \varepsilon^{(i)} + x_1^{3(ir)} \sin \varepsilon^{(i)},$$
$$x_2^{3(ir)} = -x_1^{2(ir)} \sin \varepsilon^{(i)} + x_1^{3(ir)} \cos \varepsilon^{(i)},$$
$$x_3^{2(ir)} = x_2^{2(ir)},$$
$$x_1^{3(ir)} = x_2^{3(ir)} - \frac{d_a}{2} = \frac{d_b}{2} - \frac{d_a}{2},$$
$$\varepsilon^{(ir)} = \varepsilon^{(i)}.$$

Your tooth outline is symmetrical . Tooth profile symmetry arrow vertical bullet has been from case x follows is represented by ( angle e practical not because we start determine but we can't tooth profile vertical bullet with symmetrical way suitable coming way our installation can ):

$$x_f = x_3^{2(ir)} = - x_3^{2(il)},$$
$$\varepsilon^{(r)} = \varepsilon^{(l)}.$$

Program and processing to give process . Analysis based on changed of contour coordinates and accordingly respectively toothed processing to give for instrument trajectory to create supportive applications work ( Figures 4 and 5).

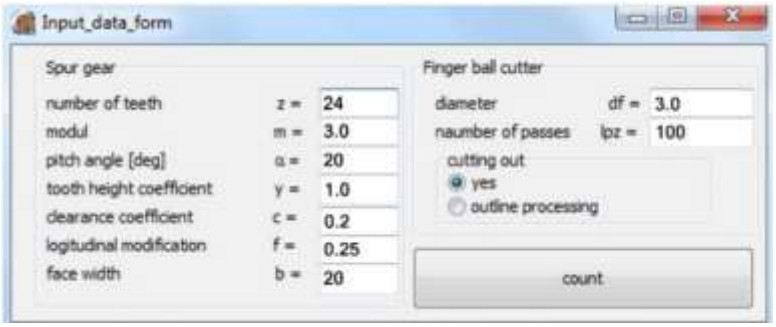
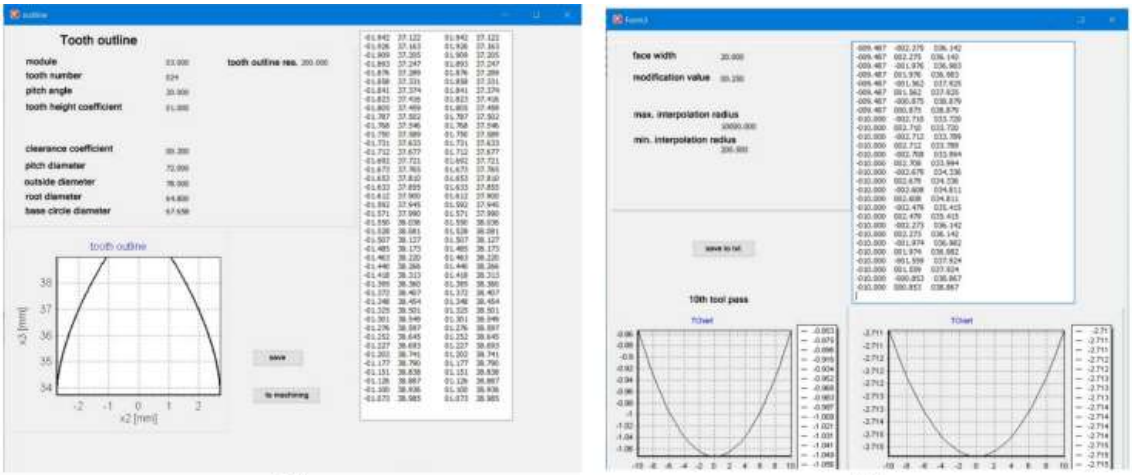


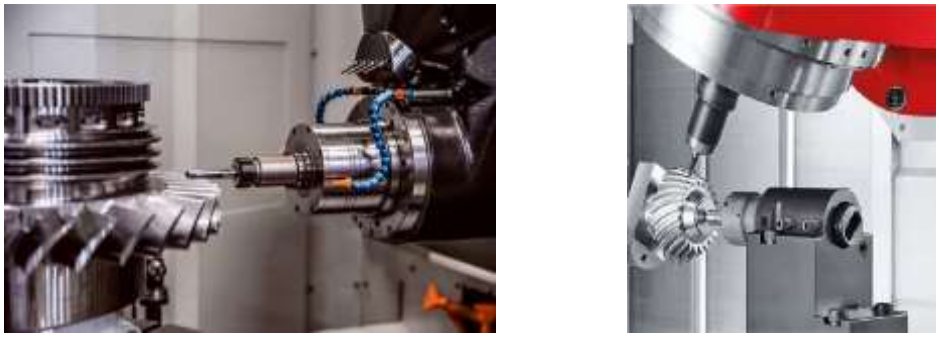

**Figure 4. Software supply module: data input**




(a) (b)

**Figure 5. Software supply module: (a) tooth outline creator program ; (b) instrument trajectory creator software supply .**

Software supply two from the module consists of First in the module main parameters for gear z = 24, m = 3, a = 20◦, c = 0.2, x = 0, y = 1 and guess done of extension modification f = 0.25 mm, modified of contour coordinates discrete writing was created (Fig. 5a). Next stage software supply to the previous one suitable coming instrument trajectory was created (Fig. 5b). Whole created program to the ISO code according to the car manage functions own into takes It is standardized to functions according to programming possible any that are bench to the tool customized to be possible with is universal .



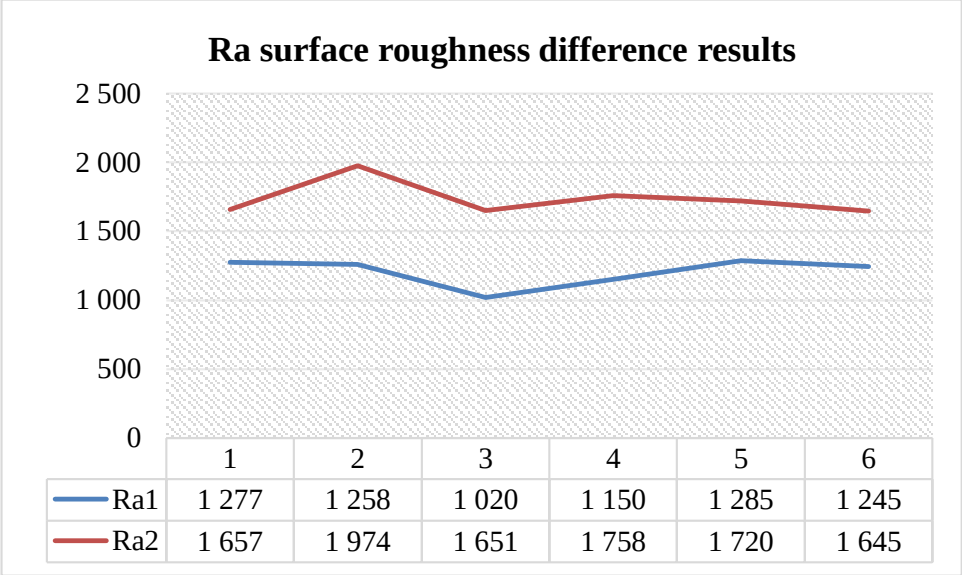
**a) Horizontal b) Vertical**

**Figure 6. Grinding process with finger abrasive stone on RDB milling machines**

A gear wheel was selected, some of its teeth were polished on a vertical RDB lathe with a finger grinding stone, and the rest of the teeth were polished on grinding machines using a disc stone. Later, the surface cleanliness of these teeth was measured using a TIME 3221 digital profilometer. 6 values were taken from 2 different teeth and analyzed.



**Figure 7. Measurement of $R_a$ using TIME 3221 digital profilometer**




| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Ra1 | 1 277 | 1 258 | 1 020 | 1 150 | 1 285 | 1 245 |
| Ra2 | 1 657 | 1 974 | 1 651 | 1 758 | 1 720 | 1 645 |

Summary by doing In other words , we are squealing from machines without using special sparkling fingered abrasive the stone to make through surface cleanliness enough to accuracy reach we got From time to time we win , and from the bench we win , only RDB milling tooth on the machine we opened to him too that's it on the machine grinding their work do it we got

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# QISHLOQ XO‘JALIK EKINLARINI ASALARILAR YORDAMIDA CHANGLATISHNING AHAMIYATI

***Qulmurotov Sohibjon Jumaniyozovich***
*Axborot texnalogiyalari va menejment universiteti*
*“Iqtisodiyot” kaferdirasi assistenti*
*e-mail: sohibkulmurotov@gmail.com*
*Tel: +998972792329*
***Axmadova Feruza Isroil qizi***
*Axborot texnalogiyalari va menejment universiteti*
*“Iqtisodiyot” yo‘nalishi I – bosqich I-115-23 guruh talabasi*

**Annotatsiya:** Ushbu maqolada o‘simliklarning changlatishda asosiy manba bo‘lib xizmat qiluvchi asalarichilik hamda uning changlatishdagi ta’siri haqida so‘z boradi.

**Kalit so‘zlar:** Asalari, gulchangi, o‘simlik, kungaboqar, gul, osimlik changi, changlatish, bedazor.

**Аннотация.** В этой статье рассматривается пчеловодство, которое служит основным источником опыления растений, а также его влияние на опыление.

**Ключевые слова:** Пчелы, пыльца, растение, подсолнух, цветок, пыльца растений, опыление, лютик.

**Abstract.** This article examines beekeeping, which serves as the main source of plant pollination, as well as its effect on pollination.

**Keywords:** Bees, pollen, plant, sunflower, flower, pollen of plants, pollination, buttercup.

## KIRISH

Asalari etti xazinaning biri – deydi xalqimiz. Asalarilar ko‘plab shifobahsh asal, mum, propolis, gulchangi to‘plashi bilan hamda ayni paytda qishloq xo‘jalik ekinlarini, ayniqsa bog‘dorchilik, poliz ekinlari va paxtachilikni rivojlantirishga katta ijobiy ta’sir ko‘rsatadi. Shu boisdan ham, asalarichilik sohasi serdaromad sohalardan biri hisoblanadi. Bugungi kunda O‘zbekistonda asalarichilikka bo‘lgan talab va uning shifobaxsh maxsuloti bo‘lgan asal va asalari mahsulotlari (mum, prapolis, gulchangi (perka), asalari suti va zaxri) etishtirishga oqilona ixtisoslashuvini saqlab qolish, mustaqil Respublikamizning kun sayin bozor iqtisodiyotiga o‘tayotgan davrida iqtisodiyotimizning asosini tashkil etadi.

## TADQIQOT MATERIALLARI VA METODOLOGIYASI

Respublikamiz asalarichilari oldiga har bir asalari oilasining mahsuldorligini oshirish hisobiga asal yetishtirishni ko‘paytirish qat’iy vazifasi qo‘yilgan. Buning uchun har bir asalarichidan va har bir rahbardan, asalari oilasini zooveterinariya

qoidalari asosida parvarishlab, asalarilarni tez-tez serasal o‘simliklar o‘sadigan joylarga ko‘chirib turishni talab qiladi.

Asalarilarning foydali va serdaromad tomonlari shundaki, ular o‘simlik gullarini chetdan changlatish yo‘li bilan ekinlar hosildorligini 10-60 % gacha oshirishga sabab bo‘ladi. Respublikamiz sharoitida esa g‘o‘za, beda va dukkakli o‘simliklar, ozuqabop hamda poliz ekinlari maydonlari kengayib borishi tufayli, qishloq xo‘jalik ekinlarini changlatishda asalarilarning ahamiyati kun sayin ortib bormoqda. Asalarilarning ana shunday beminnat xizmatlarini va u dehqonlarning qanotli yordamchisi ekanligini hisobga olib, hukumatimiz keyinigi yillarda asalarichilikni respublikada yanada rivojantirish to‘g‘risida ko‘pgina qarorlar qabul qildi. Shu munosabat bilan, O‘zbekiston Respublikasi Prezidentining 2017-yil 16 oktyabrdagi “Respublikamizda asalarichilik tarmog‘ini yanada rivojlantirish chora-tadbirlari to‘g‘risida”gi – 3327 sonli qarori qabul qilindi. Bu qaror yordamida respublikamizda asalarichilik bir muncha rivojlandi, uning moddiy-texnika ta’minoti, kadrlar bilan ta’minlash ishlari mustahkamlandi.

Respublikamizning ajoyib tabiati va iqlim sharoiti, qishloq xo‘jaligining barcha sohalari kabi asalarichilikning ham muvoffaqiyatli rivojlantirish imkonini beradi. Cheksiz maydonlardagi o‘tloqlarimiz, rang-barang adiru qirlarimiz, bepoyon paxtazorlarimiz, keng maydonlarni ishg‘ol etgan bog‘ va gulzorlarimiz, asalarilar uchun ajoyib ozuqa manbai hisoblanadi. Shunga qaramay, hozirgi vaqtda xalq xo’jaligi tarmog‘ining rivojlanish salmog‘i, axolining kundan-kunga ortib borayotgan talablariga yetarli darajada javob bera olmaydi. Asalarichilikning qishloq xo‘jalik ekinlari hosilini oshirishdagi ahamiyati yanada katta. Ma’lumki, dunyodagi 80% gulli o‘simliklar, chetdan changlanadilar. Ana shu o‘simliklarning chetdan changlanishida, asalarilar asosiy rol o‘ynaydi, chunki boshqa xil changlatuvchi hasharotlar soni juda kam va ularni kerakli paytda ekinlarni changlantirishga ko‘chirib bo‘lmasligi tufayli, asalarilar bunga juda mos keladi. Asalarilardan xohlagan paytda, kerakli o‘simliklarni chetdan changlantirishda foydalanish mumkin. Asalarilar tufayli chetdan changlanadigan beda va dukkakli o‘simliklar hosili 35-40%, kungaboqar 45-50%, mevali daraxtlar 50-60% va poliz ekinlari esa 100% gacha oshganligi aniqlangan. Asalarilarning, ayniqsa g‘o‘zalarning chetdan changlanishida va ularning hosildorligining oshirishdagi ahamiyati yanada katta. Tajribalardan shular aniqlanganki, asalarilar yordamida changlangan g‘o‘za maydonlarining hosili 10- 23% gacha ortganligi va ularning ko‘sagi yirik bo‘lgan va pishib yetilish tezlashganligi kuzatilgan. Respublikamizdagi asalarichilar tajribasi shuni ko‘rsatmoqdaki, paxta maydonlariga joylashtirilgan har bir asalari oilasidan 30-40 kg gacha asal olinmoqda. Demak paxtachilikda hosildorlikni oshirish uchun har bir paxta dalasida asalari oilasini joylashtirish kerak bo‘ladi. Asalarilar qancha ko‘p bo‘lsa, undan olinadigan asal ham va qishloq xo‘jalik ekinlari hosili ham shuncha ko‘p bo‘ladi.

Ekinlarni asalarilar yordamida changlatish va hosildorligini oshirishning quyidagi usullari mavjud:

- Qiziqarli usullardan biri - chang ushlab qoladigan asbob bilan asalarilarning changini tortib olish. Bunday vaqtda asalarilar yana chang yig'ishga ketadi.
- Changlanuvchi ekinning maydon birligida asalarilar sonining ko‘p bo‘lishi.
- Asalarilarda o‘simliklarga qatnash uchun turg‘in refleks hosil qilish.
- Ghanglatuvchi asalarilardan foydalanishning optimal muddatlarini ishlab chiqish. Bunda o'smiliklarning biologik va fiziologik xususiyatlari ularni o‘stirish texnikasi o‘sish mavsumi, harorat faktori va hokazolar hisobga olinadi.
- Changlatuvchi arilar oilalari joyini har 5-7 kunda almashtirib turish.

Respublikamizda jami bo‘lib 143 mingta asalari oilasi bo‘lib, bu mavjud ekilayotgan 1,5 million gektar g‘oza maydonlarini, 540 ming gektar bedazor, 482 ming gektar bog‘, poliz, sabzavotni, 387 ming gektar makkajo‘xori va boshqa ekinlar gulini changlatishga yetmaydi. Ana shu maydondagi ekinlar gulini changlatish uchun qo‘shimcha ravishda yana 1,5-2 millionta asalari oilasini tashkil etishni talab qiladi.

Mutaxassis olimlarining fikncha, bir gektar bedazor gulini changlatish uchun 2-3 ta asalari oilasi kifoya ekan. 1 gektar g‘o‘za maydoni uchun 2-4 ta, mevazorlar uchun 2-4 ta, poliz ekinlari uchun 0,5-1 ta, sabzavot, uzumzor, perga, raps kabi ekinlar uchun 1-2 ta arilari oilasi talab qilinadi.

Hozirgi kunda mavjud arilari oilasi bilan faqatgina 200 ming gektardan ziyodroq g‘o‘za maydonlarini changlatish mumkin.

Asalari bir daqiqada o‘ndan ortiq, bir kunda esa 72 mingga yaqin g‘o‘za gulini changlatishga ko‘maklashadi. O‘z vaqtida yaxshi changlanish esa hosildorlikning oshishida katta ahamiyatga ega. Bu ayniqsa, beda urug‘i hosilini oshirishda yaqqol seziladi.

Respublikamizda asalarichilikni rivojlantirishning va uni ozuqa bilan ta'minlashning yana bir yo‘li shuki, chorvachilik uchun takroriy ekiladigan ozuqabop ekinlardan hisoblangan kuzgi raps va perga kabi servitamin ekinlarni javdar o‘simligi bilan birga xo‘jaliklarda bo‘shab qolgan yerlarga ekishni tashkil etishdir. Bu ozuqabop ekinlar bahorda chorva mollari uchun juda to‘yimli, shirali ozuqa bo‘lishi bilan birga, asalarilarning bahorgi rivoji uchun ham juda yaxshi gulshira va gulchangi beruvchi o‘similiklardan hisoblanadi. Shuningdek, Bug‘doydan bo‘shab qolgan yerlarga uch oylik kungaboqar o‘simligi navlarini ekish ham yoz oxirida asalari oilasini ko‘plab gulchangi va gul shirasi bilan ta'minlab, ularning rivojalanishiga salmoqli hissa qo‘shadi.

Asalarilar – ekinlar hosilini oshirish va urug‘chilikni rivojlantirishda katta ahamiyatga ega. Dalazordagi o‘simliklarning hosil berishlari uchun chang bir o‘simlik gulidagi ikkinchi o‘simlik guliga o‘tmog‘i kerak. Bu vazifani har xil hasharotlar, ayniqsa asalarilar bajaradi. Ekinlar gullagan vaqtda, asalarilarni ularga yaqinroq olib borishadi. Agar aksi bo‘lsa, ulardan mo‘l hosil olib bo‘lmaydi, chunki gulli

o‘simliklarning 70% qismi asalarilar bilan changlanadi. Asalarilar ko‘p miqdorda oziqa qidirib turli xil gullarga qo‘nadilar va shu bilan birga bu gullarni changlantirib ham ketadi. Asalarilarning tanasi yetarli darajada sertukli bo‘ladi va bu tuklarga ko‘p miqdorda gulchangi ilashib qoladi.

## XULOSA

O‘simliklarni changlatish uchun asalarilarga o‘rgatish sharbati beriladi. Agar arixonaga birorta gulning hidi kelib turgan oziqa solingan oxurcha qo‘yilsa, asalarilar bu oziqni olib mumkatakchalariga eltadi. Bu oziqani topib olgan asalarilar o‘z katakchalariga qaytib kelganidan so‘ng dalada birorta oziqa manbai topgan darakchi asalarilar kabi, doyra shaklida tez-tez yura boshlaydilar, ya’ni boshqa asalarilarni shu oziqani keltirish uchun qiziqtirishga urinadilar. Asalarilarning bir qismi oxurchadagi oziqani arixonaga keltiradi, va boshqa asal-arilarni xuddi shu kabi oziqa manbalarini izlab topish uchun arixonadan uchib ketishga majbur etadi. Agar asalariga g‘o‘za guli hidi kelib to‘rgan shakar sharbati berilsa, bu holda ular g‘o‘za usimligini qidirib topish uchun uchadilar. Asalarilar bu o‘simliklarni shirasidan kelib to‘rgan hidiga qarab topib oladilar. Demak asalarilarga o‘simlik gulining hidi kelib to‘rgan oziqa berib, kerakli o‘simlikni changlatish mumkin.

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# ALGORITHMIC METHODS ARE GOOD AT SOLVING INEQUALITIES

***Azimova Dilnoza Orifovna***
*Teacher of the department of Exact Sciences*
*Bukhara State Pedagogical Institute*
*dilnozazimova92@gmail.com*

**Absrakt:** In this article, the steps of solving inequalities, i.e., its algorithm, are briefly explained to the readers. This article is very useful for school teachers, students, and independent learners of mathematics. Here are some brief comments about all the cases that should be paid attention to when solving inequalities.

**Keywords:** example, solution, equation, inequality, algorithm, student, step, law.

Every teacher wants a student to explain this sequence point by explaining the steps of solving the problem as the student solves the problem. For this, the teacher must first provide an example of problem-solving. In order for each student to complete the example independently, the teacher should show (write down) the law of solving it in clear and finite steps together with the students in the lesson. The student reads (masters) it and performs the example at the same time. Mastering the topic (solving the concern) in such a way is called an algorithmic method.

Of course, learning to perform examples using an algorithmic method depends on a number of conditions. The algorithm should be as short as possible and certainly understandable.

Because it appears as a plan, scheme, or factor that has just been heard and is not yet fully assimilated in their memory for the students to complete the example. The short instruction algorithm is easily and quickly remembered. After solving a few problems, there is no need to read or look at the algorithm.

Reading and applying the example in an algorithmic way allows you to remember the solution in full, clearly, and firmly [1].

[2–15] the article is devoted to the analysis of the effectiveness of interactive technologies as a means of improving the quality of the educational process. Today, it is noted that the use of interactive methods is widely introduced in the educational process, which requires humanization, democratization, and liberalization of the educational process. Interactive methods are aimed at achieving high results in a short period of time without spending a lot of time and physical effort. They teach the student theoretical knowledge, acquire skills and competencies in certain types of activities, form moral qualities, and control the student's knowledge, and it is said that assessment requires great skill and dexterity.

If the algorithm for completing the example is not fully implemented or explained by the reader, and the algorithm is heavy, the execution of the examples on

this topic can only be slowed down. When writing a learner problem-solving algorithm, it is desirable to state the instructions to be followed by the learner as inclinations rather than commands.

Now you will be presented with an example of solving inequalities algorithmically. For this, the algorithm is written on the board or displayed on the computer screen (displayed using a video projector)

**Example.** We create an algorithm for solving this inequality

$$\frac{x(3x+1)}{(x-2)(1-2x)} > 0$$

using the method of intervals.

The reader should be familiar with the method of intervals for solving such inequalities and with solving systems of inequalities. Inequalities of this form can be solved in two ways:

Method 1. Bringing it to its equivalent

$$\begin{cases} x(3x+1)(x-2)(1-2x) > 0, \\ (x-2)(1-2x) \neq 0. \end{cases}$$

system.

**Method 2.** Interval method support. In the method, do not forget to exclude the points $x = 2$ and $x = 0{,}5$ from the solution. The algorithm for method 1 can be formulated as follows:

1. Solving the inequality

$(x-2)(1-2x) \neq 0$,

we get the roots $x \neq 2$ and $x \neq 0{,}5$ (the condition that the denominator of the fractional expression is not equal to zero).

2. By writing the right side of the inequality in the form of linear multipliers, we preserve its sign (because it is enough if the sign of the inequality is fulfilled):

$x(3x+1)(x-2)(1-2x) > 0$.

3. To make the coefficients in front of the variable in the linear multipliers in the inequality +1, we remove the coefficients different from it outside the parentheses:

$3 \cdot (-2) \cdot x\left(x+\frac{1}{3}\right)(x-2)\left(x-\frac{1}{2}\right) > 0$ or $-6x\left(x+\frac{1}{3}\right)(x-2)\left(x-\frac{1}{2}\right) > 0$.

4. We divide both sides of the inequality by -6 (in the case of a negative number, the sign of the inequality changes to the opposite)

$x\left(x+\frac{1}{3}\right)(x-2)\left(x-\frac{1}{2}\right) < 0$.

5. On the axis of numbers, we mark the values of the variable for which the linear multipliers on the left side of the inequality are equal to zero (since the inequality is strict, these points are marked with empty circles, and the points where the inequality has meaning when it is not strict are marked with painted circles) (Fig. 1).

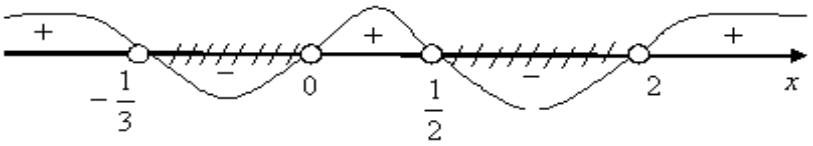


Figure 1

6. Starting somewhere in the upper part of the direction of the axis of numbers, we draw a line from each designated point (entering and exiting as shown in Figure 1). The lower part of the number axis means that the value of the expression on the left side of the inequality is positive, and the upper part is positive (we cross out the desired area).

7. We write the answer: $x \in \left(-\frac{1}{3}; 0\right) \cup \left(\frac{1}{2}; 2\right)$.

We will give the steps for solving another example of the algorithmic method as an example.

Solve this inequality

$$\frac{(x-2)^2(x-3)^3}{x^2-25} \le 0.$$

Solving. We also use the method of intervals to solve this inequality. The solution algorithm can be expressed as follows.

1. Since $(x-2)^2 \ge 0$ and taking into account that $x=2$ is a solution to the inequality, we write it in the following form:

$$\frac{(x-3)^3}{x^2-25} \le 0.$$

2. Taking into account that the sign is preserved when increasing the value of the expression to an odd degree, we write the last inequality in the following form:

$$\frac{x-3}{x^2-25} \le 0$$

3. The denominator should not be zero. $x^2-25 \ne 0$ from the inequality $x \ne 5$ and $x \ne -5$.

4. We write the right side of the inequality in step 2 in the form of linear multipliers

$$(x-3)(x-5)(x+5) \le 0.$$

5. On the axis of numbers, we determine the values of the variable for which the linear multipliers on the left side of the inequality are equal to zero (Fig. 2).

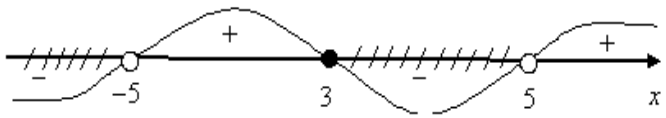


Figure 2

The values of the variable $x=5$, $x=3$, $x=-5$) for which the expression in the given inequality does not make sense are marked with empty circles.

6. Starting from the right side, through the line passing through the points ( $x=5$, $x=3$, $x=-5$ ), the inequality is fulfilled (we mark the areas where it is not fulfilled).

7. We write the answer as $x \in (-\infty;-5) \cup [3;5)$, according to figure 2. This is not a complete answer. In step 1, it was noted that $x=2$ is a solution to the inequality. So $x \in (-\infty;-5) \cup \{2\} \cup [3;5)$.

In conclusion, it can be said that solving inequalities in an "algorithmic" way helps students to correctly sequence their knowledge on the subject and to correctly organize the skills of solving independent inequalities. As a result, it ensures that the student does not have additional questions on the topic. This is a great achievement for a teacher.

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# АНАЛИЗ ОТДАЛЕННЫХ РЕЗУЛЬТАТОВ ОПЕРАЦИИ С ПОМОЩЬЮ РЕНТГЕНОЛОГИЧЕСКОГО (ЛУЧЕВОГО) ИССЛЕДОВАНИЯ

***Маматов М.А., Абролов Х.К., Собиров А.А, Акбархонов Б.А.***
*ГУ «Республиканский Специализированный научно-практический медицинский центр хирургии им.академика В.Вахидова» г.Ташкент. Узбекистан.*

**Резюме.**

В данном научном обзоре проводился сравнительный анализ рентгенологических методов исследования в послеоперационной оценке структур аномального дренажа легочных вен. Вопросы обратимости ряда симптомов порока после оперативного лечения являлись предметом изучения ряда исследователей. Определенный комплекс задач может быть решен при углубленном изучении отдаленных результатов, так как только длительное наблюдение за пациентами позволяет оценить преимущества тех или иных методик хирургической коррекции АДЛВ. Изучения адекватности хирургического лечения АДЛВ на основании отдаленных результатов и оценка динамики рентгенологических параметров сердца, несомненно, актуальна и представляет научно - практический интерес. Целью исследования явилось изучение динамики рентгенологических параметров сердца у больных с аномальным владением легочных вен в отдаленном периоде после операции.

**Ключевые слова**: аномальный дренаж легочных вен, отдаленный послеоперационный период, рентгенологическое исследование.

ANALYSIS OF LONG-TERM RESULTS OF SURGERY USING X-RAY (RADIATION) EXAMINATION

Mamatov M.A., Abrolov H.K., Sobirov A.A., Akbarkhonov B.A.
GU "Republican Specialized Scientific and practical Medical Center of Surgery named after academician V.Vakhidov", Tashkent. Uzbekistan.

Resume.

In this scientific review, a comparative analysis of X-ray research methods in the postoperative assessment of structures of abnormal pulmonary vein drainage was carried out. The reversibility of a number of symptoms of the defect after surgical treatment has been the subject of study by a number of researchers. A certain set of tasks can be solved with an in-depth study of long-term results, since only long-term monitoring of patients allows us to assess the advantages of certain surgical correction techniques for ADLV. The study of the adequacy of surgical treatment of ADLV based on long-term results and the assessment of the dynamics of radiological parameters of the heart is undoubtedly relevant and of scientific and practical interest. The aim of the

study was to study the dynamics of the radiological parameters of the heart in patients with abnormal possession of the pulmonary veins in the long-term period after surgery.

**Keywords:** abnormal drainage of pulmonary veins, long-term postoperative period, X-ray examination.

Актуальность проблемы.

Врожденные пороки сердца по данным различных авторов составляют 0,7–1,7% у новорожденных детей [1,12]. В их число входит и аномальный дренаж легочных вен (АДЛВ), единственный способ лечения которого – это своевременная хирургическая коррекция, в конечном итоге дающая хороший результат [1,8,12,]. В ряде работ на основании оценки отдаленных результатов авторы рассматривают эффективность того или иного способа операции при АДЛВ [2,4,5,9,10]. Вопросы обратимости ряда симптомов порока после оперативного лечения являлись предметом изучения ряда исследователей. Следует отметить, что публикации о рентгенологическом анализе изменений гемодинамики в отдаленном периоде после коррекции АДЛВ немногочисленны и в отечественной, а так же зарубежной литературе встречаются редко [4,5,7,]. Определенный комплекс задач может быть решен при углубленном изучении отдаленных результатов, так как только длительное наблюдение за пациентами позволяет оценить преимущества тех или иных методик хирургической коррекции АДЛВ [3,6,9,11,]. Изучение адекватности хирургического лечения АДЛВ на основании отдаленных результатов и оценка динамики рентгенологических параметров сердца, несомненно, актуальна и представляет научно - практический интерес.

Цель исследования: изучение динамики рентгенологических параметров сердца у больных с аномальным владением легочных вен в отдаленным периоде после операции.

**Материалы и методы.** В настоящее исследование были включены данные отдаленного обследования 119 пациентов с различными вариантами АДЛВ, оперированные в период с 2001 по 2021 г в РСНПМЦХ имени академика В.Вахидова. Проведена сравнительная оценка изменения рентгенологических параметров сердца с дооперационными данными, а также выявлена длительность регрессии патологических изменений.

Сравнительный анализ данных рентгенологического исследования до операции проведен у 221 (100%), а в отдаленные сроки проведен у 119 (53,8%) больных. Одним из основных показателей успешной коррекции АДЛВ является нормализация легочного рисунка. Общими для всех форм порока до операции является усиление легочного рисунка, что более выражено у больных с тотальным АДЛВ (ТАДЛВ). Таким образом, если до операции у 57 (25,7%) больных была отмечена выраженная гиперволемия малого круга

кровообращения (МКК), то после операции она исчезала у всех больных (табл. 1).

**Таблица 1.**

**Рентгенологические признаки гиперволемии МКК у больных с АДЛВ**

| Сроки исследования | Типы АДЛВ | Гиперволемия МКК | | |
|---|---|---|---|---|
| | | нет | умеренная | выраженная |
| До операции | супракардиальный. | - | 71(32,1%) | 28(0,9%) |
| | кардиальный. | 1(0,45%) | 86(38,9%) | 24(0,9%) |
| | смешанный | - | 6(2,7%) | 5(2,26%) |
| Итого | n = 221 | 1(0,45%) | 163(73,7%) | 57(25,7%) |
| После операции | супракардиальный | 65(54,6%) | 2(1,6%) | - |
| | кардиальный | 39(32,7%) | 3(2,5%) | - |
| | смешанный | 4(3,3%) | 6(5,04%) | - |
| Итого | n - 119 | 108(90,7%) | 11(9,2%) | - |

Умеренная гиперволемия МКК отмечалась до операции у 163 (73,7%) больных, после операции она оставалась лишь у 11 (9,2%) - это были больные старшей возрастной группы. На рисунке 1 а,б, представлены рентгенограммы грудной клетки выполненные до и после операции больного с АДЛВ.

**Рис. 1 а. Рентгенограмма грудной клетки больного Р, 18 лет, до операции, видны признаки гиперволемии в МКК, КТИ 52%.**

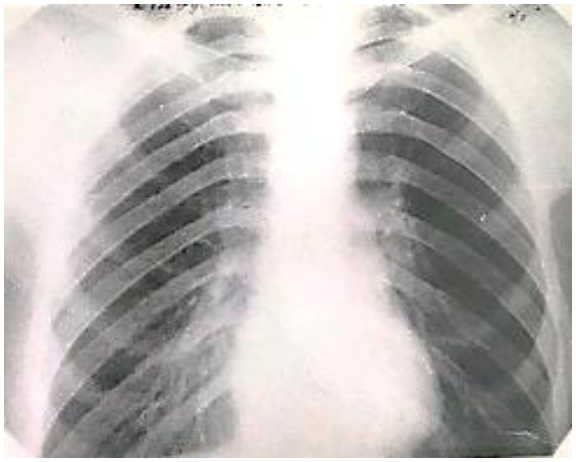


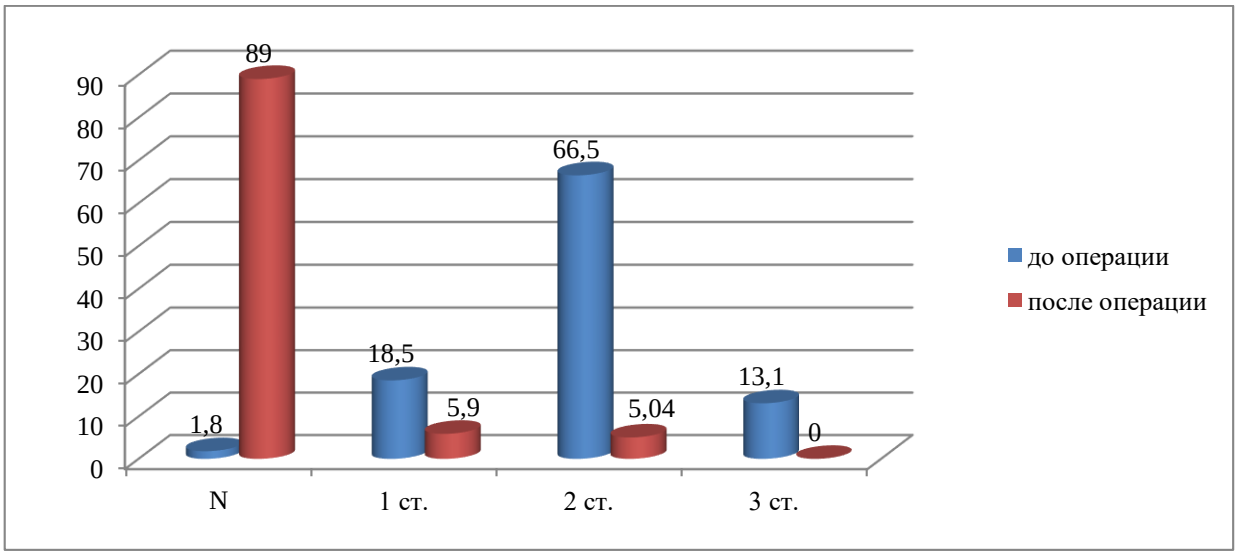
**Рис.1.*б.* Рентгенограмма грудной клетки того же больного через 10 лет, после операции - признаков гиперволемии нет, КТИ 41%.**

Патогномоничный симптом «восьмерки» или «снежной бабы», характерный для супракардиального типа ТАДЛВ до операции обнаружен у 14 (6,3%) больных, в отдаленные сроки он исчезал полностью (рис. 2 а,б).

**Рис. 2. а. Рентгенограмма грудной клетки больного Н, 9 лет, с характерным симптомом «восьмерки» или «снежной бабы».**

**Рис. 2. *б.* Рентгенограмма грудной клетки больного Н,15лет, через 6 лет после операции - симптома «восьмерки» нет.**

Кардиоторакальный индекс (КТИ) был увеличен до операции у 216 (95,6%) больных с АДЛВ. При этом до коррекции порока нормальный КТИ был у 4 (1,8%) больных, увеличение I-й степени отмечено у 41 (18,5%), II-й степени у 147 (66,5%) и III-й степени у 29 (13,1%) пациентов (рис. 3).




**в %.**

**Рис. 3. Изменения КТИ в отдаленные сроки после операции у больных с АДЛВ.**

В отдаленном периоде после оперативного вмешательства происходила значительная положительная регрессия КТИ. Так, I-я степень увеличения КТИ отмечена у 7 (5,9%) больных, II-я степень - у 6 (5,04%), у остальных обследованных больных КТИ был в пределах нормы.

Объем сердца до коррекции был увеличен у 217 (98,2%) больных (табл.2) и лишь в 4 (1,8%) случаев объем сердца был в пределах нормы. Известно, что

имеется прямая зависимость между объемом сброса крови и степенью увеличения объема сердца. Рентгенологически установлено значительное уменьшение объема сердца, в ряде случаев до нормальных величин после коррекции АДЛВ (табл. 2). Так, до операции нормальный объём сердца отмечен у 4 (1,8%) больных, I-я степень увеличения у 43 (19,4%), II-я степень у 148 (66,9%) и III-я степень увеличения у 25 (11,3%) пациентов. В отдаленном периоде объём сердца нормализовался у 112 (94,1%) больных, I-я степень увеличения объема сердца осталась у 6 (5,04%) и II-я степень увеличения у 1 (1,6%) пациента. Заметное уменьшение объёма сердца наблюдается в течение первых 1-3 лет после операции. В дальнейшем, как правило, динамика обратного развития объема сердца была незначительной, и это происходило за счет уменьшения его правых отделов. Незначительное уменьшение объёма сердца отмечено, в основном, у тех больных, у которых до операции наблюдались II и III-я степень легочной гипертензии (ЛГ).

**Таблица 2**

**Динамика изменения объема сердца оперированных пациентов с АДЛВ**

| Степень увеличения объема сердца | | Степень ЛГ в МКК | | | Средняя величина % от нормы P < 0.005 |
|---|---|---|---|---|---|
| | | I | II | III | |
| Норма | до операции | 4 | - | - | 98 ± 2,4% |
| | после операции | 62 | 46 | 4 | 100 ± 3,6% |
| I степень | до операции | 10 | 24 | 9 | 120 ± 1,6% |
| | после операции | - | 1 | 5 | 110 ± 1,8% |
| II степень | до операции | 3 | 28 | 10 | 150 ± 3,8% |
| | после операции | - | - | 2 | 140 ± 2,7% |
| III степень | до операции | - | 2 | 5 | 190 ± 4,5% |
| | после операции | | - | - | — |

Полученные данные свидетельствуют о том, что наибольшее ее уменьшение после операции выявлено у больных, оперированных в возрасте до 18 лет.

В связи с артериовенозным сбросом у больных с АДЛВ до операции на уровне предсердий наблюдается расширение правых отделов сердца. Эти признаки более выражены у больных с ТАДЛВ. Увеличение правого предсердия (ПП) до операции отмечено у всех 218 больных (табл.3). Наибольшее увеличение определяется у больных со II-й степенью ЛГ. Прекращение после операции артериовенозного сброса крови приводит к уменьшению кровенаполнения правых отделов сердца. В связи с этим, в отдаленном периоде после операции

увеличение ПП осталось лишь у 11 (4,9%) пациентов, причем в меньшей степени, чем до операции.

После адекватной коррекции порока прекращается артериовенозный сброс крови, минутный объем большого круга кровообращения увеличивается; в связи с этим увеличивается нагрузка и на левые отделы. При этом размеры последних увеличиваются. В наших наблюдениях увеличение левого предсердия выявлено у 165 (74,6%) больных.

**Таблица 3**

**Динамика изменения размера правого предсердия до и в отдаленные сроки после операции у больных с АДЛВ.**

| Отделы сердца | Степени увеличения | Средняя величина % от нормы | | | |
|---|---|---|---|---|---|
| | | До операции | | После операции | |
| | | N-число | % | N-число | % |
| ПП | Норма | 3 | 28 ± 2,5% | 117 | 27,2 ± 1,5% |
| | I степень | 134 | 35 ± 1,6% | 2 | 32,1 ± 0,8% |
| | II степень | 61 | 46 ± 2,3% | - | - |
| | III степень | 23 | 54 ± 2,6% | - | - |

При АДЛВ до операции вся нагрузка избыточного кровотока падает на правое сердце. Левый желудочек функционирует в «облегченных» условиях гемодинамики, ибо определенное количество шунтируемой крови, минуя эту полость, попадает из легочных вен в правые отделы сердца [2,6]. Несмотря на это, из 221 обследованных нами больных, только у 44 (19,9%) отмечено увеличение левого желудочка.

Важным рентгенологическим признаком нормализации гемодинамики после ликвидации АДЛВ является определение степени ЛГ, которая выражается на рентгенограммах в виде выбухания дуги легочной артерии (ЛА). Наиболее точно отражает степень выбухания ЛА коэффициент Мура. При обследовании больных после операции отмечено значительное изменение индекса Мура в положительную сторону. При этом, до операции лишь у 8 (3,6%) больных индекс Мура был нормальным, после операции он стал таковым у 116 (97,4%) больных. До операции величина индекса Мура составляла: при I-й степени 33 ± 2,6%, при II-й степени 37 ± 1,8% и при III-й степени 44 ± 1,5%, а после операции - при I-й степени 34 ± 1,6%, а II и III-й степени увеличения мы не наблюдали (табл. 4).

**Таблица 4**

**Изменения индекса Мура до и в в отдаленные сроки после операции у больных с АДЛВ**

| Показатель сердца | Степени увеличения | Средняя величина в% от нормы | | | |
|---|---|---|---|---|---|
| | | До операции | | После операции | |
| | | N-число | % (p<0.01) | N-число | % (p<0.01) |
| Индекс Мура | Норма | 8 | 29 ± 3,2% | 116 | 27 ± 2,1% |
| | I степень | 132 | 33 ± 2,6% | 3 | 34 ± 1,6% |
| | II степень | 59 | 37 ± 1,8% | - | - |
| | III степень | 24 | 44 ± 1,5% | - | - |

Анализируя рентгенологические данные у больных с АДЛВ, в отдаленном периоде после операции, у 106 (89,07%) больных отмечен хороший результат, у них отмечалась значительная положительная динамика кардиометрических показателей достигающая нормальных величин - это уменьшение признаков ЛГ, нормализация размеров правых отделов сердца. Удовлетворительный результат получен у 11 (9,24%) пациентов - это незначительное уменьшение гиперволемии и размеров правых отделов, КТИ, объема сердца и индекса Мура. Неудовлетворительный результат отмечен у 2 (1,7%) больных - после операции практически отсутствует положительная динамика, имеется значительное ухудшение рентгенологических показателей, связанных с развитием недостаточности митрального и трикуспидального клапанов сердца из-за бактериального эндокардита.

При изучении отдаленных результатов операции больных с АДЛВ большая роль принадлежит эхокардиографии. Сравнительные результаты эхокардиографии с дооперационными данными полученные у 119 больных в сроки от 1 года до 10 (в среднем, 6,7 ± 0,16) лет приведены в табл. 6.12. При оценке результатов операции по данным комплексной ЭхоКГ большое внимание нами было уделено динамике уменьшения размеров правых отделов сердца. Обычно линейные размеры правых отделов сердца у больных с АДЛВ увеличены. После хирургического лечения АДЛВ размеры правых отделов сердца уменьшились, приближаясь к возрастной норме. Динамика их при этом зависела от следующих основных факторов: от исходной ЛГ, от возраста больных в момент выполнения операции и сроков, прошедших после оперативного лечения порока.

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# “FOLLOWING IN FOOTSTEPS: MY FAMILY OF TEACHERS AND MY DREAM”

***Azizova O‘g‘iloy Abdulhamid qizi***
*6th grade student at public school №42,*
*Turakurgan, Namangan*

**Annotation.** This article is a heartfelt narrative written by Ogiloy, a 6th-grade student from Uzbekistan, who comes from a family of dedicated teachers. She shares her admiration for her family's passion for education and their impact on her decision to pursue a career as an English teacher. Ogiloy explains her love for the English language, its global importance, and her desire to contribute to her community by improving education in Uzbekistan. Her story highlights the influence of her family's teaching legacy and her commitment to making a positive difference in the lives of future students.

**Key Words:** teaching, family of teachers, English teacher, education, Uzbekistan, dedication, inspiration, passion for teaching, language skills, global opportunities, student potential, quality education, community impact, career aspirations, learning methods

# “ПО СЛЕДАМ: МОЯ СЕМЬЯ УЧИТЕЛЕЙ И МОЯ МЕЧТА”

**Учащийся 6 класса государственной школы №42 города Туракурган Наманганской области**

**Аннотация.** Эта статья представляет собой проникновенный рассказ, написанный Огилой, ученицей 6-го класса из Узбекистана, происходящей из семьи преданных своему делу учителей. Она разделяет свое восхищение страстью своей семьи к образованию и их влиянием на ее решение продолжить карьеру преподавателя английского языка. Огилой объясняет свою любовь к английскому языку, его глобальную значимость и желание внести свой вклад в жизнь своего сообщества, улучшая образование в Узбекистане. Ее история подчеркивает влияние педагогического наследия ее семьи и ее стремление внести позитивные изменения в жизнь будущих студентов.

**Ключевые слова:** преподавание, семья учителей, учитель английского языка, образование, Узбекистан, преданность делу, вдохновение, страсть к преподаванию, языковые навыки, глобальные возможности, студенческий потенциал, качественное образование, влияние на сообщество, карьерные устремления, методы обучения.

Hello! My name is Ogiloy, and I am a 6th-grade student from Uzbekistan. Today, I want to share with you a little bit about my family and my dreams for the future. You see, my family is very special to me because we are a family of teachers. Teaching is more than just a job for us; it is a passion and a way of life. Inspired by my family, I dream of becoming an English teacher when I grow up.

Let me start by introducing my family. My mother is a math teacher, my father teaches history, and my older sister is an art teacher. My grandparents were also teachers before they retired. Teaching seems to run in our blood! Every evening at dinner, our conversations often revolve around school, students, and interesting lessons. It's like a mini school meeting at home! I love listening to their stories and learning about different teaching methods and ideas.

One of the things I admire most about my family is their dedication to their students. My mother always says that teaching is not just about imparting knowledge but also about inspiring and nurturing young minds. She spends hours preparing her lessons and finding new ways to make math fun and interesting. My father, on the other hand, has a way of bringing history to life. He tells stories about historical events as if he was there himself, and his students are always eager to learn more.

My sister, who teaches art, has taught me that education is not just about academic subjects but also about creativity and self-expression. She believes that every student has a unique talent, and it is a teacher's job to help them discover and develop it. I often help her prepare art supplies for her classes, and in return, she teaches me how to draw and paint. Through her, I have learned that teaching can be a beautiful blend of fun and learning.

Growing up in such an environment, it's no wonder that I have developed a deep love for teaching. But why English, you might ask? Well, there are a few reasons for that. First of all, I love the English language. I enjoy reading books in English, watching English movies, and listening to English songs. English is like a key that opens up a whole new world of knowledge and opportunities. It is the most widely spoken language in the world, and knowing it can help people connect with others from different countries and cultures.

Another reason I want to become an English teacher is because I believe that English is an important skill for the future. In today's globalized world, knowing English can open many doors for people. It can help them get better jobs, travel to different countries, and access a wealth of information on the internet. I want to help my future students master this important skill so that they can achieve their dreams and aspirations.

Moreover, I have had some amazing English teachers who have inspired me greatly. My current English teacher, for example, is always full of energy and enthusiasm. She uses games, songs, and stories to make learning English fun and engaging. Her classes are never boring, and I always look forward to them. She has

shown me that teaching can be both enjoyable and effective, and I aspire to be like her one day.

In addition to my love for the English language, I am also motivated by the desire to make a difference in my community. In Uzbekistan, there are still many children who do not have access to quality education, especially in rural areas. By becoming an English teacher, I hope to contribute to improving education in my country. I want to teach in schools where English teachers are needed the most and help students realize their full potential.

To achieve my dream, I know that I need to work hard and stay dedicated. I am determined to excel in my studies, especially in English. I also plan to participate in English language competitions and join English clubs to improve my skills. Additionally, I want to learn about different teaching methods and techniques so that I can become an effective and inspiring teacher like my family members.

In conclusion, my family of teachers has been a great source of inspiration and support for me. Their passion for teaching and dedication to their students have motivated me to pursue a career in education. I am passionate about the English language and believe that teaching it can open many doors for my future students. I am committed to working hard and achieving my dream of becoming an English teacher, and I hope to make a positive impact on my community through my work.

Thank you for reading about my dreams and aspirations. I am excited about the future and look forward to the day when I can stand in front of a classroom and inspire my students, just like my family has inspired me.

**Reference:**

1. Internet resources: google.com, Wikipedia, many other sites
2. My teachers' lessons
3. My family
4. My enthusiasm in learning languages

# ANALYSIS OF GENDER ASPECT IN PHRASEOLOGICAL UNITS IN ENGLISH AND UZBEK LANGUAGES

***Khidirova Shakhnoza Gafforovna***
*Termez State university*

**Summary.** The following article describes the notion of gender and gender stereotype. The author points out the actuality of the present research, demonstrates parts or parameters which create gender stereotypes, enlightens the main factors of the gender concepts “man” and “woman” on the material of English genderly marked phraseological units, i.e. phraseological units which contain in their structure a component denoting a man or a woman. The author presents statistic information about genderly marked phraseological units belonging to different semantic groups (appearance, social status, marital status, intellectual skills, etc.). Theoretical part of the article is proved by a number of examples which reveal gender stereotypes in the English phraseology.

**Key words:** actualization, gender component, conceptual, masculinity, femininity, semantics, phraseological unit.

It is known that the language reflects the cultural heritage of the people, and the phraseological level of the language preserves and manifests the cultural relations of the people. The study of phraseological units in terms of gender reveals the cultural specificity of gender stereotypes. This situation exists in any society, including English and Uzbek. Gender stereotypes reinforced in English culture have certain national and cultural specificity. This concept also corresponds to the culture of the Uzbek language, which represents the national and cultural characteristics of the development of the Uzbek society.

Gender - defined phraseological units are figurative language expressions that reinforce and reflect the concepts of "man", "woman" and thoughts about these concepts.

Gender linguistics is currently a relevant interesting direction in the science of language. Research in Gender Linguistics are carried out practically on the material of all modern written languages. From childhood males and females are different in many ways, both psychologically and physiologically. Although women and men,from a given social class ,belong to the same speech community,they might use different linguistic forms. In Uzbek female speech, politeness,s ervility, softness some shyness and expression of loyalty in speech addressed to the husband and husband 's relatives, children. But men tend to be harsh and proactive in conversation. Many scholars argue that men express their thouughts shorter than women. Men more often use nouns and numbers, while a woman's speech is saturated with verbs.

Gender indicates whether a particular noun or pronoun is masculine, feminine or neuter. Though most nouns in the English language do not have a gender(neuter gender), there are nouns related to people and animals which have different genders.According to the Oxford Learner's Dictionary, the term 'gender' is defined as "each of the classes (masculine, feminine, and sometimes neuter) into which nouns, pronouns, and adjectives are divided; the division of nouns, pronouns, and adjectives into these different genders. Different genders may have different endings, etc." The Merriam-Webster Dictionary defines gender as "a subclass within a grammatical class (such as noun, pronoun, adjective, or verb) of a language that is partly arbitrary but also partly based on distinguishable characteristics and that determines agreement with and selection of other words or grammatical forms". Examples of Gender in English Grammar .Gender of nouns can be classified as masculine, feminine and the neuter gender. Given below are a few examples of gender.

It is difficult to determine the gender of phraseological units in the Uzbek language using grammatical criteria, because there are no pronouns denoting a specific gender. The pronouns he and she in English correspond to the pronoun u in Uzbek, which can denote any object, thing or event; the English pronouns "his" and "her" correspond to their pronouns in Uzbek; English pronouns him and her correspond to Uzbek pronouns. It follows that pronouns in the Uzbek language cannot indicate male or female gender.

English and Uzbek proverbs are characterized by similarities and differences in terms of content. The proverbs that emerged as a result of people's experience and observations embody ideas about when to get married: Eng. Marry in May, rue for aye Uzb. Don't take a wife on Eid, don't take a new year in the rain.

| **Masculine gender examples** | **Feminine gender examples** | **Neuter gender examples** |
|---|---|---|
| Man | Woman | Box |
| Boy | Girl | Car |
| Uncle | Queen | Mountain |
| Fox | Niece | Stone |
| Lion | Cow | River |
| Grandfather | Grandmother | Book |

In linguistics, phraseology is the study of set or fixed expressions, such as idioms, phrasal verbs, and other types of multi-word lexical units (often collectively referred to as phrasemes), in which the component parts of the expression take on a meaning more specific than, or otherwise not predictable from, the sum of their meanings when

used independently. For example, ‘Dutch auction’ is composed of the words Dutch ‘of or pertaining to the Netherlands’ and auction ‘a public sale in which goods are sold to the highest bidder’, but its meaning is not ‘a sale in the Netherlands where goods are sold to the highest bidder’; instead, the phrase has a conventionalized meaning referring to any auction where, instead of rising, the prices fall.

Phraseology is an independent field of linguistics, and it was separated from lexicology as an independent department, a new field, from the 50s of the 20th century. In the formation of phraseology as a separate linguistic direction, including the emergence of Uzbek phraseology, V. V. Vinogradov has made important contributions. Because, during the time of the former Soviets, the phraseology of the languages of the colonial peoples appeared based on the teachings of this scientist. Academician A. Shakhmatov, V. Vinogradov, A. Yefimov, N. Shanskylar, and Sh. Rakhmatullayev, Y. Pinkhasov, M. Husainov, I. Kochqortoyev, B. Yo`ldoshev are the most important in the development of this field. scientists have done a great service.

Phraseological connections or phraseologisms are lexical units consisting of two or more words combined to express a figurative meaning, acting as a single unit in a sentence, integrated, stable in composition, ready, with figurative images. Phrases consist of at least two independent words (lexemas). Accordingly, phrases differ from words in terms of their expression: the material side of a word is a sound, and a phraseology is a word. The semantic plan of phrases is characterized by the phenomenon of semantic connection of more than one word on the basis of a certain image, on the basis of movement, and this is called phraseological meaning.

In the achievement of new successes of Uzbek phraseology B.Yo'ldoshev, Abdumurad and Abdugofur Mamatov contributed greatly to the new success of Uzbek phraseology. B.Yoldoshev explained in detail the connotative meanings of phraseology and their possibilities as a means of artistic image. Abdumurad Mamatov raised the problem of phraseological norm and showed the relationship between phraseological norm and phraseological variant. Abdugofir Mamatov, in his many works, revealed the problems of phraseological formation and explained the factors of its emergence. He showed that an important distinguishing feature of phraseologisms is content reshaping.

The earliest English adaptations of phraseology are by Weinreich within the approach of transformational grammar, Arnold and Lipka . In Great Britain as well as other Western European countries, phraseology has steadily been developed over the last twenty years. The activities of the European Society of Phraseology and the European Association for Lexicography with their regular conventions and publications attest to the prolific European interest in phraseology. European scholarship in phraseology is more active than in North America. Bibliographies of recent studies on English and general phraseology are included in Welte and specially

collected in Cowie & Howarth whose bibliography is reproduced and continued on the internet and provides a rich source of the most recent publications in the field.

Although phraseology is very ancient in origin, the science of phraseology spans nearly two hundred years. The founder of the science of phraseology is the Swiss scientist Charles Bally. In his work French Stylistics, he included special chapters on the study of word combinations.

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# DESIGN AND DEVELOPMENT OF AN AUTOMATED WATER LEVEL CONTROL SYSTEM

***Azimov Bakhtiyor Allamurod ugli***
*Qarshi muhandislik-iqtisodiyot instituti o'quvchisi*
*"Fizika va Elektronika" kafedrasi*
*EA-186-21 guruh talabasi*
*Karshi Engineering Economics Institute,*
*Karshi, Uzbekistan, 180100*

**Abstract.** This study details the design and implementation of an automated water level controller using the MC14066 integrated circuit, which acts as a threshold detector to facilitate on/off pump control. The controller was tested in real-world conditions to regulate water levels within a tank, specifically interfacing with a single-phase 0.5 HP AC pump. It effectively maintained predetermined minimum and maximum water levels of 10 and 50 liters, respectively. This automated system proved to be highly efficient in preventing overflows and underfills, thus significantly reducing the potential for water and energy wastage. The implementation highlights the controller's applicability and effectiveness in maintaining critical water levels, offering significant benefits for residential, agricultural, and industrial settings.

**Keywords:** electronic circuitry, water level, integrated circuit, control, regulator.

# SUV SATHINI ROSTLASHNING AVTOMATLASHTIRILGAN TIZIMNI LOYIHALASH VA ISHLAB CHIQISH

Azimov Baxtiyor Allamurod o'g'li
Qarshi muhandislik iqtisodiyot instituti, Qarshi, O'zbekiston, 180100

**Annotatsiya.** Ushbu tadqiqotda MC14066 integrallangan sxemasidan foydalangan holda avtomatlashtirilgan suv sathini nazorat qilish qurilmasining dizayni va ishlab chiqilishi batafsil bayon etilgan. Ushbu qurilma nasosni yoqish/o'chirish uchun chegaraviy aniqlovchi sifatida ishlaydi. Qurilma haqiqiy sharoitlarda sinovdan o'tkazilib, 0,5 ot kuchiga ega bo'lgan bir fazali AC nasos bilan interfeys orqali tank ichidagi suv sathini tartibga solishda foydalanilgan. Qurilma 10 va 50 litr bo'lgan oldindan belgilangan minimal va maksimal suv sathlarini samarali tarzda saqlab turdi. Ushbu avtomatlashtirilgan tizim toshib ketish va kamayishning oldini olishda juda samarali ekanligini isbotladi va shu bilan suv va energiya sarfini sezilarli darajada kamaytirdi. Qurilmaning joriy etilishi nazorat qilish qurilmasining suv sathini muhim darajada saqlashdagi

qo‘llanilishini va samaradorligini ko‘rsatib, uy-joy, qishloq xo‘jaligi va sanoat sohalari uchun katta foyda keltiradi.

**Kalit so‘zlar:** elektron sxemalar, suv sathi, integrallangan sxema, nazorat, regulyator.

## Introduction

The necessity for effective water management in various sectors such as industry, agriculture, and residential settings often involves the use of overhead tanks fed by electric pumps. Traditionally, these tanks are monitored manually to determine when they are full, typically indicated by overflow.

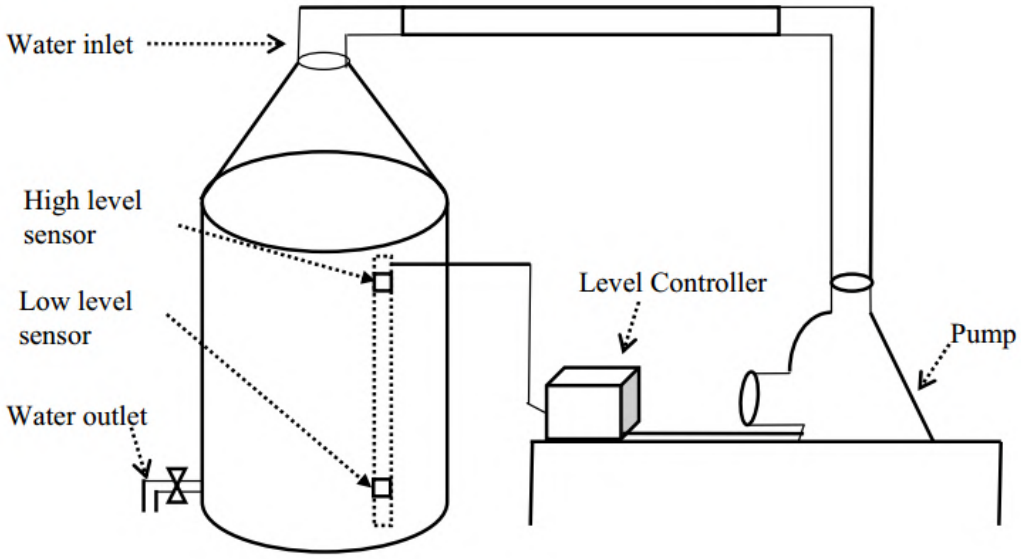


Figure 1: Schematic of the tank and regulator.

This method can lead to significant losses, especially if the liquid being managed is expensive or environmentally harmful. The introduction of an automatic feedback control mechanism could revolutionize this process by enabling pumps to operate only as needed, thereby enhancing efficiency and reducing waste. While pumps with variable speed motors offer more efficiency than simple on/off systems, they are often prohibitively expensive for small to medium enterprises.


Figure 2: Schematic of the Sensor Assembly.

Moreover, most high-quality water level sensors are imported and costly, making them inaccessible for widespread use in households. This paper focuses

on a cost-effective, simple but efficient automatic water level control system designed to address these issues, using readily available electronic components.

Traditional methods for determining water levels in tanks involve either tapping the tank's side until the sound changes or manually dipping a measuring stick into the tank. Both methods are flawed; the former is unreliable, and the latter is cumbersome and time-consuming. In contrast, more sophisticated approaches use electronic circuitry to sense water levels, utilizing integrated circuits (ICs) that allow for precise control and regulation. This technology has evolved significantly since the development of the transistor at Bell Laboratories in 1947, which marked the beginning of replacing vacuum tubes for switching electronic signals. It wasn't until 1959, however, that Texas Instruments developed the integrated circuit, revolutionizing electronic design and functionality. Particularly relevant to this study is the MC14066 integrated circuit, designed for specific control tasks like water level regulation.

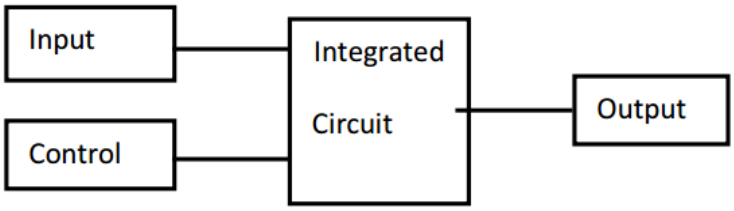


Figure 3: Functional block diagram of MC14066.

Despite advances, as of now, in Uzbekistan, sophisticated water level sensing and control systems are not commonly manufactured locally and are typically imported.

The proposed system is a closed-loop control device that utilizes liquid levels to manage the power supply to a pump, functioning as a discrete on/off actuator through an electronic circuit. This system employs two electronic sensors strategically positioned to detect low and high water levels. The sensors' output signals are converted into on/off commands that control the pump's power supply, as illustrated in the schematic diagram in Figure 1. One of the primary advantages of this system is its versatility—it is not constrained by the size or material of the liquid tank. Any existing tank can be retrofitted into a controlled environment by installing a regulator sensor and integrating the necessary circuitry. The sensor used, depicted in Figure 2, operates based on the electrical conductivity of water, which varies with the concentration of dissolved salts. This sensor comprises a metallic conductor housed within a plastic tube, rising in synchronization with the water level in the tank. This design allows for precise and adaptable water level management suitable for various applications.

The liquid tank, pivotal to the system, is constructed from G14 galvanized iron sheet, molded and welded into a cylindrical shape where the diameter is twice the height for optimal stability and capacity. It features essential inlet and outlet pipes to facilitate water flow.

A single-phase electric pump, specifically the MKP-60 model from Oceanic Water Pump company, is used, operating at 0.5 horsepower, equivalent to 0.37 kW. This pump efficiently manages the water intake and discharge.

Central to the water level control is the MC14066 integrated circuit, which includes four independent switches that handle both digital and analog signals. This IC is crucial for transforming electrical input into actionable control signals that manage the pump's operation.

The setup involves a 12V DC input linked to the IC's input pin, which only transmits to the output when a control signal is present, determined by the water's contact with a strategically placed sensor wire. This control pin is grounded through a 100k resistor, and a secondary wire set at a predetermined water height creates an electrical path when in contact with water, thus generating a control signal.

When water reaches this sensor wire, it completes the electrical circuit, allowing the 12V DC to proceed and triggering the control signal. This results in the actuation of a TIP31 transistor through a relay, turning the pump on or off based on the water level.

This system efficiently automates the water level management by using electrical signals to control mechanical actions, reducing the need for manual intervention and enhancing the overall efficiency and lifespan of the pump.

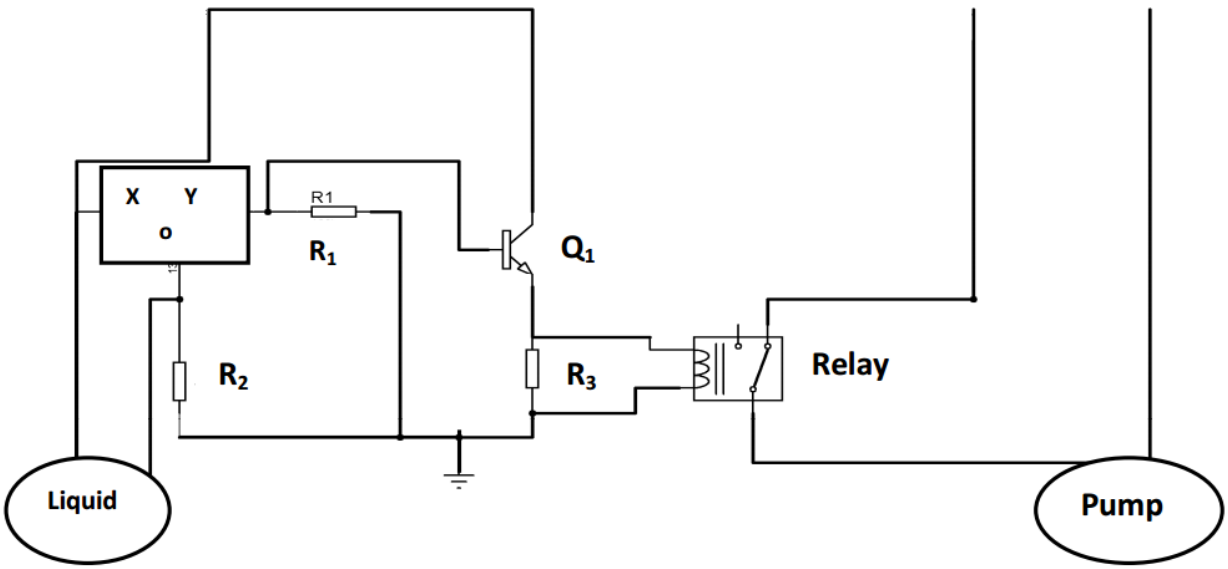


Figure 4: Circuit diagram of the water level controller.

To evaluate the performance of the newly developed water level control system, it was connected to a 0.37 KW (0.5 Hp) AC water pump, which is typical for this application but can be substituted with any similar AC pump. This setup was tasked with managing the water supply to an overhead tank. The system was calibrated to maintain the water level between a maximum of 50 liters and a minimum of 10 liters.

The operational test involved connecting the pump to a control device (regulator), with the water level sensor immersed in the tank and linked to the regulator through well-insulated output cables. The system was initiated to start filling the tank. Upon reaching the predefined maximum water level of 50 liters, the regulator automatically deactivated the pump, halting the water inflow.

Further testing of the system's responsiveness to dropping water levels involved continuously drawing water from the tank. When the water level decreased to the set minimum of 10 liters, the regulator automatically reactivated the pump to replenish the tank. This process demonstrated the system's capability to effectively maintain the water level within the set limits, provided there was a continuous power supply. This test confirmed the functionality and reliability of the water level control system in real-world conditions.

## Conclusion and Recommendations

An automatic water level regulator was developed and constructed at the Karshi Engineering Economics Institute, Karshi, using readily available materials. The core of the device's electronic circuitry features the MC14066 integrated circuit, complemented by other basic electronic components. The reservoir tank was crafted from durable galvanized iron sheet, while the sensor system was securely housed in plastic tubing and submerged in water to monitor levels accurately.

During the performance testing phase, the regulator demonstrated its capability to maintain water levels within a predefined range. This functionality not only showcases its potential to minimize energy and material wastage in various sectors, including process industries and small to medium-sized enterprises, but also highlights its applicability in agricultural settings, homes, and other areas where overhead tanks are commonly used to store water and various ionic solutions. The successful testing and implementation of this regulator suggest its broad utility in enhancing resource management and operational efficiency.

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# DESIGNING A SMART WATER LEVEL DETECTION SYSTEM FOR AUTOMATED PUMP REGULATION

***Azimov Bakhtiyor Allamurod ugli***
*Karshi Engineering Economics Institute,*
*Karshi, Uzbekistan, 180100*

**Abstract.**This research outlines the creation of a microcontroller-based, non-intrusive system for automated water level monitoring using HC-SR04 Ultrasonic sensors and an ATMEGA328P microcontroller. This system employs sound wave reflection to measure water depth in tanks by calculating the Time of Flight (TOF) of ultrasonic waves. The data processed by the microcontroller is displayed on an LCD and controls the water pump via a relay-based output interface. The design is proven reliable through experiments and is versatile enough to monitor other fluids like diesel and hazardous chemicals.

**Keywords:** Automatic Pump Control, HC-SR04 Ultrasonic Sensors ,Liquid Crystal Display (LCD), Microcontroller-based Water Level Monitoring, Sound Wave Reflection Technology, Non-intrusive Fluid Management, Time of Flight (TOF) Analysis, ATMEGA328P Microcontroller, Relay Output Interface Circuits, Fluid Volume and Level Monitoring

## NASOSNI AVTOMATIK BOSHQARISH UCHUN SUV SATHINI ANIQLASHNING AQLLI TIZIMINI ISHLAB CHIQISH

Azimov Baxtiyor Allamurod o‘g’li
Qarshi muhandislik iqtisodiyot instituti, Qarshi, O‘zbekiston, 180100

**Annotatsiya**.Ushbu tadqiqotda HC-SR04 ultratovushli datchiklar va ATMEGA328P mikrokontrolleridan foydalangan holda avtomatlashtirilgan suv darajasini kuzatish uchun mikroprocessor asosidagi, no-intruziv tizim yaratish bayon etilgan. Ushbu tizim ultratovush to‘lqinlarining qaytishi asosida tanklardagi suv chuqurligini o‘lchash uchun ulatovush to‘lqinlari uchish vaqtini (TOF) hisoblaydi. Mikrokontroller tomonidan ishlov berilgan ma’lumotlar LCD ekranda ko‘rsatiladi va relay asosidagi chiqish interfeysi orqali suv nasosini boshqaradi. Dizayn eksperimentlar orqali ishonchli ekanligi isbotlangan va boshqa suyuqliklarni, masalan, dizel va xavfli kimyoviy moddalarning monitoringini amalga oshirish uchun ham mos ekanligi ko‘rsatilgan.

**Kalit so‘zlar:**Avtomatik nasos nazorati, HC-SR04 ultratovush datchiklari, Suyuq kristalli displey (LCD), Mikrokontroller asosida suv darajasini kuzatish, Ultratovush to‘lqinlarining qaytishi texnologiyasi, No-intruziv suyuqlik boshqaruvi, Ulatovush to‘lqinlari uchish vaqtini (TOF) tahlili, ATMEGA328P

mikrokontroller, Relay chiqish interfeysi davrlari, Suyuqlik hajmi va darajasini kuzatish.

## Introduction

Water is an indispensable resource for all forms of life. It originates from several principal natural sources, including rainfall, springs, rivers, and subterranean aquifers. Additional sources such as boreholes and fountains are derived from these primary natural reserves. Water is crucial across various sectors—agricultural, transportation, fishing, and industrial—along with its usage in domestic and recreational activities[1]. To facilitate these applications, water is often pumped from its natural sources into storage units like overhead and underground tanks. This pumping process, however, consumes significant amounts of electricity, necessitating rigorous monitoring to prevent the wasteful expenditure of both energy and water. In many industrial and domestic settings, considerable volumes of water and electricity are squandered, particularly during storage. A common issue in both homes and industries is the late notification of tanks reaching capacity, often only recognized when overflow occurs, which leads to substantial water loss and electrical waste. Addressing this issue is critical in optimizing water and power usage in various domestic, industrial, and governmental water pumping systems.

Numerous strategies have been implemented to address the issue of water and energy waste, involving both mechanical means like ball gates and electronic circuitry, which are often intrusive. Many electronic solutions cited in the literature rely on methods such as dielectric capacitive sensing or metal conducting probes that make direct contact with water at specific intervals, as illustrated in Figure 1[2]. Direct contact with water introduces several complications. Firstly, electrical interaction with water facilitates current transfer between metal contacts through the water, leading to its decomposition into other chemical elements via electrolysis, which alters the water's properties and renders it unsuitable for consumption[3]. Secondly, metals in direct contact with water are prone to corrosion, which diminishes the system's efficiency[4]. Thirdly, to achieve higher resolution and precision, a substantial number of probes are required, making the system significantly intrusive and invasive. Consequently, there is a pressing need to develop a non-intrusive, accurate method for monitoring water levels in reservoirs and intelligently controlling water pumps to minimize waste of both water and electricity.

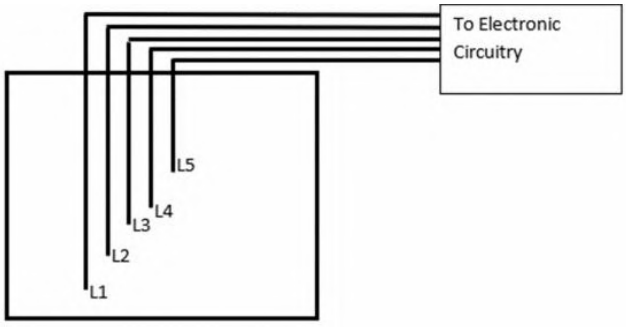


Fig 1. Instrusive water level detection system

## Literature review

Various techniques for detecting liquid levels are discussed in the literature, encompassing methods such as the intrusive probe, capacitive sensing, fiber optics, and infrared technologies. A recent study introduced level detection using an ultrasonic sensor[4], although it did not account for system dynamics and inputs, which may lead to instability. Research detailed in [5] employed copper sensors at specific tank levels to measure water level through the electrical conductivity of water and copper contacts, comparing these measurements against a reference voltage. Further research[7] explored a liquid level sensor using ultrasonic lamb wave technology, observing the characteristics of acoustic lamb waves in steel plates, though system non-linearity made it impractical. An innovative approach using Chipless RFID technology was proposed by the author of [8], utilizing high-quality factor resonators on a flexible laminate without needing sensitive materials, with detection limits depending on the distance between the tag and reader antenna. The study in [9] employed a transistor switching method controlled by a 555 timer to regulate output based on water level and dirt content signals, using a relay to activate the pump only under specific conditions. Conversely, an invasive optical fiber technique for detecting liquids below freezing point involved a multiplexed array of point probes, though it was limited by the need to manage large temperature gradients in liquid vapor[10].

Another study developed a water level controller using metal contacts based on water conductivity, requiring full immersion in the water for measurement, which introduces high intrusiveness and unreliability due to potential corrosion from water-metal contact. This system focused only on detecting maximum and minimum levels, ignoring intermediate water levels, which could limit its practical application[10].

The system introduced here offers a highly efficient, non-intrusive, and contactless method for measuring water levels within a reservoir using an ultrasonic transceiver sensor. This ultrasonic sensor simplifies distance measurement from a target object, boasting high accuracy and a fine resolution of 3mm within its operational range. It operates by emitting ultrasonic pulses in the

form of a frequency square wave from the transmitter. The echo produced by the target is captured by the receiver module, which then generates a signal waveform. The duration of this waveform is directly proportional to the distance between the sensor and the object, enabling precise and reliable water level detection.

## Methodology

The methodology implemented for the hardware development of this system follows a top-down design approach. Initially, the process began with the assembly and testing of the sensors, ensuring their functionality and accuracy. Subsequently, the focus shifted to developing the control system that interprets the sensor data and manages the system operations. This phase was followed by setting up the output interfaces, which involved connecting the various output devices such as displays or actuators. Finally, the last step involved integrating the final output elements that interact directly with the user or other systems. Figure 3.1 below illustrates the block diagram of the top-down design method, providing a visual representation of each developmental stage and their sequential progression.

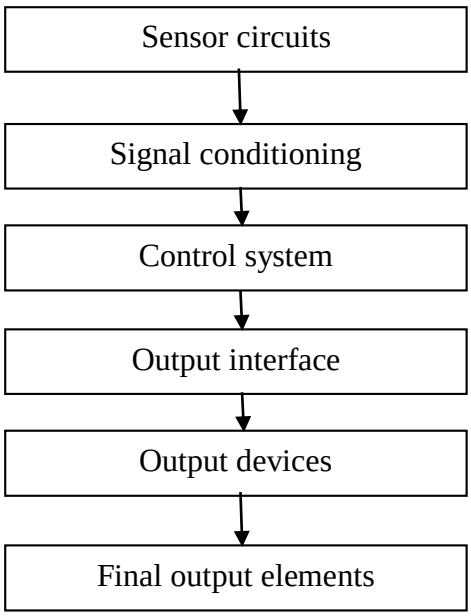


Fig 2. The block diagram for top down design approach

The system utilizes an ultrasonic transceiver module to detect the water level. Signals from this sensor are relayed to the microcontroller for accurate interpretation. This data is then used to calculate the water volume in the reservoir, which is subsequently displayed on the LCD. The core of the control system is the ATMEGA328P microcontroller, along with all necessary components to configure it for optimal functionality. The output interfaces include circuits that convert digital signals from the microcontroller into corresponding analog signals for devices requiring analog inputs, and they provide digital outputs for devices that operate digitally.

The final output components are crucial for executing actions in the real world based on the control system's decisions. In this proposed system, the key final output element consists of relays that switch the water pump ON or OFF as required. Additionally, the software development approach employs pseudo-codes and flowcharts for program design, ensuring that the control system's intended actions are clearly outlined and implemented effectively. This methodical software approach oversees the overall operation of the system, ensuring efficient and reliable functionality.

The successful operation of the hardware relies heavily on the accompanying software that drives it. The sequence of operations designed to resolve a problem or achieve a specific result is often referred to as a control algorithm or pseudo codes. These sequences form the backbone of the control system's actions. A commonly utilized method for illustrating these action sequences is through the use of flowcharts. Alternatively, pseudo coding can be employed, which involves constructing English-like descriptions of the steps the controller is expected to execute. These descriptions serve as the foundational guide for writing the necessary Arduino program codes to manage the system's operations.

A program is essentially a structured sequence of machine-readable instructions, which can be created using either high-level or low-level programming languages. These instructions are compiled and then uploaded to the microcontroller using an Arduino Uno board. Figure 3.2 in the documentation illustrates the control algorithm in the form of pseudo codes, while Figure 3.3 displays the control flowcharts that detail the operational sequence of the system, ensuring a comprehensive understanding of the programming and operational logic integral to the system's functionality.

This sequence forms a loop where the system continually monitors and adjusts the operation of the water pump based on the water level, ensuring efficient management of water resources and power usage. This algorithm can be translated into pseudo code or a programming language like C/C++ for implementation in an Arduino environment, facilitating the control of the hardware setup through the microcontroller.

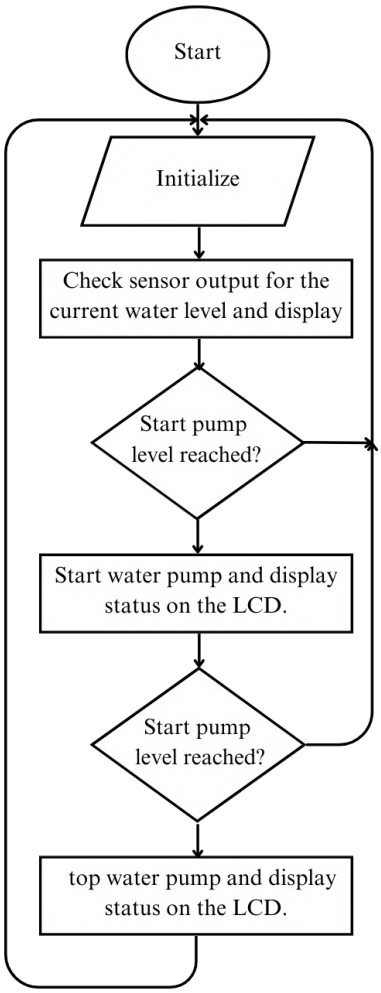


Fig 3. Flow chart

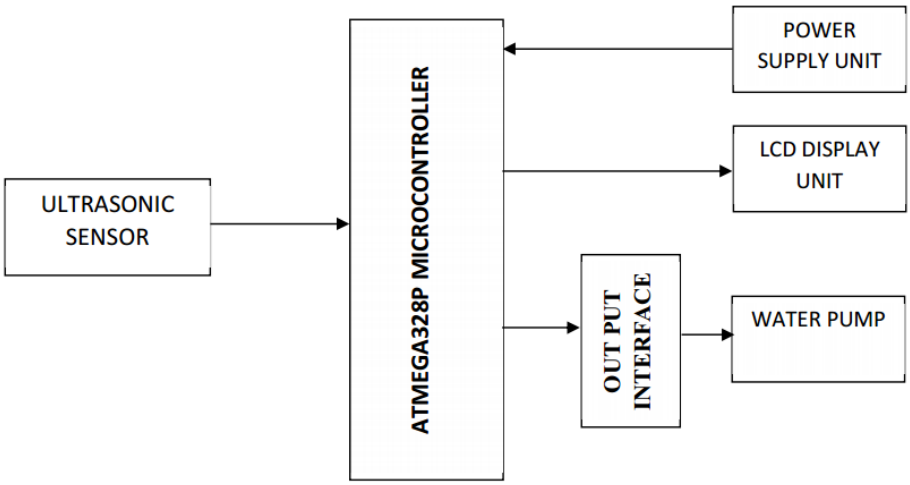


Fig 4. Block Diagram Overview

The block diagram of the proposed system is designed to provide a clear visual overview of the functional components and their interconnections.

Together, these components form an integrated system that effectively monitors and controls the water level in a reservoir, optimizing the use of resources and ensuring operational efficiency.

The intelligent water level monitor designed in this study represents an effective, non-intrusive, and contactless method for assessing water levels in a reservoir using an ultrasonic transceiver sensor. This sensor facilitates convenient measurement of distances from a target, boasting high accuracy within its operational range and offering a fine resolution of 3mm. The process involves the sensor emitting ultrasonic pulses shaped like frequency square waves through its transmitter. These pulses are then reflected back from the target, with the echoes captured by the sensor's receiver module. This receiver generates a signal waveform whose duration is proportional to the distance of the object from the sensor.

The ATMEGA328P microcontroller is integral to this setup, as it interprets the signals received from the receiver and calculates the distance based on these inputs. For this specific application, the HC-SR04 ultrasonic range finder was employed. This device regularly transmits short, high-frequency sonic pulses that travel through the air at sound speed. The ultrasonic waves, like all waves, exhibit the phenomenon of reflection—where a wavefront changes direction at the boundary between two different media, reflecting back to its origin. When these transmitted waves hit an obstacle, such as the water surface in a container, they undergo specular reflection. This reflected wave then bounces back to the sensor receiver, as depicted in Figure 3.5, allowing for precise measurement of the water level. This technology not only ensures accuracy but also avoids any direct contact with the water, maintaining the purity and integrity of the reservoir contents.

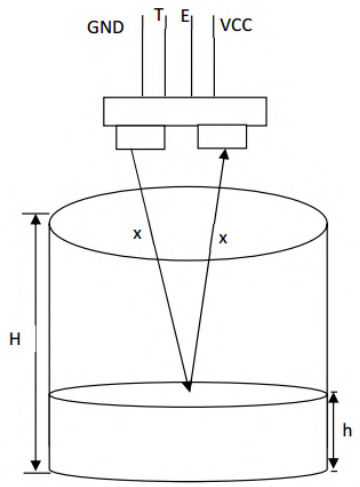


Fig 5. The Setup of the Intelligent water level monitor

The method for determining the water level in a container involves measuring the distance between the sensor and the liquid surface, which reflects the ultrasonic waves emitted by the sensor. As the liquid level decreases, the distance to the sensor increases correspondingly. Crucially, this distance is not measured by the intensity of the sound but by the total travel time of the ultrasonic waves.

To calculate the distance (x) between the sensor and the liquid level, consider the travel time (t) of the waves from the sensor to the liquid surface and back to the sensor. The total travel time, or time of flight, for the ultrasonic burst is represented as 2x. The speed (v) of the sound wave can be expressed by the formula:

$$v = \frac{2x}{t} \quad (1)$$

From this, the distance x can be determined:

$$x = \frac{v \cdot t}{2} \quad (2)$$

Given that the speed of sound in air (v) is approximately 340 m/s, or 34000 cm/s, the formula for instantaneous distance becomes:

$$x = \frac{34000\text{cm/s} \cdot t}{2} = 17000\text{cm/s} \cdot t \quad (3)$$

Thus, equation (3) allows for the calculation of the distance x, in centimeters, from the sensor to an object or surface based on the wave's time of flight.

In terms of the application to a cylindrical water tank where the height (H) of the tank and the radius (r) are known, the maximum volume (Vmax) the tank can hold is derived from the formula for the volume of a cylinder:

$$V_{max} = \pi r^2 H \quad (4)$$

As the water level changes, the current volume (Vi) of the water can be instantaneously calculated based on the current water level (hi), which varies over time from the bottom (h0) to the maximum height (H):

$$V_i = \pi r^2 h_i \quad (5)$$

This equation (5) serves as a straightforward model to convert the detected water level into volume, facilitating real-time display of this information on an LCD. This setup allows for continuous monitoring and efficient management of water resources within the reservoir, providing critical data in an easily interpretable format for users and automated systems alike.

To ensure the functionality and correctness of the software codes, the programming was initially tested using Proteus ISIS software—a comprehensive electronics simulation tool capable of emulating microcontroller circuits. This step allowed for pre-implementation verification of the program in a controlled environment, identifying and addressing any potential issues. After successful simulation, the program was then executed on the actual hardware. The software performed effectively in both the simulated environment and on the physical hardware, confirming the reliability and accuracy of the programming across

different testing platforms. This dual-phase testing approach helped in optimizing the software for real-world application.

The results from the testing of the system's hardware sub-systems are summarized in Table 3.0. The tests conducted and the corresponding results are detailed as follows, ensuring a comprehensive understanding of the system's performance and reliability:

| S/N | Test plan | Expected test result | Actual test result |
|---|---|---|---|
| 1 | Continuity test on the Vero board | There should be no bridging. | There was no bridging. |
| 2 | Power supply voltage 5Vdc at 1A | 5.00V at 1A | 4.95V at 1A |
| 3 | Smoke Sensor Test | Voltage output when smoke is detected. | There was voltage output when smoke was detected |
| 4 | Output relay response | Reliable | Reliable |
| 5 | Feedback speed | Very Fast | Fairly fast |
| 6 | Controller Output port | High= 5V at 10mA | High=4.95V at 10mA |

The results indicate that the system performed well across various tests:

- Continuity Test on the Vero Board: The absence of any bridging confirmed the proper assembly and connection integrity of the circuit on the Vero board.

- Power Supply Voltage: The slight variance from 5.00V to 4.95V is within an acceptable range, indicating stable power delivery.

- Smoke Sensor Test: The sensor correctly responded to the presence of smoke, validating its functional reliability in detecting environmental changes.

- Output Relay Response: The relay consistently performed as expected, showing its reliability in real-world applications.

- Feedback Speed: Although the feedback speed was slightly slower than expected ("Fairly fast" versus "Very Fast"), it remained effective for the system's needs.

- Controller Output Port: The minor variation in voltage at the controller output port is again within acceptable limits, ensuring proper functioning of connected devices.

Overall, the test results support the system's readiness for practical deployment, with minor deviations that do not impact the fundamental operation and safety.

The additional tests conducted on the hardware subsystem encompassed a series of meticulous checks to validate the integrity and functionality of the entire system. Here's a breakdown of each step undertaken and the outcomes observed:

**(a)** Continuity Test:

- Purpose: To confirm the absence of short circuits and open circuits in the system.

- Procedure: After wiring the system, a continuity test was conducted using a multimeter.

- Outcome: The test confirmed that all connections were correctly made without any shorts or open circuits, ensuring the electrical safety and functional reliability of the hardware.

**(b)** Power Supply Verification:

- Purpose: To verify that the necessary voltage levels were supplied accurately at different points of the hardware without the integrated circuits (ICs) installed.

- Procedure: The system was powered up, and voltage levels were measured at various critical points to ensure proper distribution and availability.

- Outcome: The test confirmed that all required voltage levels were correctly supplied, indicating that the power supply subsystem was functioning as designed.

**(c)** Output Interface Testing:

- Purpose: To check the output interface's functionality when supplied with the required voltage level.

- Procedure: The output interface was manually supplied with its requisite voltage level.

- Outcome: The interface operated perfectly under these conditions, confirming its capability to handle operational voltages and perform its intended functions.

**(d)** Control System Validation:

- Purpose: To test the control unit's functionality and its interaction with other system components.

- Procedure: A test program was run using the control unit, involving various operations that required interactions with different units of the system.

- Outcome: All units responded perfectly to the control commands during individual tests, confirming that the control system was properly integrated and functional.

Final System Integration and Testing:

- Purpose: To ensure that all subsystems worked harmoniously when assembled together.

- Procedure: After successful individual tests, all components were integrated, and the whole system was powered up for a comprehensive operational test.

- Outcome: The system functioned flawlessly in this fully assembled state, demonstrating the successful integration of all hardware components and the overall reliability of the system.

These tests are critical for ensuring that each component of the hardware subsystem not only performs its individual function correctly but also interacts appropriately with other components in the system. The successful outcomes of these tests indicate a high degree of readiness for practical deployment and operational reliability.

## Conclusion

The integration of the intelligent water level monitor and automatic pump control system into existing manually operated water pumping systems across domestic, industrial, and official settings is imperative. This addition is not just a step towards modernization but a necessary evolution for enhancing system efficiency and sustainability. By automating the water level monitoring and pump operation, substantial savings can be achieved in terms of water, electricity, and financial expenditures.

This system not only conserves resources but also significantly improves the operational efficiency of water supply systems in homes, offices, and industrial facilities. Automated control reduces the risk of human error and the inefficiency of manual monitoring, ensuring that water pumps operate only when necessary. This tailored operation prevents the pumps from running continuously, thereby minimizing wear and tear and extending the lifespan of the equipment.

Moreover, the intelligent system contributes to environmental sustainability by reducing unnecessary water and energy usage, aligning with global efforts to promote more eco-friendly technologies. In summary, the adoption of this intelligent water level monitor and automatic pump control system represents a critical advancement in water management technology, promising enhanced performance, cost-effectiveness, and reliability for various applications.

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# DEVELOPING ADVANCED FACIAL RECOGNITION SOFTWARE USING VIDEO CAMERAS: TECHNIQUES AND APPLICATIONS

***Hamiyev A.T.[1], Kholiyorov Kh.A.[1]***
*[1]Samarkand branch of Tashkent University of Information Technologies named after Muhammad al-Khwarizmi, Samarkand, Uzbekistan hamiyev91@gmail.com*

**Abstract**

This article explores the development of advanced facial recognition software using video cameras. The focus is on the image processing techniques and biometric technologies employed to enhance facial recognition accuracy. Key methodologies include feature extraction, encoding, and image segmentation, which are essential for identifying and analyzing facial features. The thesis also discusses the creation and implementation of robust algorithms for real-time detection and recognition, emphasizing the software's practical applications in security systems. This comprehensive study highlights the potential of integrating facial recognition technology into various real-world scenarios, offering significant improvements in security and efficiency.

**Keywords:** Facial Recognition, Biometric Technology, Image Processing, Feature Extraction, Video Surveillance, Real-Time Identification, Algorithm Development, Security Systems, Grayscale Conversion, Pattern Recognition, Database Storage, Dynamic Characteristics, Software Development, Facial Features.

## Introduction

Facial recognition technology, powered by advanced algorithms and software, has become a crucial aspect of modern security systems. The graduation thesis titled "Software for Facial Recognition Using Video Cameras" from the Tashkent University of Information Technologies (TUIT) in Uzbekistan addresses the development and implementation of biometric facial recognition software. This article aims to delve into the primary aspects of this thesis, focusing on the methods used for image processing, biometric technology for facial recognition, and the practical applications of the developed software.

***Image Processing Techniques.*** The thesis begins by outlining various methods for processing and recognizing objects in images. It emphasizes the importance of identifying and analyzing the characteristics of image-based objects, such as faces. Key techniques include:

1. *Feature Extraction:* Identifying distinguishing features of an object within an image. For facial recognition, these features may include the eyes, nose, mouth, and facial contours.

2. *Encoding:* Converting these visual features into a digital format that can be processed by algorithms. This involves transforming the spatial and spectral properties of the image into numerical data.

3. *Image Segmentation:* Dividing the image into regions that are easier to analyze. This can involve isolating the face from the background or other objects in the frame.

These processes are essential for the initial stages of facial recognition, ensuring that the system can accurately detect and focus on relevant features.

Here are two analytical tables that summarize key points from the thesis. These tables focus on the image processing techniques and the facial recognition algorithm development discussed in the thesis.

*Table 1: Image Processing Techniques for Facial Recognition*

| Technique | Description | Purpose | Advantages | Challenges |
|---|---|---|---|---|
| Feature Extraction | Identifying distinctive features (eyes, nose, mouth, etc.) | Accurate recognition and comparison | Enhances accuracy and specificity | May be affected by image quality |
| Encoding | Converting visual features into digital format | Data processing and storage | Facilitates efficient storage and retrieval | Potential data loss during conversion |
| Image Segmentation | Dividing image into regions (e.g., isolating face from background) | Focused analysis on relevant features | Reduces computational load | Segmentation accuracy |
| Grayscale Conversion | Transforming color images to grayscale | Simplifying data for processing | Reduces complexity of analysis | Loss of color information |
| Contrast Adjustment | Modifying the contrast levels to highlight facial features | Enhancing visibility of key features | Improves feature detection | Over-adjustment may distort features |
| Filtering | Applying filters to enhance or suppress certain image aspects | Highlighting important details | Enhances feature clarity | May introduce artifacts |

***Biometric Technology for Facial Recognition.*** The second chapter of the thesis delves into the use of biometric technology for facial recognition. Biometrics refers to the statistical analysis of biological characteristics, and in the context of facial recognition, it involves several key components:

1. *Biometric Systems:* These systems use physical or behavioral traits to identify individuals. Facial recognition systems specifically focus on capturing the unique facial features of an individual.

2. *Dynamic Characteristics:* The thesis explores how dynamic characteristics, such as facial expressions and movements, can be used to enhance

recognition accuracy. These characteristics can be tracked over time to create a more robust identification process.

3. *Types of Facial Features:* It categorizes facial features into primary (e.g., overall shape and structure) and secondary (e.g., skin texture, scars, and other distinguishing marks) characteristics. Both types play a crucial role in the accuracy of biometric recognition systems.

***Algorithm Development.*** A significant portion of the thesis is dedicated to the development and implementation of algorithms for facial recognition. These algorithms are designed to:

1. *Initial Processing:* Convert color images to grayscale to simplify the analysis process, as grayscale images reduce the complexity of data.

2. *Feature Enhancement:* Improve the quality of the facial features captured in the image. This may involve adjusting contrast, brightness, and applying filters to highlight key features.

3. *Feature Extraction and Matching:* Use pattern recognition techniques to extract significant features and compare them with stored templates in a database. This step is crucial for identifying and verifying individuals accurately.

*Table 2: Facial Recognition Algorithm Development*

| Stage | Description | Techniques Used | Benefits | Limitations |
|---|---|---|---|---|
| Initial Processing | Converting and preparing raw images for analysis | Grayscale conversion, noise reduction | Simplifies further processing | May lose some detail |
| Feature Enhancement | Improving the quality and visibility of facial features | Contrast adjustment, filtering | Highlights important features | Risk of over-enhancement |
| Feature Extraction | Identifying and isolating significant facial features | Pattern recognition, edge detection | Provides data for matching | Dependent on image quality |
| Feature Matching | Comparing extracted features with stored templates | Template matching, distance metrics | Enables accurate identification | Computationally intensive |
| Database Storage | Storing recognized facial features for future reference | Encoding, database management | Facilitates quick retrieval and comparison | Requires secure and efficient storage |
| Real-Time Processing | Detecting and recognizing faces in live video feeds | Real-time algorithm optimization, multi-threading | Immediate identification and alerts | Requires high computational power |

These tables summarize the techniques and stages involved in developing a facial recognition system, highlighting their purposes, advantages, and challenges. This structured analysis aids in understanding the complexity and multifaceted nature of facial recognition technology.

**Software Development and Practical Application.** The final chapter discusses the development of the facial recognition software and its practical applications. The software aims to perform several key functions:

1. *Face Detection:* Identify and isolate faces in real-time from video feeds.
2. *Conversion to Grayscale:* Simplify image data by converting it to a grayscale format.
3. *Database Storage:* Store recognized faces in a database for future reference and comparison.
4. *Real-Time Notification:* Provide alerts when a recognized individual appears in the video feed.

The software's development followed a structured process, including requirements analysis, design, implementation, testing, and deployment. The primary goal was to create a reliable system that could be integrated into existing security infrastructures, providing real-time monitoring and identification.

## Conclusion

The thesis emphasizes the importance of advanced image processing techniques, the use of biometric characteristics, and the development of robust algorithms. The practical applications of this software are vast, ranging from enhanced security measures to efficient access control systems.

Facial recognition technology continues to evolve, driven by advancements in artificial intelligence and machine learning. The research and development conducted in this thesis contribute significantly to the field, offering insights and solutions that can be applied in various real-world scenarios. As technology progresses, the integration of such systems into everyday applications will likely become more seamless and widespread, enhancing both security and convenience.

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# MODERN TREATMENT OF DELTA INFECTION

***Abdulloev M.Z.***
*Bukhara State Medical Institute named after Abu Ali ibn Sino,*
*Uzbekistan, Bukhara, st. A. Navoi. 1*

**Annotatsiya:** Hepatitis delta virus (HDV) is a satellite virus that infects about 5% of patients with chronic hepatitis B. It is believed that in the world there are about 15-20 million patients with chronic hepatitis D, which is one of the most severe liver diseases with high risk of developing cirrhosis and liver cancer. Pegylated interferon-a remains the only drug approved for the treatment of chronic hepatitis D, although it has low efficacy and a high incidence of adverse events. The study of the basic mechanisms of HDV replication has led to the creation of new classes of drugs that block the entry of the virus into the cell and the assembly of its virion. These drugs are currently being studied in phase II and III studies.

**Kalit so'zlar:** Hepatitis D virus, chronic hepatitis, treatment.

Hepatitis delta virus is a unique virus, the replication of which in the human body depends on the presence of a helper virus, the hepatitis B virus (HBV) [2]. The HDV viral particle consists of a nucleocapsid formed by a single self-protein of the virus, covered by an envelope consisting of HBV surface proteins (large, medium and small S proteins, or HBsAg). Inside the nucleocapsid is the HDV genomic RNA, only approximately 1700 nt long [36]. Chronic viral hepatitis D (HDV) is the most severe form of viral hepatitis in humans [17, 29]. According to the results of numerous clinical studies, HDV is characterized by a more severe course, accelerated the rate of development of liver cirrhosis, an increased risk of developing hepatocellular carcinoma (HCC) and the frequency of decompensation of liver cirrhosis in comparison with patients with HBV without a D-agent [17, 29]. The genetic diversity of the HD virus is related to the geographic origin of the isolates. Currently, based on differences in the genomic RNA sequence of more than 15–20%, 8 genotypes of the virus are identified, designated by numbers (HDV 1–8) [7–9]. HDV genotype 1 is ubiquitous, often isolated in the USA, Europe and the Middle East, and also found in Russia, Africa, Asia and Brazil [10]. HDV-2, formerly known as genotype IIA, is found in Japan, Taiwan and Russia [10, 11]. HDV-3 was isolated in South America (Peru, Colombia, Ecuador and Brazil). This genotype is associated with outbreaks of severe acute HD among the indigenous population of the Amazon. Apparently, HDV-3 is associated with a more aggressive course of infection [12, 13]. HDV-4 occurs in Taiwan and Japan, genotypes 5, 6, **7** and 8 – in Africe [10]. In general, African countries show the greatest genetic diversity in the distribution of HDV, and, presumably, this continent is the place of origin of this virus [14]. HDV infection can

occur simultaneously with HBV (co-infection) or as a superinfection against the background of a patient's pre-existing CHB. Concurrent infection with HBV and HDV can lead to moderate or severe illness or even fulminant hepatitis, but complete recovery usually occurs and chronic hepatitis B with delta infection (ICD-10) rarely develops (in less than 5% of cases of acute hepatitis ) [15]. Like HBV, HDV is transmitted through contact with the blood or other body fluids of an infected person [15]. HDV superinfection in CHB typically accelerates the development of more severe liver damage to the point of advanced fibrosis at any age in 70–90% of people. Observations of patients infected with HDV have shown that in patients with active chronic hepatitis B with delta infection (CHB + D), liver cirrhosis develops faster (10 years earlier) than in patients with HBV monoinfection; Hepatocellular carcinoma (HCC) forms faster, despite the fact that the hepatitis D virus suppresses HBV replication [16]. Intrafamilial transmission of HDV is possible, which is a hidden form of household transmission of infection; it appears to be widespread in HDV-endemic regions, but it should be noted that vertical transmission from mother to child is extremely rare. As a rule, infection of children with HDV occurs at an early age in the form of superinfection against the background of perinatally acquired HBV infection [22].

According to the level of prevalence of HDV infection among patients with CHB, regions of the world can be conditionally classified into one of 4 zones:

- zones of high endemicity – the frequency of anti-HDV exceeds 60%;
- zones of average endemicity – the frequency of anti-HDV is 30–60%;
- low endemicity zones – the frequency of anti-HDV ranges from 10 to 30%;
- zones of very low endemicity – anti-HDV frequency <10% [25].

Areas of very low endemicity – anti-HDV frequency Federations based on the frequency of detection of anti-HDV among HBsAg-positive people are limited. The presented research results relate to determining the frequency of detection of anti-HDV among the general population and in patients with CHB only in some regions of the Russian Federation. It has been shown that the HD virus is relatively rare in the European part of the Russian Federation and is widespread in certain territories of the Asian part of the country - in Tyva, Yakutia, Chukotka, reaching 35% among CHB patients. According to W. Braga [25], infection with HDV genotype 3 is distinguished by a severe course of hepatitis, which is consistent with previously received reports on the characteristics of the course of HDV in those infected with this HDV genotype. HDV infection is also associated with a high risk of developing liver cirrhosis in HIV-infected patients [26, 27]. The pathogenesis of HDV is currently not well understood. Clinical observations support a predominantly immune-mediated mechanism of damage in HDV infection[18]. In a retrospective prospective study by A. Wranke et al. [32] anti-HDV IgM was detected in the majority of patients with chronic HDV infection (85%) and a statistically significant correlation was revealed between the

presence of anti-HDV IgM and the histological and biochemical activity of HDV. The development of long-term outcomes of chronic HDV infection in the form of decompensation, HCC, liver transplantation, and death was noted in 39% of anti-HDV IgM positive patients, and only in 9% of patients with no anti-HDV IgM. In a study by R. Romeo et al. [34], high levels of HDVRNA were associated with an increased risk of developing liver cirrhosis and HCC. Currently, there is no effective antiviral treatment for HD. For 30 years, the only drug used to treat viral HD was interferon-alpha (IFN-α), and since 2006, the use of pegylated interferon-alpha (peg-IFN-α) began [42]. However, as clinical data show studies, a sustained virological response after using the drug, both as monotherapy and in combination with nucleos(t)ide analogues, develops in no more than 23–47% of cases [47]. Interferon-α (IFN-α) is still the only an officially approved antiviral drug for the treatment of chronic HDV infection. However, the effectiveness of interferon therapy does not exceed 20-25%, and the frequency of relapses after completion of treatment, despite the lengthening of its duration, still remains high [7, 8]. Due to the low rate of virological response in patients with HDV, the ultimate goal of interferon therapy, indicating cure is considered to be clearance of HBsAg or seroconversion of HBsAg to HBsAb. Alternative treatment regimens using inhibitors of HBV entry into hepatocytes and prenylation inhibitors are currently at the stage of clinical trials [10-12]. The results of the second study (HIDIT II) have now been summed up, which showed that the use of peg-IFN-α in 24 months in combination with tenofovir did not improve virological response and did not exclude the development of late relapses [49]. It has been shown that the addition of entecavir to peg-IFN-α does not increase the rate of virological response after 24 weeks of treatment [50]. Unfortunately, phase II clinical studies of Mircludex B in combination with peg-IFN-α for 24 weeks showed sustained virological response response in only 1 out of 7 patients [53]. A representative of this group of drugs, lonafarnib, an inhibitor of farnesyltransferase (a cell enzyme that allows isoprenylated large D antigen to join the endoplasmic reticulum) underwent phase II clinical trials from December 2011 to June 2016. Patients (n=14) received lonafarnib 100 or 200 mg/day for 4 weeks. The reduction in viral load was 0.75 and 1.25 log IU/ml, depending on the dose of the drug. A significant side effect was severe dose-dependent gastrointestinal complications [56]. In phase III studies, the addition of ritonavir (a pharmacokinetic enhancer) increased the antiviral effect of lonafarnib and reduced the incidence of unwanted side effects [57]. Thus, modern antiviral drugs reduce the viral load, but practically do not lead to complete elimination of the virus and, as a consequence, cure from HD [58]. Soriano et al. [42] assessed the effectiveness of tenofovir therapy for an average duration of 58 weeks in a similar group of patients (HBV/HDV/HIV) receiving HAART therapy. At the end of treatment, HDV RNA clearance was observed in 53% of patients, but a decrease in HDV DNA levels was not associated with a decrease in HBsAg concentrations . In patients with a virological response, there was a 30%

decrease in liver density according to elastometry results, while in the absence of a virological response, this indicator did not improve. In this study, there was no significant decrease in HBsAg levels, however, 3 patients had clearance of HBsAg and HDV RNA [42] .A. Schieck et al. found that HBV hepatotropy is due to the specific binding of the myristoylated N-terminal pre-S1 domain of the HBV L protein to an unidentified specific receptor on the hepatocyte membrane [52]. The same domain is required for HDV entry into the hepatocyte [53]. P. Chen et al. [54] proposed a role for the above-mentioned sodium taurocholate contransporter peptide (NTCP) receptor based on the identification of a 10-amino acid region in the latter that directly interacts with pre-S1. The drug Myrcludex B (developed by Hepatera) is a lipopeptide extracted from the pre-S1 domain of the HBV virus envelope, which selectively blocks the corresponding receptor and, thereby, the penetration of HBV and HDV into the hepatocyte. It is believed that Myrcludex B prevents infection of hepatocytes, which should lead to a decrease in HDV replication with subsequent complete depletion. The effectiveness of Lonafarnib was studied in the LOWR HDV-1 study, the results of which were presented in April 2015 at EASL (European Society for the Study of Liver Diseases) [57, 58]. The purpose of LOWR HDV-1 was to determine the optimal dosing regimen of the drug, duration of therapy, the effectiveness of combination therapy of Lonafarnib in combination with ritonavir or pegylated IFN α-2a in comparison with Lonafarnib monotherapy, study the pharmacokinetics of the latter, tolerability and safety of therapy. In the absence of effective therapeutic options drugs that allow the elimination of the virus from the body, the only reliable means of controlling HDV infection is vaccination. Since the HDV viral particle, like HBV, contains HBsAg, the humoral immune response to the HBV vaccine fully protects against HDV infection [59]. Mass vaccination against hepatitis B leads to a decrease in the number of people infected with hepatitis B and, as a result, susceptible to HDV. In countries where mass immunization of newborns against HBV has long been introduced, cases of HDV infection among children and adolescents are practically not recorded, and most cases of infection are detected in older age groups [60]. The prevention of HDV infection in CHB patients also remains an unresolved issue. There is no specific vaccine against HDV, despite attempts to create peptide and DNA vaccines based on the HDV antigen. The humoral and T-cell responses to these vaccine preparations were insufficient to protect against HDV superinfection in the woodchuck model [61, 62]. Thus, there are currently no measures of specific protection against HD for patients with CHB. In conclusion, HD still remains an unsolved global health problem. After a long period of underestimating the significance of this infection, an understanding of its relevance has now come. This is due to the increase in population migration from endemic regions, the continued widespread prevalence of HBV in the world and the lack of specific protection against HDV superinfection, as well as limited treatment options for this severe liver disease. The presence of HDV in the world and in other regions indicates

the need to develop special programs for the diagnosis, prevention and treatment of this dangerous infection.

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# ВИРУСЛИ ГЕПАТИТ С ДА ЭТИОТРОП ДАВО САМАРАДОРЛИГИНИ ЎРГАНИШ

***М. З. Абдуллоев***
*Бухоро давлат тиббиѐт институти, Бухоро, Ўзбекистон*

**Таянч сўзлар:** HCV инфекция, ПЗР, софосбувир, даклатасвир.
**Ключевые слова:** HCV инфекция, ПЦР, софосбувир, даклатасвир.
**Keywords:** HCV infection, PCR, sofosbuvir, daclatasvir.

Бухоро вилояти поликлиникаларида диспансер назоратида бўлган 125 нафар беморлар эпидемиологик нуқтаи назардан ўрганилди. Беморларнинг 87 (69.6%) нафарини аѐллар, 38 (30.4%) нафарини эркаклар ташкил қилди. Барча беморлар занжирли полимераз реакция (ЗПР) усули ѐрдамида ўрганилганда 1 – генотипдаги беморлар жами беморларнинг 87,2% (109) ини, 2- генотип 0,8% (1) ини, 3- генотип 12% (15) ини ташкил қилди.

Бевосита вирусга қарши таъсир кўрсатувчи препаратлардан софосбувир ва даклатасвир комбинациясини қўллаш орқали 98,4% ҳолатда вирусларнинг тўлиқ элиминациясига эришилди

## ИЗУЧЕНИЕ ЭФФЕКТИВНОСТИ ЭТИОТРОПНЫХ ПРЕПАРАТОВ ПРИ ВИРУСНОМ ГЕПАТИТЕ

С М. З. Абдуллоев
Бухарский государственный медицинский институт, Бухара, Узбекистан

Изучены эпидемиологические особенности, больных с HCV-инфекцией, которые находились под диспансерным наблюдением в поликлиниках Бухарской области, количество больных 125, из них 87 (69.6%) больных женщин и 38 (30,4%) мужчин. Эпидемиологическая диагностика HCV проводилась путѐм выявления РНК и генотипа вируса HCV инфекции в сыворотке крови методом полимеразной цепной реакции (ПЦР) в реальном времени. Выявлены у 87.2% (n=109) больных первый генотип вируса, 0.8%

(n=1) - второй, 12% (n=15) - третий. Полная элиминация вирусов в 98,4% случаев была достигнута при использовании комбинации софосбувира и даклатасвира, непосредственно из противовирусных препаратов.

## STUDYING THE EFFECTIVENESS OF ETIOTROPIC DRUGS IN VIRAL HEPATITIS C

M. Z. Abdulloev
Bukhara state medical institute, Bukhara, Uzbekistan

Epidemiological features of patients with HCV infection who were under dispensary observation in polyclinics of the Bukhara region were studied, the number of patients was 125, of which 87 (69.6%) were women and 38 (30.4%) were men.

Epidemiological diagnosis of HCV was performed by detecting the RNA and genotype of HCV virus infection in blood serum by polymerase chain reaction (PCR) in real time. The first genotype of the virus was detected in 87.2% (n=109) patients, 0.8% (n=1) the second, and 12% (n=15) the third. Complete elimination of viruses in 98.4% of cases was achieved using a combination of sofosbuvir and Daclatasvir, directly from antiviral drugs.

Вирусли гепатитлар ҳозирги кунга қадар, барча касалликлар бўйича ўлим кўрсаткичи жиҳатидан 7-ўринни эгаллаган ҳолатда, дунѐ бўйича энг долзарб муаммолардан бири бўлиб қолмоқда. ЖССТ нинг сўнгги маълумотларига кўра, 2015 йилда дунѐда гепатит С билан оғриган беморлар сони 71 миллионни (Ер юзи аҳолисининг 1%) ташкил қилади [1].

Ҳар йили 350 миллиондан ортиқ инсон гепатит С билан боғлиқ ҳолатлардан вафот этади. Россияда гепатит С вируси антитанаси популяцияда 0,3% дан 0,7% гача ўзгариб туради ва ѐшга мос ҳолда ортиши ҳам мумкин, 40 ѐшдан катталарда 2,5-4% юқори кўрсаткичларни кўриш мумкин [2].

Сурункали гепатит С ни даволашдан асосий мақсад – жигар зарарланиши ва ВГС юқишининг хавфини камайтириш ортидан, барқарор вирусологик жавоб билан характерланадиган вирусга барҳам беришдан иборатдир [3]. Бевосита таъсирга эга вирусга қарши препаратлар ВГС давосида янги даврни очиб берди. Препаратларнинг бу вакиллари клиник синовларда БВЖ нинг юқори кўрсаткичларини (~90%), қисқа давом этувчи терапия, камроқ токсиклик ва интерферонсиз даво тизими кўрсаткичларини қайд этди [4] Софосбувир + даклатасвир рибавирин билан ва рибавиринсиз даво тизими билан сурункали вирусли гепатит билан оғриган беморларни даволашда юқори самарадорликка эришилган [5].

Замонавий вирусга қарши даволашнинг ютуғи сифатида тўғридан – тўғри вирусга қарши таъсир қилувчи препаратларнинг яратилиши, бемор организмидаги вирусли юклама ва вируснинг генотипига кўра индивидуал равишда даволаш имкониятини яратди [6].

Софосбувир - NS5B РНК-полимеразанинг нуклеозид ингибитори. ВГС нинг 1, 2, 3, ва 4 генотипларини даволаш учун қўлланилади. 1- ва 4 генотип билан касалланган беморлар учун, софосбувир, пег ИФН варибавирин билан биргаликда, 12 ҳафта давомида, 2- ва 3 – генотиплар учун эса фақат рибавирин билан биргаликда 12 ва 24 ҳафта давомида қабул қилинади. Дори воситаси 400мг/сутка дозада, овқатдан кейин буюрилади.

Софосбувирнинг таъсири 1 - авлод дориларига қараганда бирмунча кучлироқ ва ножўя таъсирлари камроқ бўлганлиги, шунингдек препаратни қўллашга қарши кўрсатмаларнинг камлиги туфайли ҳозирги кунда кенг қўлланиниб келинмоқда [7, 8]. Даклатасвир - NS5АРНК – полимеразанинг ингибитори. СВГ С нинг 1,2,3, ва 4 – генотипларини даволашда қўлланилади. Бошқа дори воситалари билан комбинация кўринишида қўлланилади. Ҳозирги вақтда унинг софосбувир (рибавирин ѐки рибавиринсиз), асунапревир ва пег ИФН + рибавирин билан биргаликдаги комбинациялар ишлатилади. Катталарда 30 ѐки 60 мг/сут дозада, фақат комбинация кўринишида қўлланилади. Даво курси 12 – 24 ҳафтани ташкил этади [9, 10, 11].

**Илмий ишнинг мақсади:** Сурункали вирусли гепатит С билан оғриган беморларда амбулатор шароитда вирусга қарши дориларнинг таъсирини ўрганиш.

**Материал ва усуллар.** Тадқиқот учун Бухоро вилоятида яшовчи 18 – 71 ёш оралиғидаги, илгари вирусга қарши даво қабул қилмаган 125 нафар беморлар танлаб олинди. Кузатувдаги беморларнинг 11 нафарини 18-30 ёшгача, 18 нафарини 31-40 ёшгача, 30 нафарини 41-50 ёшгача, 36 нафарини 51-60 ёшгача ва 30 нафарини 60 ёшдан катта бўлган беморлар ташкил қилди.

Беморларни текшириш мужассамлаштирилган режага мувофиқ амалга оширилди, жумладан, вазифаларга мувофиқ шикоятларни баҳолаш, анамнез маълумотларини таҳлил қилиш, объектив ҳолати, лаборатор (қоннинг клиник, биокимёвий таҳлили) ва инструментал текшириш усуллари (УТТ, Фибраскан) ва бирламчи ташҳис ИФТ усули ёрдамида HCV инфекцияси борлигини серологик тасдиқланиши ёрдамида қўйилди. Тадқиқот жараёнида беморлар умумий қон таҳлили MINDRAY BC – 30 (Хитой) гематологик анализаторида, қон биокимёвий таҳлилидаги умумий билирубин, оқсил ва альбумин миқдори ҳамда трансаминаза ферментларининг фаоллиги MINDRAY BA – 88A (Хитой) биокимёвий анализаторида текширилди.

Вирусларнинг сифатий, миқдорий ва генотипик кўрсаткичлари Амплификатор DT LITE аппаратида, ПЗР усули ёрдамида аниқланди.

Барча генотипдаги беморлар софосбувир ва даклатасвир препаратлари комбинациясини 12 ҳафта давомида қабул қилди.

**Натижа ва таҳлил.** Текшириш учун олинган 125 нафар бемор эпидемиологик нуқтаи назардан ўрганилди ва беморларнинг 87 нафарини (69.6%) аёллар, 38 нафарини (30.4%) эркаклар ташкил қилди. ПЗР усули ёрдамида олинган маълумотлар 1- жадвалда келтирилган.

**1 жадвал.**

**Кузатув остидаги беморларнинг генотипик тақсимланиши (%).**

| Генотип/жинс | 1a | 1b | 1ab | 2b | 3a | 3b | 3ab |
|---|---|---|---|---|---|---|---|
| **Аёл** | 11.2 | 48 | 2.4 | - | 2.4 | 0.8 | 4.8 |
| **Эркак** | 4 | 20 | 1.6 | 0.8 | - | 0.8 | 3.2 |

1-жадвал маълумотларига кўра 1 – генотипдаги беморлар жами беморларнинг 87.2% ини, 2- генотип 0.8% ини, 3- генотип 12% ини ташкил қилади.

Кузатув бошланишидан олдин ва 12-ҳафта давомида дори қабул қилгандан кейинги беморлар қон биокимёвий таҳлилидаги ўзгаришлар 2- жадвалда келтирилган.

Софосбувир ва даклатасвир комбинациясини 12 ҳафта давомида ўтказилган антивирус даво натижасида 123 нафар (98.4%) беморларда гепатит С вируси РНК сининг бутунлай йўқолишига эришилди.

**Хулосалар:**

Бевосита вирусга қарши таъсир кўрсатувчи препаратлардан софосбувир ва даклатасвир комбинациясини қўллаш орқали 98.4% ҳолатда вирусларнинг тўлиқ элиминациясига эришилди.

Антивирусли терапиядан сўнг қон биокимѐвий таҳлилидаги қондаги умумий билирубин, оқсил ва альбумин миқдори ҳамда трансаминаза ферментларининг фаоллиги пасайиши кузатилди.

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УДК 616.441 - 008.6 - 053.6 - 007.1

# SARS-COV-2 ПНЕВМОНИЯСИ ВА 2-ТИП ҚАНДЛИ ДИАБЕТ АССОЦИАЦИЯСИДА ИММУНОЛОГИК ВА БИОКИМЁВИЙ КЎРСАТКИЧЛАРНИНГ КОРРЕЛЯЦИОН БОҒЛИҚЛИКНИ АНИҚЛАШ

***Аслонова Маржона Рамазоновна***
*Бухарский Государственный медицинский институт имени Абу Али ибн Сино*

**Долзарблиги.** Коронавирус касаллиги 2019 (COVID-19) - яқинда пандемия деб эълон қилинган коронавирус 2 (SARS-CoV-2) туфайли юзага келган янги тан олинган юқумли касаллик. [13]. COVID-19 дан вафот этганлар сони ортиб бормоқда. 2020-йил 21-апрел ҳолатига кўра, дунё бўйлаб 2 397 217 бемор тасдиқланган ва 162 956 киши вафот этган. Хитойда жами 84,250 та ҳолат аниқланган, улардан 4,642 нафари вафот этган. [14, 8]. Қандли диабет билан ог'риган беморларда COVID-19 хавфи: диабет COVID-19 билан касалланган беморларда энг ко'п учрайдиган касалликлардан бири бо'либ, УСДА СДС томонидан тақдим этилган ма'лумотларга ко'ра, COVID-19 билан касалланган 7162 беморнинг тахминан 10 фоизида мавжуд. . Дунёнинг турли бурчакларида олиб борилган тадқиқотлар шуни ко'рсатдики, COVID-19 билан касалланган беморларда қандли диабетнинг тарқалиши ҳар хил. Буюк Британиядан олинган истиқболли кузатув маьлумотлари COVID-19 билан касалланган 16 749 та ҳолатнинг 19 фоизида асоратланмаган диабетни ко'рсатди. Бирламчи тиббий ёрдам соҳасидаги энг йирик тадқиқот шуни ко'рсатдики, COVID-19 билан касалланган 121 263 беморнинг 9,8 фоизида диабет мавжуд. [5,11,9] Испанияда. SARS-CoV2 инфектсияси хавфининг ортиши масаласи ҳалигача ҳал этилмаган, чунки кўплаб тадқиқотлар умумий аҳоли ва COVID-19 билан касалланган беморларда диабетнинг бир хил тарқалишини ко'рсатди. Қандли диабет умуман инфектсияларга мойил бо'лиши ва SARS-CoV-2 касаллигининг сезувчанлиги ёки хавфи ва ог'ирлигини ошириши мумкин бо'лган бир қанча ўзига хос омиллар ва механизмлар мавжуд. Қандли диабет билан касалланганларда COVID-19 га сезувчанликни ошириши мумкин бо‘лган потентсиал механизмлар орасида гипергликемия роли, ҳужайраларга юқори даражада бог‘ланиш қобилияти ва вируснинг самарали кириши, вирус клиренсининг пасайиши, Т-ҳужайра функсиясининг пасайиши, гиперяллиг‘ланишга сезувчанликнинг ошиши, ситокин бо‘рони синдроми ва юрак-қон томир касалликлари [6,13]. Кроме того, более высокий риск прогрессирования тяжелой пневмонии, вызванной гриппом и SARS-CoV-2, у лис с СД2 [4, 1,14] вируснинг кириб бориши, вирус клиренсининг пасайиши ва ИЛ-6 ва С-реактив оқсил (СРП) нинг ко'пайиши

билан боғ'лиқ [3,15], шунингдек, Т2ДМ билан касалланган одамларда САРС-СоВ2 дан оғир метаболик асоратлар [12] кўпроқ учрайди. инфектсия ва вирусли инфектсиялар диабетга чалинган ва бўлмаган одамларда гипергликемияни ёмонлаштиради [2,7,10].

**Тадқиқот мақсади.** СОВИД-19 ва 2-тип қандли диабет ассотсиатсиясида интерферонлар, ситокинларнинг қондаги яллиғланишнинг биокимёвий медиаторлари билан ўзаро боғлиқлигини аниқлаш.

**Материал ва усуллар.** Тадқиқотда Ковид-марказига айлантирилган Бухоро вилоят юқумли касалликлар шифохонасида САРС-СОВ-2 пневмонияси билан касалхонага ётқизилган 103 патсиент жалб қилинди. 2-тип қандли диабет фонида САРС-СОВ-2 пневмонияси билан госпитализатсияланганларнинг барчасидан оғир пневмония билан оғриган беморлар - 35 (1-гуруҳ), ўртача оғирлик билан - 33 (2-гуруҳ) беморт ташкил қилди. Таққослаш гуруҳи (3-гуруҳ) ҚД билан касалланмаган САРС-СОВ-2 пневмонияси бўлган 35 патсиентдан иборат бўлди. Назорат гуруҳи мос ёшдаги 30 соғлом одамдан иборат эди.

1-гуруҳ беморларининг ўртача ёши 60,2±2,2 ёшни, 2-гуруҳ беморларида-50,0±2,0 ёшни, таққослаш гуруҳида эса -52,4±2,0 ёшни ташкил этди.

**Натижалар.** Корреляция-бу ўзгарувчиларнинг боғлиқликдаги ўзгаришидир. Аниқроғи, корреляция-бу кузатилаётган ўзгарувчилар тақсимотининг боғлиқлигидир.

Корреляциянинг асосий кўрсаткичлари бўлиб уларнинг кучи, йўналиши ва ишончлилиги бўлиб ҳисобланади ҳисобланади. Боғлиқликнинг кучи корреляциянинг мутлоқ қиймати билан белгиланади (0 дан 1 гача ўзгаради). Боғлиқликнинг йўналиши корреляция коэффициентининг белгиси билан белгиланади: ижобий коэффициент - тўғридан-тўғри боғлиқлик; салбий-тескари боғлиқлик. Боғлиқликнинг ишончлилиги статистик аҳамиятлиликнинг p-даражаси билан белгиланади (p-даража қанчалик паст бўлса, боғлиқликнинг статистик аҳамиятлилиги ёки ишончлилиги шунчалик юқори бўлади) [15].

SARS-COV-2 пневмонияси ва 2-тип қандли диабет ассоциацияланган беморларда қоннинг кўпроқ маълумотли клиник ва лаборатор кўрсаткичларини ишлаб чиқиш учун уларнинг асосий касалликнинг башоратини аниқлайдиган боғлиқликн ўрганиш муҳимдир.

SARS-COV-2 пневмония ва 2-тип қандли диабет билан касалланган беморларда қондаги интерферонлар ва цитокинларининг қоннинг умумий ва биокимёвий таҳлили кўрсаткичлари билан ўзаро боғлиқлигини ўрганиш учун уларнинг корреляцион боғлиқлиги ҳисоблаб чиқилган.

Ҳисоблаш натижасида юқори ижобий муносабатлар фонида:

- билирубиннинг боғланган фракцияси ва TNF-γ - (r=0,77), 5.1-расм фонида, қуйидаги жуда юқори салбий муносабатларни аниқладик:

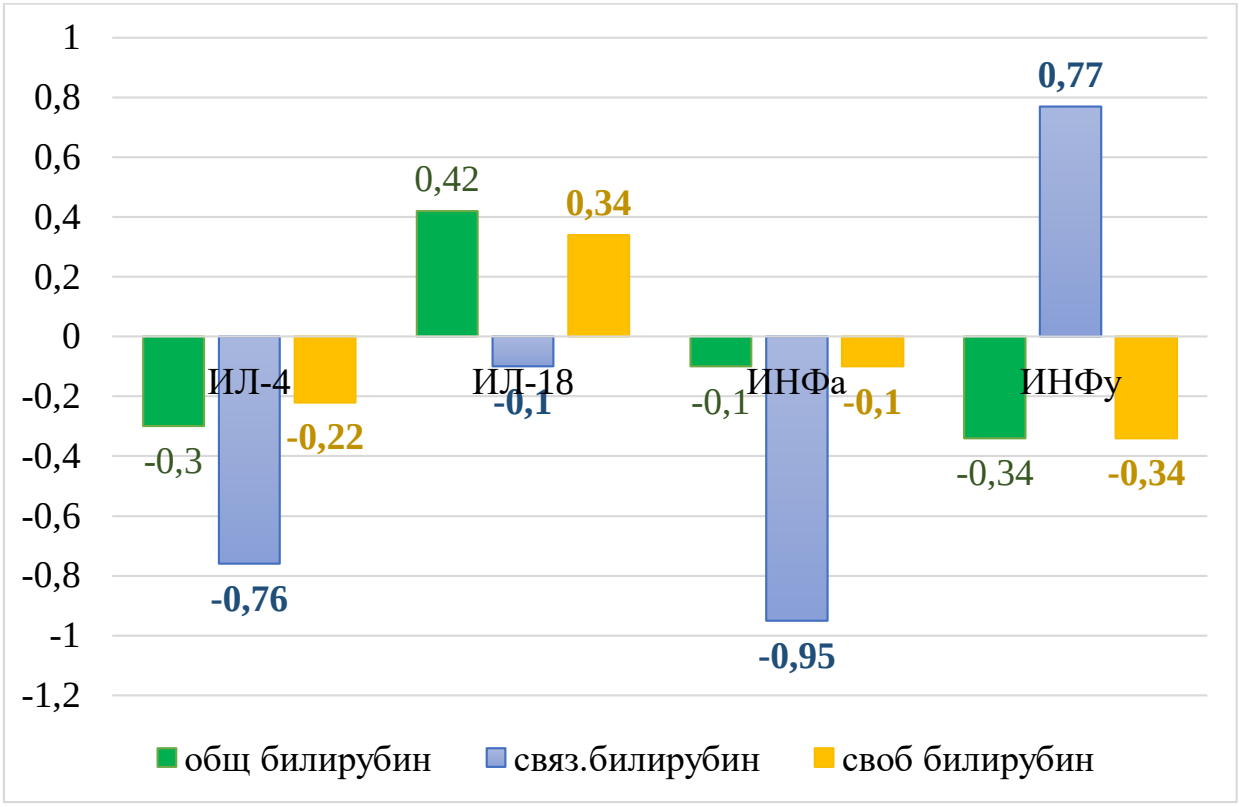
- билирубиннинг боғланган фракцияси ва TNF-a - (r=-0.95),

- билирубиннинг боғланган фракцияси ва IL-4-( r=-0,76), юқори ижобий муносабатлар фонида:

Олинган маълумотлар SARS-COV-2 вирусининг 2-тип қандли диабет билан касалланган беморларда билирубин метаболизмига таъсирини кўрсатади.

Ушбу гуруҳ беморларини ўрганишда, билирубиннинг боғланган фракциясининг ўртача концентрацияси 6,22±0,34 ммол/л (min- 4,0 ммол/л; -max- 8,9 ммол/л) ни ташкил қилди.

Билирубиннинг боғлиқ фракциясининг TNF-γ билан юқори ижобий боғлиқлиги, SARS-COV-2 пневмонияси ва 2-тип қандли диабет билан касалланган беморларда билирубиннинг боғлиқ фракциясининг даражаси қанчалик юқори бўлса, TNF-γ даражаси юқори ва аксинча бўлган деган хулосага келиш имконини берди. Билирубиннинг боғланган фракциясининг йўқлиги паст иммунитетни кўрсатади, бу бизнинг тадқиқотларимизда ушбу гуруҳ беморларига характерли эди.



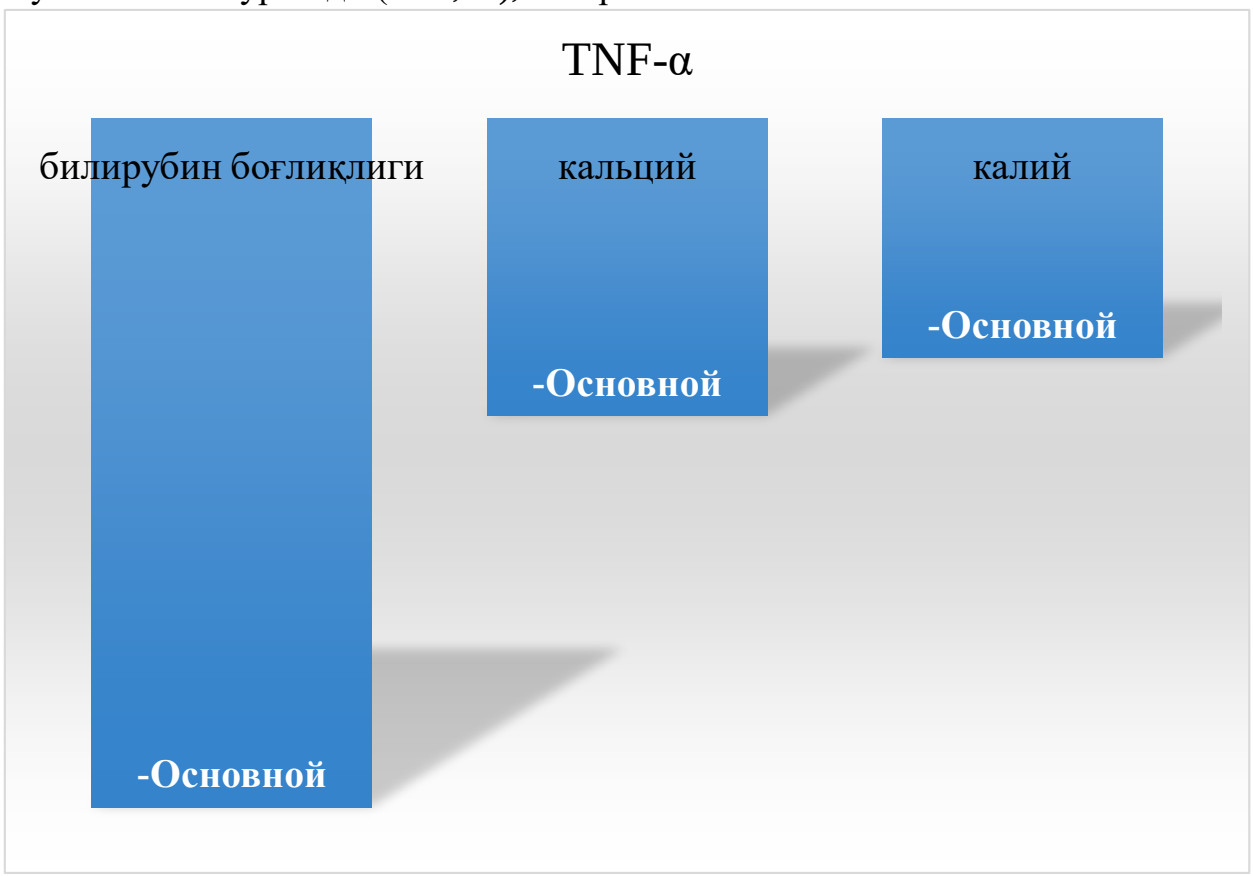

**5.1-расм. SARS-COV-2 пневмониясининг 2-тип қандли диабет билан ассоциациясида билирубиннинг интерферонлар ва цитокинлар билан корреляцион алоқалари**

SARS-COV-2 пневмонияси ва 2-тип қандли диабет билан оғриган беморларда умумий билирубин ИЛ-4 (r=-0,30) ва TNF-γ-r=-0,34 билан сезиларли

салбий боғлиқлик фонида, диабетоген цитокин-ИЛ-18-r=0,42 билан юқори муносабатга эга. Бунда билирубиннинг боғланмаган фракцияси, умумий билирубин каби ИЛ - 4 (r=-0,22) ва TNF-γ r=-0,34 билан сезиларли салбий муносабатларга эга, ИЛ-18- r=0,34 билан сезиларли ижобий боғлиқликка эга, 5.1-расм.

Шуни таъкидлаш керакки, TNF-α фақат билирубиннинг боғланган фракцияси билан боғлиқликка эга (r=-0,95) ва унинг концентрацияси умумий билирубин миқдорига ва унинг эркин фракциясига боғлиқ эмас.

TNF-α корреляциясини таҳлил қилишда қондаги калций даражаси билан юқори салбий боғлиқликни (r=-0,40) ва қондаги калий билан сезиларли салбий муносабатни кўрсатди (r=-0,33), 5.2- расм.




**5.2-расм. SARS-COV-2 пневмониясининг 2-тип қандли диабет билан ассоциациясида интерферон алфанинг корреляцион боғлиқликлари**

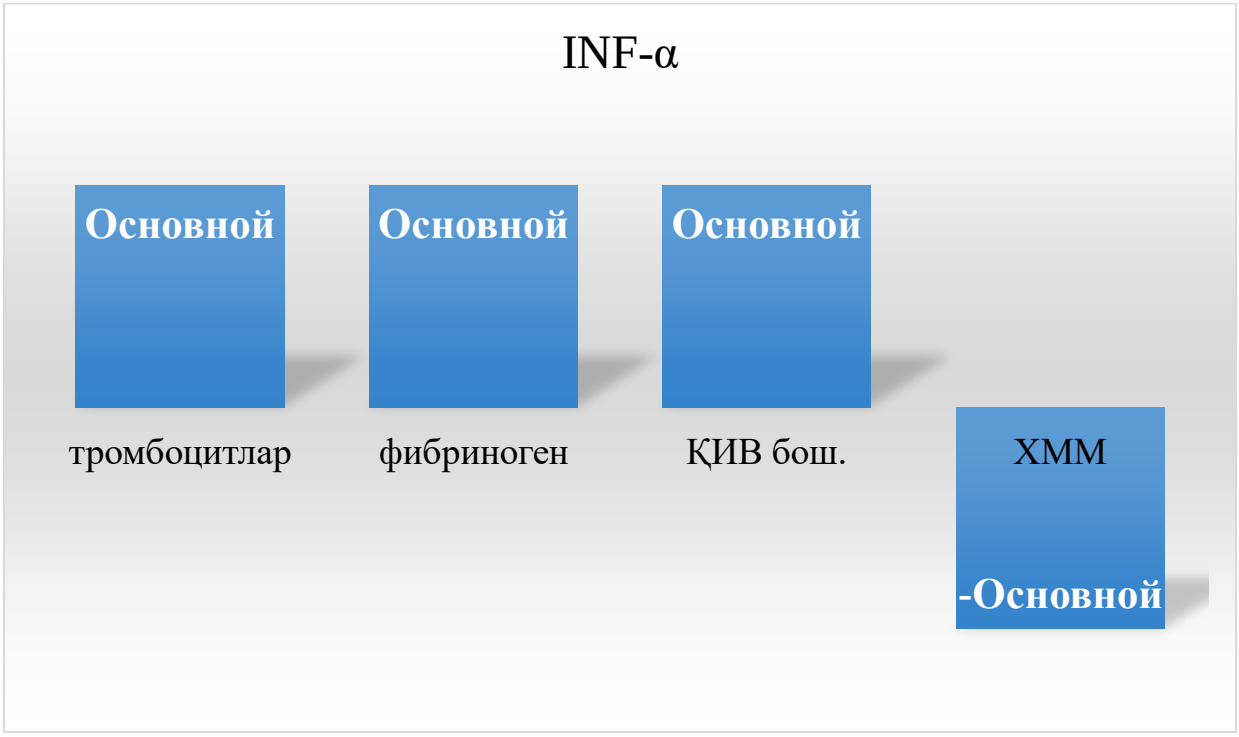
Шу билан бирга, савол туғилди: 2-тип қандли диабетнинг SARS-COV-2 пневмонияси билан ассоциациясида қон реологиясини амалга оширишда TNF-α нинг роли қандай?

TNF-α нинг қондаги калций даражаси билан юқори салбий ассоциацияси ушбу ҳолда унинг коагулограмма кўрсаткичлари билан боғлиқлигини ўрганиб чиқишга асос бўлди. Корреляция TNF-α нинг қуйидагилар билан сезиларли ижобий корреляцион боғлиқлигини кўрсатди:

- тромбоцитлар сони билан-r=0,30;

- фибриноген даражаси билан- r=0,30;

- ҚИВ нинг бошланиши билан-r=0,30, TNF-α нинг сезиларли салбий боғлиқлиги фонида ХММ-r=-0,30 билан, 5.3-расм.

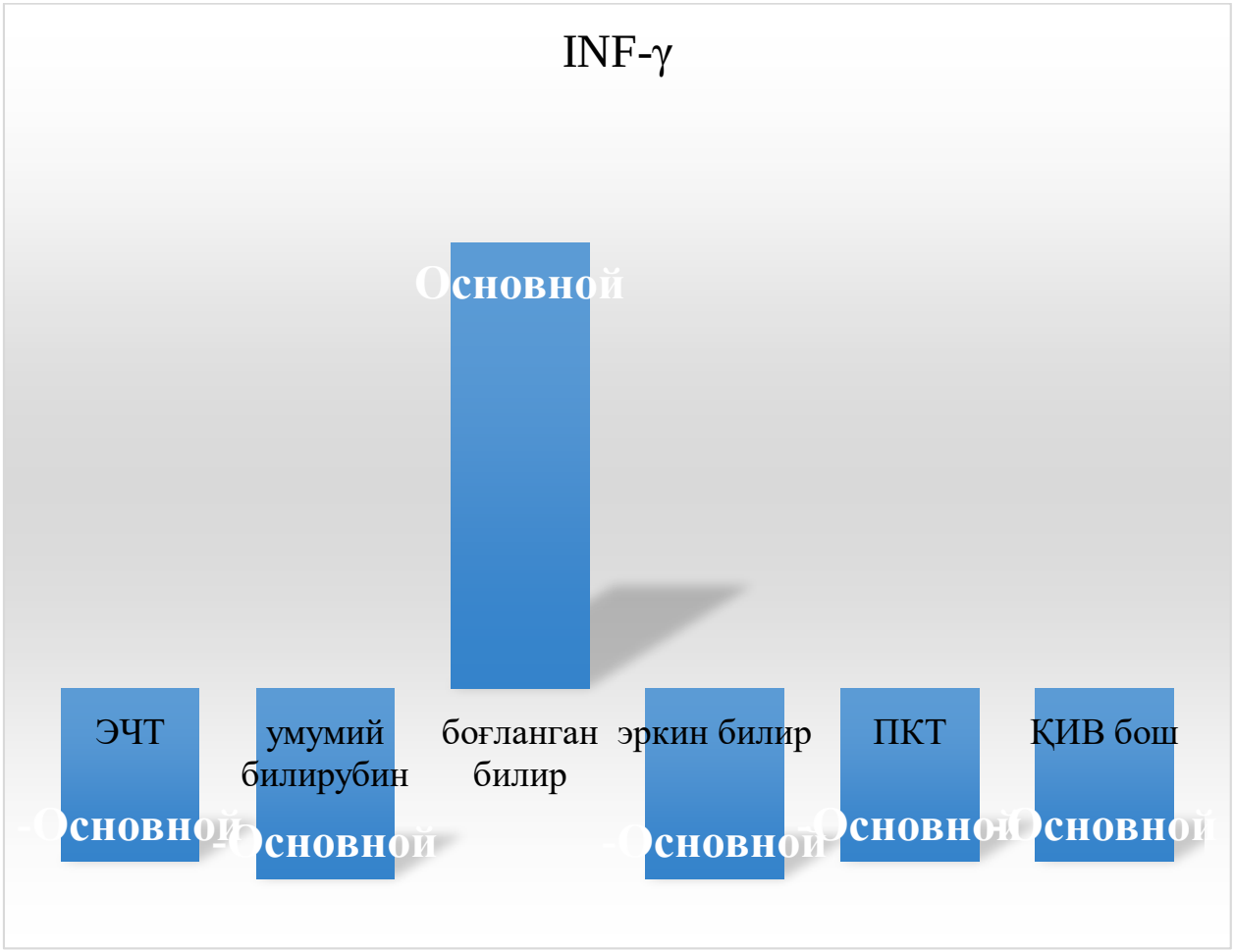



**5.3-расм. SARS-COV-2 пневмониясининг 2-тип қандли диабет билан ассоциациясида интерферон алфанинг корреляцияси**

Бинобарин, SARS-COV-2 пневмониянинг 2-тип қандли диабет билан ассоциациясида, ўз вақтида ташҳис қўйиш ва ҳолатнинг оқибатини башоратлаш учун ХММ бўйича хулоса қилиш имконияти туғилади, бунда ХММ нинг ошиши TNF-α нинг даражасининг пасайиши билан бирга келади ва аксинча, TNF-α нинг паст даражаси ХММ нинг ошишини башоратлайди.

TNF-γ даражасининг қоннинг биокимёвий кўрсаткичлари билан корреляцияси қуйидагилар билан сезиларли салбий боғлиқлик мавжудлигини кўрсатди:

- ЭЧТ-r=-0,30;
- умумий билирубин билан-r=-0,33;
- билирубиннинг эркин фракцияси билан қисми- r=-0,33;
-прокальцитонин билан- r=-0,30;
- билирубиннинг боғланган фракцияси билан юқори ижобий боғлиқлиги фонида-r=0,77, ҚИВ бошланиши билан-r=-0,30, 5.4-расм.



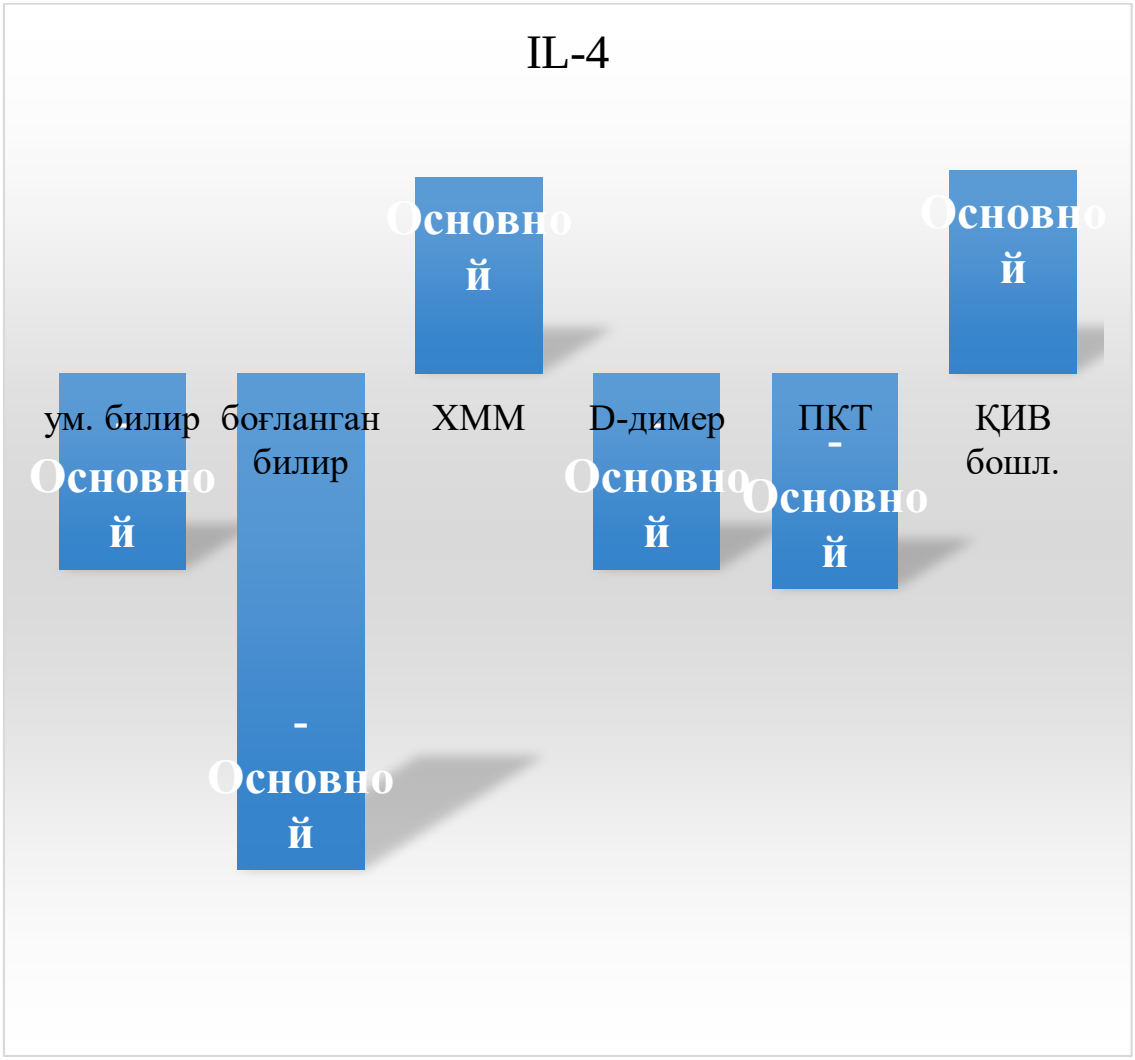

**5.4-расм. SARS-COV-2 пневмониясининг 2-тип қандли диабет билан ассоциирланишида гамма интерфероннинг корреляцион боғлиқлиги**

INF-γ нинг аниқланган боғлиқликлари унинг билирубин алмашинуви тизимида ва қон реологиясида иштирок этишини кўрсатади. ЭЧТ ва гипербилирубинемия қанчалик юқори бўлса, қонда INF-γ даражаси паст бўлади ва аксинча. Шунингдек, қон ивишининг бошланиш вақти сезиларли даражада салбий даражада қондаги INF-γ даражасига боғлиқ ва аксинча.

Унинг қондаги ПКТ билан сезиларли салбий алоқаси SARS-COV-2 пневмонияси ва 2-тип қандли диабет оғриган беморларда бактериал инфекциянинг иккиламчи тўпланишидан ҳимоя қилади.

Шундай қилиб, SARS-COV-2 пневмонияси билан 2-тип қандли диабет ассоциациясида интерферон ҳолатини ўрганиш зарур, бу касалликнинг оқибатини башорат қилиш ва пациентларни олиб бориш тактикасини танлаш имконини беради.

SARS-COV-2 пневмониянинг 2-тип ҚД билан ассоциацияси билан касалланган беморларда яллиғланишни қўлловчи IL-4 ва диабетоген IL-18 даражасининг таҳлили унинг ХММ ва ҚИВ бошланиши билан сезиларли ижобий муносабатлари мавжудлигини кўрсатди, бу мос равишда r=0,3 ва r=0,31 ни ташкил этади, 5.5-расм.




**5.5-расм. SARS-COV-2 пневмониясининг 2-тип ҚД билан ассоциациясида IL-4 корреляцияси**

Шунингдек, IL-4 билан сезиларли қарама-қарши боғлиқликлар мавжуд:

- умумий билирубин даражаси билан- r=-0,3;

- D-димер билан - r=-0,3;

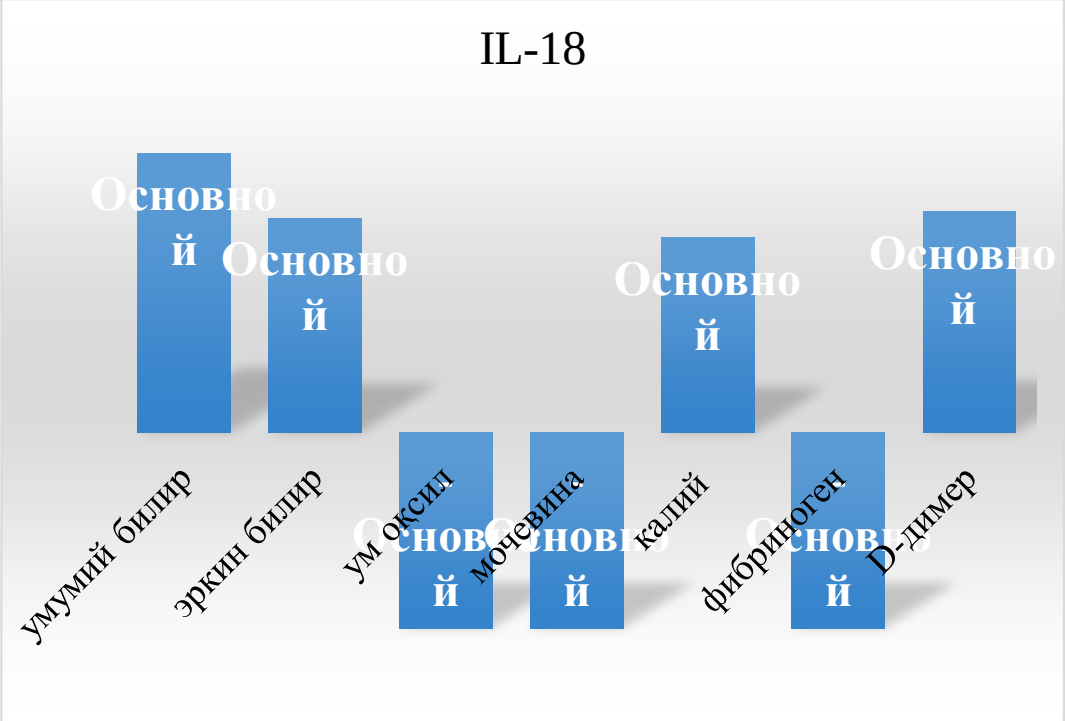
- ПКТ- r=-0,33, боғланган билирубин фракцияси билан юқори салбий ассоциация фонида- r=-0,76, 5.5-расм.

Бинобарин, олинган маълумотлар SARS-COV-2 пневмониясининг 2-тип ҚД билан ассоциациясида қонда билирубиннинг боғланган фракциясининг камайиши ва/ёки йўқлиги яллиғланишни қўлловчи цитокин- IL-4 нинг кўпайишини кўрсатади деган хулосага келиш имконини берди.

SARS-COV-2 пневмониянинг 2-тип ҚД ассоциациясида диабетоген цитокинни таҳлил қилиш унинг сезиларли ижобий муносабатларини кўрсатди:

- билирубиннинг эркин фаркцияси билан-r=0,30;
- қондаги калий концентрацияси билан- r=0,30;

- D-димер концентрацияси билан-r=0,34, умумий билирубин даражаси билан юқори ижобий муносабатларда - r=0,43, 5.6-расм.




**5.6-расм. SARS-COV-2 пневмониясининг 2-тип ҚД билан ассоциациясида IL-18 корреляцияси**

SARS-COV-2 пневмониянинг 2-тип ҚД билан ассоциациясида диабетоген цитокин қуйидагиларнинг даражаси билан сезиларли салбий боғлиқликларга эга:

- қондаги умумий оқсил билан- r=-0,30;
- қондаги мочевина билан-r=-0,30;
- фибриноген билан-r=-0,30.

## ЗАКЛЮЧЕНИЕ

Олинган боғлиқликлар 2-тип ҚД нинг диабетнинг SARS-COV-2 пневмониянинг кечишига таъсирини қуйидаги тарзда кўрсатади: IL-18 нинг камайиши гипопротеинемия, уремия ва гиперкоагуляция ривожланишига кўмаклашади ва аксинча. Шунинг учун SARS-COV-2 пневмонияли беморларни олиб боришда нафақат IL-6, балки IL-4 ва IL-18 ни ҳам инобатга олиш муҳимдир

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## КОРРЕЛЯЦИОННАЯ ВЗАИМОСВЯЗЬ ИНТЕРФЕРОНОВ, ЦИТОКИНОВ С БИОХИМИЧЕСКИМИ МЕДИАТОРАМИ ВОСПАЛЕНИЯ В КРОВИ ПРИ АССОЦИАЦИИ COVID-19 И САХАРНОГО ДИАБЕТА 2 ТИПА

**Аслонова Маржона Рамазоновна**
**Бухарский Государственный медицинский институт имени Абу Али ибн Сино**

В исследование было включено 103 пациентов, госпитализированных по поводу SARS-CoV-2 пневмонии в Бухарской областной инфекционной больнице, которую переорганизована в Ковид-центр. Иммунологические исследования крови больных детей проводились в лаборатории иммуноморфологии института иммунологии и геномики человека АН РУз. Изучены показатели интерферона (ИНФ-а, ИНФ-γ), цитокинов (ИЛ4, ИЛ18) и биохимические анализы в крови.

У больных с SARS-CoV-2 пневмонии и СД 2 типа, общий билирубин имеет высокую связь с диабетогенным цитокином-ИЛ-18- r=0,42, на фоне заметной отрицательной связи с ИЛ-4 (r=-0,30) и ИНФ γ -r=-0,34. При этом свободная фракция билирубина также как общий билирубин имеет заметные отрицательные связи с ИЛ-4 (r=-0,22) и ИНФ-γ r=-0,34, положительная заметная связь имеет с ИЛ-18- r=0,34

У больных с SARS-CoV-2 пневмонии и СД 2 типа, общий билирубин имеет высокую связь с диабетогенным цитокином-ИЛ-18- r=0,42, на фоне заметной отрицательной связи с ИЛ-4 (r=-0,30) и ИНФу-r=-0,34.

**Ключевые слова:** SARS CoV-2, пневмония, сахарный диабет 2 типа, пневмония, интерферон,цитокин

## CORRELATION RELATIONSHIP OF INTERFERONS, CYTOKINES WITH BIOCHEMICAL MEDIATORS OF INFLAMMATION IN THE BLOOD IN THE ASSOCIATION OF COVID-19 AND TYPE 2 DIABETES MELLITUS

**Aslonova Marjona Ramazonova**
**Bukhara State Medical Institute named after Abu Ali ibn Sino**

The study included 103 patients hospitalized for SARS-CoV-2 pneumonia at the Bukhara Regional Infectious Diseases Hospital, which was reorganized into the Covid Center. Immunological studies of the blood of sick children were carried out in the laboratory of immunomorphology of the Institute of Human Immunology and

Genomics of the Academy of Sciences of the Republic of Uzbekistan. The indicators of interferon (INF-a, IFN-γ), cytokines (IL4, IL18) and biochemical tests in the blood were studied.

In patients with SARS-CoV-2 pneumonia and type 2 diabetes, total bilirubin has a high relationship with the diabetogenic cytokine IL-18 - r = 0.42, against the background of a noticeable negative relationship with IL-4 (r = -0.30) and INF γ -r=-0.34. At the same time, the free fraction of bilirubin, like total bilirubin, has noticeable negative connections with IL-4 (r = -0.22) and IFN-γ r = -0.34, and has a significant positive connection with IL-18 - r = 0.34

In patients with SARS-CoV-2 pneumonia and type 2 diabetes, total bilirubin has a high relationship with the diabetogenic cytokine IL-18 - r = 0.42, against the background of a noticeable negative relationship with IL-4 (r = -0.30) and INFu-r=-0.34.

**Key words:** SARS CoV-2, pneumonia, type 2 diabetes mellitus, pneumonia, interferon, cytokine

## COVID-19 ВА 2-ТИП ҚАНДЛИ ДИАБЕТ АССОЦИАЦИЯСИДА ИНТЕРФЕРОНЛАР, ЦИТОКИНЛАРНИНГ ҚОНДАГИ ЯЛЛИҒЛАНИШНИНГ БИОКИМЁВИЙ МЕДИАТОРЛАРИ БИЛАН ЎЗАРО БОҒЛИҚЛИГИ

**Аслонова Маржона Рамазонова**
**Абу Али ибн Сино номидаги Бухоро давлат тиббиёт институти**

Тадқиқотда Ковид-марказига айлантирилган Бухоро вилоят юқумли касалликлар шифохонасида SARS-COV-2 пневмонияси билан касалхонага ётқизилган 103 пациент жалб қилинди. Ўзбекистон Республикаси Фанлар академияси Одам иммунологияси ва геномикаси институтининг иммуноморфология лабораториясида беморларнинг қонини иммунологик текшириш ишлари олиб борилди. Қондаги интерферон (ИНФ-а, ИФН- γ), цитокинлар (ИЛ4, ИЛ18) ва биокимёвий тестлар кўрсаткичлари ўрганилди.

SARS-COV-2 пневмонияси ва 2-тип қандли диабет билан оғриган беморларда умумий билирубин ИЛ-4 (r=-0,30) ва TNF-γ-r=-0,34 билан сезиларли салбий боғлиқлик фонида, диабетоген цитокин-ИЛ-18-r=0,42 билан юқори муносабатга эга. Бунда билирубиннинг боғланмаган фракцияси, умумий билирубин каби ИЛ - 4 (r=-0,22) ва TNF-γ r=-0,34 билан сезиларли салбий муносабатларга эга, ИЛ-18- r=0,34 билан сезиларли ижобий боғлиқликка эга.

**Калит сўзлар:** SARS CoV-2, пневмония, 2-тоифа қандли диабет, пневмония, интерферон, цитокин

# YUZ YILLIK URUSH VA UNING QAHRAMON QIZI JANNA DARK

*Murtazayeva Fotima Otabek qizi*
*Toshkent davlat pedagogika universiteti talabasi*
*fmurtazayeva04@gmail.com*

**Annotatsiya:** O'rta asrlarda G'arbiy Yevropaning eng yirik davlatlaridan hisoblangan Fransiya va Angliya bu davrlarda markazlashish sharoitida turgan edi. Ular o'rtasida hududiy, iqtisodiy kelishmovchiliklar mavjud bo'lib, bu keyinchalik ingliz monarxiyasining sulolaviy davosi bahonasida boshlangan yuz yillik urushga olib keldi. Ushu " Yuz yillik urush-Janna d'Ark " nomli maqolada manashu yuz yillik urush davomida bo'lgan voqealar va urushni ayni burulish pallasida xalq qahramoni sifatida maydonga chiqqan jasur qiz Janna d'Ark haqidagi voqealar batafsil yoritilib o'tilgan. U o'zining jasur, matonatlik bo'lganligi sababli ham hamon insoniyat tilidan tushurmay madh etib kelinmoqda.

**Kalit so'z:** Flandriya, Orlean, Orlean qizi, Filipp IV, Karl VI, Sena, monarxiya, Janna d'Ark, Domremi, Dyuran Laksar, Jon Dorn, Kashon.

O'rta asrlarda Fransiya va Angliya o'rtasidagi uzoq davom etgan mojaroning yakuniy va eng og'ir bosqichi Yuz yillik urush (1337-1453) bo'ldi. Fransuzlarning ko'lab hududi inglizlarning qo'lida uzoq muddat bo'lishi faqat ishlab chiqarish va savdoning qisqarishigina emas, aholi sonining kamayishiga ham olib keladi. Harbiy mojarolarni keltirib chiqargan ziddiyat o'choqlaridan biri ingliz qirollarining ota meros- Akvitaniya, ayniqsa uning g'arbiy qismi Giena bo'lgan. Markazlashayotgan Fransiya qirolligi uchun inglizlarning Gienadan uzul-kesil chiqarib yuborish muhim bo'lsa, Angliya aksincha, faqat Akvitanityani saqlab qolish emas, balki XIII asrda qit'ada qo'ldan ketgan yerlarni qaytarishni o'zining bosh maqsadi deb bilgan. Yuz yillik urush ingliz monarxiyasining sulolaviy davosi bahonasida boshlanib, shu tahlit davom etdi. Fransiya qiroli Filipp IV ning o'g'illaridan so'nggisi merosxo'r qoldirmasdan 13w8-yil vafot etdi. Angliya qiroli Edudar III Filipp IV ning qizidan nabirasi sifatida Fransiya taxtiga o'z davosini e'lon qiladi. Fransiyada esa Xoldvig davridan qolgan yer-mulkni, tojni faqat erkak merosxo'rga qoldirish mumkinligi haqidagi qonunni ro'kach qilib, " Sali haqiqati " ga asosan, Eduard III ning talabini rad etishadi. Toj-taxt Kapetinglarning yon shox vakili Filipp VI Valuaga ( 1328-1350 ) beriladi. Bu vaziyatda Eduard III o'z huquqini qurol yo'li bilan amalga oshirishga qaror qiladi. Harbiy mojaro Yevropa qit'asidagi eng yirik urushga aylanib, unga turli ittifoqlar siyosiy kuchlar va mamlakatlar: Angliya tomonida Germaniya, Flandriya, Aragon va Portugaliya; Fransiya tomonidan - Kastiliya, Shotlandiya va papalik jalb etiladi. Urushda ishtirok etgan mamlakatlar ichki taraqqiyoti bilan bog'liq qator davlatlar va birlashmalarining Fransiya va Angliya, Angliya va Shotlandiya, Fransiya

va Flandriya, Kastiliya va Aragonning hududiy chegaralanish masalasi ham qo'yilgan. Angliya uchun u o'z tarkibiga turli xalqlarni kiritgan unversal davlat tashkil etish masalasiga, Fransiya uchun esa, mustaqil davlat tarkibida saqlanib qolish muammosiga aylandi. [1] (1)Yuz yillik urush jang harakati juda sekillik bilan bordi. Urush rasmiy suratda 1337-yil boshlanadi. Flanfiriya va u bilan qoshni Baraband Angliya tomoniga o'tdilar. Flandriya grafi fransuz koroli tomoniga qochib o'tdi. Urush to'xtabto'xtab yuz yildan ortiq davom etib, unda ko'plab jang to'qnashuvlar , qo'zg'olonlar bo'lib o'tdi va buning natijasida xalq holdan toydi. Fransuzlar janglarda asosan mag'lubiyatga uchiradi. Ingliz qiroli Genrix V qulay vaziyatdan foydalanishga qaror berib, 1415-yilda yana urush harakatlarini boshlab yubordi. U o'sha zamonda g'oyat katta hisoblangan 600 ming kishilik qo'shin , Sena daryosi mansabiga kelib tushdi. Fransuz hukumati 100ming kishilik lashkar to'pladi, lekin uning harbiy mahorati g'oyat past edi. 1415-yilning kuzida ibgliz qo'shinlari bilan fransuz qo'shinlari Azinkurga ( Pikardiyaga ) yaqin joyda to'qnashganda fransuzlar yana qattiq mag'lubiyatga uchiradilar. Inglizlar deyarli Parijga yaqinlashib qoldilar va gersog Burgundiskiyning ko'magida Karl VI hukumatiga juda tahqirli sulh shartnomalarini qabul qilishga majbur etdilar.1420-yilgi Trua shartnomasiga ko'ra, Wngliya bilan Fransiya umumiy korol qo'l ostida bitta korollikka birlashdilar. Karl VI vafot etgandan keyin tez orada uning qizi Yekaterinanaga uylangan Genrix V har ikkala mamlakatning koroli bo'lishi kerak edi. 1422-yil avgust oyi oxirida Genrix V 36 yoshida to'satdan qazo qildi. Shu yilning oktyabrida fransuz korolligi tarafdori bo'lgan Burgundiskiy ham to'satdan vafot etdi. Genrix V bilan Yekaterinaning 10 oylik o'g'li Genrix VI Angliya va Fransiyaning koroli deb e'lon qilindi. Luara daryosinong janubidagi kichkina Burj shahri bir necha yilgacha Karl VII ( o'zini fransuzlar qiroli deb e'lon qilgan) poytaxti bo'lib qoldi. Fransiyaning shimoli va janubi ikki raqib mamlakatga aylanib qoldi. 1428-yil inglizlar Orleanni qamal qilmoqchi bo'ldilar. Agar Orlean olinsa, inglizlarning Fransiya janubiga yanada hujum qilisha yo'l ochilgan bo'lar edi. [2] (2)

O‘z manfaatlarini ko‘zlagan Burgundiya, Bretan gersogliklari inglizlar tomoniga o‘tib ketgan bir paytda, oddiy xalq ko‘tarilib bosqinchilarga qarshi partizanlik urushi boshlanadi. Xuddi mana shunday Fransiya uchun hayot-mamot davrida tarix sahnasiga Janna d Ark chiqadi. Janna d Ark 1412 yili Shampan va Lotaringiya chegarasidagi Domremi qishlog‘ida Jon Dorn degan dehqon oilasida tug‘ilgan. 1429-yilning yanvarь oyida Janna amakisi Dyuran Laksar bilan uydan qochib chiqib, inglizlarga qarshi kurashayotgan fransuz armiyasiga kelib qo‘shiladilar. Bu yerda Janna uni taxt vorisi Karl huzuriga kuzatib qoyishlarini so‘raydi va faqatgina u Fransiyani ozod qilib, qirolga toj kiydira olishini aytadi. 1429 yilning martida Karl VII ning qasrlaridan birida uni qirol qabul qiladi. U ritsarlik qurol-aslahasini taqib, otda qo‘shinni aylanib chiqib, Orlean yonida urush harakatlarini boshlashga da'vat etadi. Janna fransuz qo‘shini ichida intizomni ko‘tarishga chaqirdi va dushman bilan kurashda o‘zi katta pahlavonlik

ko‘rsatdi. Orlean 1429 yilning 5 mayida ozod qilindi va Jannani «Orlean qizi» deb atashdi.[3](3)

Janna o‘zini xudo Fransiyaga yuborgan haloskordek his qilardi.Janna o'zini Fransiyaning halaskori deb eion qilganda dastlab odamlar unga ishonmay, ustidan kulishdi. Hatto otasi ham qizimga biror narsa boigan boisa kerak, deb unga uydan tashqariga chiqishini taqiqdab qoyadi. 1429-yilning yanvar oyida Janna va amakisi Dyuran Laksar uydan qochib chiqib, inglizlarga qarshi kurashga tayyoigarlik ko‘rayotgan fransuz armiyasiga kelib qo‘shiladilar. Bu yerda Jama uni taxt vorisi Karl huzuriga kuzatib qobyishlarini so'raydi va g'oyibdan bir ovoz kelib «faqatgina u Fransiyani ozod qilib, qirolga toj kiydira olishini aytadi». Oldin unga ishonmaydilar va qaytib ketishini maslahat beradilar. Nihoyat, qizning qat’iyligini ko‘rgan taxt vorisi Kctrl unga fransuz armiyasining taqdirini topshiradi. Xo‘sh, Janna d’Arkning fransuz xalqi va tarixi oldidagi xizmati nimadan iborat?Janna d’Ark fransuz xalqiga vatanparvarlik namunasini ko‘rsatadi: xalqning ruhini namoyon etdi.Janna d’Ark fransuz armiyasini orqasidan ergashib bora oldi. Tabiat uni lashkarboshilik talanti bilan taqdirlaganligini namoyish etdi; u armiyaning tushib ketgan kayfiyatini, ruhiyatini ko‘tardi.Reyms shahrida qirolga toj kiydirish bilan Karlning fransuz qiroli ekanligini rasmiylashtirdi. Bu xizmati evaziga Karl tomonidan Jannaning oilasi keyinchalik dvoryanlik unvoni bilan taqdirlandi.1429-yil 29-aprel kuni Orlean shahriga kirib kelish bilan Fransiya hududidan inglizlarni hay dab chiqarishni boshlab berdi.Angliyaning Fransiya ustidan hukmronlik rejasi amalga oshmay qoldi.

To’g’ri his-tuyg’ularga amal qilgan Janna tez orada Karlga Reyms shahrida toj kiyish marosimini o’tkazishga maslahat berdi. Karl bu maslahatni qabul qildi. Karl VII ning toj kiyish marosimi muvaffaqiyatli o’tdi va bu Fransiyaning qonuniy koroli bolgan Karlning obro’ e’tiborini darhol ko’tardi. So’ngra Janna d’Ark urush harakatlarini tezlashtirish va Parij tomonga yurish qilishni qattiq turib korolga taklif qildi. Ammo Orlean to’dasi bu ishni paysalga sola boshladi. Dehqon qizning maslahatlariga quloq soldilar-u, lekin bu maslahatlar bajarilmadi. Unga hatto o’zini xavfga soluvchi mayda-mayda harbiy operatsiyalarni bajarish topshirildi. Shunday operatsiyalarning birida ( Kompen shahrini mudofaa qilish paytida ) burgundiyaliklar Jannani asr qilib olib so’ngra uni katta aqchaga inglizlar qo’liga topshirdi. [4](2)

Yepiskop Kashon boshchiligidagi sud Jannani afsungarlikda ayblaydi. Karl VII Jannani o‘limdan qutqazishni xayoliga ham keltirmaydi. Tribunal tomonidan dahriylikda ayblangan Janna d Ark 1431 yilning 30 mayida Ruan shahri markaziy maydonida gulxanda yoqib yuboriladi. Inglizlar Jannani inkvizitsiya yordamida o‘ldirishdi, lekin uning g‘oyasini yo‘q qila olmadilar. Janna yoqilgan joyda o‘rnatilgan oq but bugunga qadar ham mavjud.[5] (3)

Janna d’Ark vafot etsa ham uning vatanparvarlik ishi o’z samarasini berdi. Ayni payyda go’dak korol davrida va harbiy muvaffaqiyatsizliklar sharoitida inglizlar lagerida feodallarning ayrim to’dalari o’rtasidaichki kurash tobora ko’proq

keskinlashib bordi. 1435-yilda gersog Burgundskiy ingliz-fransuz to'dasi bilan tuzgan ittifoqini bekor qildi. 1436-yilda Karl VII Prijga kirib keldi. 40-yillarda inglizlardan Giena va Normandiya batamom qaytarib olindi. Ular qo'lida birgina Kale porti qoldi. Garchi urushuvchi tomonlar o'rtasida rasmiy sulh shartnomasi tuzilmagan bo'lsa ham lekin Yuz yillik urush 1453-yilda to'xtadi. Shu tariqa urush tugadi. [6] (2)

Yuz yillik urushning natijalari. Yuz yillik urush 1453-yilda Angliya va Fransiya o'rtasida sulh tuzilishi bilan yakunlandi. Inglizlar qoiida faqat Kale porti qoldi, xolos.Urushda Fransiya katta talafot ko'rdi: aholining qariyb 1/3 qismi qirilib ketdi, juda ko'p yerlar xarobaga aylandi. Shu bilan birga urush fransuzlardagi milliy tuyg'uni uyg'otdi, inglizlarga qarshi kurashga ko'ngilli boiib otlanganlaming soni tobora ko'payib bordi. Mamlakatda vatanparvarlik toiqini kuchaydi. Gersog Burgundskiy inglizlardan butunlay yuz o'girdi va Fransiya qiroli bilan kelishuv sulhini tuzdi.Urush davrida urush xarajatlari bilan bogiiq soliqlarning yangi turlari paydo boidi. Bularning ichida Karl V II davrida joriy etilgan talya deb atalgan soliq juda ahamiyatlidir. Sababi, bu soliq keyinchalik IVansuz qirolligida. dehqonlar va shaharliklaming daromadlaridan olinadigan doimiy soliqqa va qirollik xazinasini boyitadigan asosiy manbalardan biriga aylandi.[4]

**Xulosa:**

O'rta asrlarda Angliya va Fransiya davlatlari o'rtasida yuz bergan yuz yillik urush tanaffuslar bilan yuz yildan ko'p davom etdi. Urush Fransiyaning ko'plab shaharlari vayron bo'ldi, davlatning janubi bilan shimoli o'rtasida anchagacha savdo-sotiq ham olib borilmadi bir tomondan urush Fransiyaning markazlashuviga turtki bo'ldi. Urushda fransuzlarning ko'p bora mag'lubiyatidan so'ng xalq ommasidan Janna d'Ark maydonga chiqdi Qiz bola bo'lishiga qaramay 17 yoshida jangda katta muvaffaqiyatlarga erishib " Orlean qizi " degan nomga ega bo'ldi. Shu sababli inglizlarning ayyorligi tufayli ularning qurboni bo'ldi. Uning halok bo'lishi keyingi janglarda xalqni uyg'otib g'alaba bayrog'iga aylandi.

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# PLASMAPHERESIS AND ITS MECHANISMS IN THE TREATMENT OF ACUTE RADICULONEUROPATHY SYNDROME: EFFECTIVENESS OF THE METHOD

***Khaitov D.Kh, Bozorov A.N.***
*BUKHARA STATE MEDICAL INSTITUTE*

**Abstract:** This review examines the important role of plasmapheresis in the treatment of acute radiculoneuropathy syndrome (ARN). ORN is a neurological disease characterized by inflammation and degeneration of peripheral nerves. Plasmapheresis, as a procedure for purifying plasma from the blood, plays a key role in reducing the concentration of harmful antibodies and inflammatory mediators, which helps slow the progression of neuropathy and improve the clinical symptoms of acute respiratory failure. The potential effectiveness of plasmapheresis in the treatment of ARF is confirmed, but further research is needed to optimize its use and increase understanding of the mechanisms of action.

**Key words:** plasmapheresis, acute radiculoneuropathy syndrome, peripheral nerves, antibodies, inflammation, treatment effectiveness.

**Acute radiculoneuropathy syndrome (ARN)** is a neurological disease characterized by inflammation and degeneration of peripheral nerves. This condition can present with a variety of symptoms, including pain, numbness, weakness and paralysis. Treatment of ORN is a challenge for the medical community, and one method that is gaining attention is plasmapheresis.

**Plasmapheresis is** a procedure aimed at purifying plasma from the blood in order to remove harmful factors such as antibodies circulating in the blood. In the context of ORN, plasmapheresis may play a key role in reducing inflammation and suppressing the immune response that can lead to peripheral nerve damage.

The mechanism of action of plasmapheresis in acute respiratory failure is based on the removal of pathogenic antibodies and other inflammatory mediators from the blood. Reducing their concentrations in the blood can help slow the progression of neuropathy and improve clinical symptoms in patients.

**Method for studying** the role of plasmapheresis in the treatment of acute radiculoneuropathy syndrome: mechanisms and effectiveness.

**Purpose of the study:** To evaluate the effectiveness of plasmapheresis in the treatment of acute radiculoneuropathy syndrome and analyze its mechanisms of action.

**Subject of the study:** Patients diagnosed with acute radiculoneuropathy syndrome undergoing plasmapheresis treatment.

**Material and method:**

1. Patient Selection: Patients diagnosed with acute radiculoneuropathy syndrome will be selected according to clinical criteria, including symptoms and results of additional testing (eg, electromyography).

2. Grouping: Patients will be randomly divided into two groups: an experimental group that will receive plasmapheresis treatment in combination with conventional therapy, and a control group that will receive conventional treatment alone.

3. Plasmapheresis: Patients in the experimental group will undergo plasmapheresis using standard protocols and equipment.

4. Evaluate effectiveness: Clinical parameters (eg, pain level, muscle strength, range of motion) and the results of additional studies (eg, electromyography) will be assessed before treatment, after each plasmapheresis session and at the end of the course of treatment.

5. Statistical Analysis: The obtained data will be analyzed using appropriate statistical methods to compare the results between the experimental and control groups.

Expected Results: Plasmapheresis in combination with conventional therapy is expected to result in more rapid improvements in clinical parameters and electrophysiological parameters in patients with acute radiculoneuropathy syndrome compared with controls.

**Conclusion** The proposed research methodology will allow us to evaluate the role of plasmapheresis in the treatment of acute radiculoneuropathy syndrome and to better understand its mechanisms of action and effectiveness.

This is only an example of the study methodology, and specific details may vary depending on goals, available resources, and patient characteristics.

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# IOT PLATFORMALARIDA KAM ENERGIYA SARFLAB MA'LUMOTLARNI UZATISH MODELLAR VA ALGORITMLAR TAHLILI

***Saidmurotov Sulaymon Ollaberganovich***
*Muhammad al-Xorazmiy nomidagi Toshkent axborot texnologiyalari universiteti Urganch filiali*
*Sulaymon.ollaberganovich@gmail.com*
***Bozarov Xudoyshukur Omonboy o'g'li***
*Muhammad al-Xorazmiy nomidagi Toshkent axborot texnologiyalari universiteti Urganch filiali*
***Sharifboyeva Roza***
*Muhammad al-Xorazmiy nomidagi Toshkent axborot texnologiyalari universiteti Urganch filiali*
***Ollanazarov Jamshidbek Sotimboy o'g'li***
*Muhammad al-Xorazmiy nomidagi Toshkent axborot texnologiyalari universiteti Urganch filiali*
*jamshidbekollanazarov@outlook.com*

## ABSTRAKT

IoT rivojlanayotgan texnologiya sifatida sanoat, ishlab chiqarish va boshqa sohalar uchun katta qiziqish uyg'otadi. IoT tugunlari kichik qurilmalar bo'lib, quvvat odatda batareyalar tomonidan ta'minlanadi. IoT tugunlari tomonidan to'plangan ma'lumotlar shlyuz serveriga uzatiladi, u ma'lumotlarni jamlashi va ma'lumotlarni keyingi qayta ishlash uchun bulutli platformaga yuborishi mumkin. IoT tugunlari keng maydon bo'ylab tarqatilganda, shlyuz serveridan uzoqda joylashgan tugunlar ma'lumotlarni multi-hops orqali shlyuz serveriga o'tkazishi kerak bo'ladi. Quvvatni yaxshiroq iste'mol qilish va tugunning ishlash vaqtini oshirish uchun keyingi yo'naltirish tugunini bir nechta nomzod tugunlar orasidan eng yuqori quvvat darajasi bilan tanlash mumkin. Ushbu maqolada biz ma'lumotlarni uzatish modelini tahlil qilamiz. Taklif etilayotgan model keyingi uzatish tugunini tanlash uchun mavjud quvvat darajasiga qo'shimcha ravishda ish yukini hisobga oladi. Bizning izlanishlarimiz shuni ko'rsatadiki, tanlangan keyingi yo'naltirish tugunlari boshqa nomzod tugunlarga nisbatan kamroq quvvat darajasiga ega bo'lsa ham uzoqroq ishlaydi. Ushbu yaxshilanish tarmoq barqarorligini oshirishi va ma'lumotlarni uzatish paytida yo'qolgan paketlar sonini kamaytirishi mumkin.

## Kirish

IoT texnologiyasini ishlab chiqish va turli obyektlarni IoT orqali ulash bilan biz atrofmuhit haqidagi ma'lumotlarni turli qurilmalar o'rtasida almashishimiz va aqlli platforma yaratishimiz mumkin. Qurilma yohud platformada IoT tugunlari seziladi va

uning muhitidan ma'lumotlarni to'playdi. Ishlab chiqilgan aqlli platforma aniqlik bilan odamlarning o'zaro ta'sirini kamaytiradi orqali ma’lumotlarni yig’ish va uzatish kabi ishlarni bajaradi [1,2]. Aqlli shahar, aqlli uy, aqlli ferma, aqlli sog’liqni saqlash va shu kabi turli aqlli tizimlarda buni ko’rishimiz mumkin.

Umuman olganda, IoT qurilmalarida ishlov berish va yetkazib berish uchun energiya kabi cheklangan resurslar mavjud [3]. Agar IoT tugun bo'lsa to'g'ridan-to'g'ri elektr aloqasi bo'lmagan muhitda foydalanish kerak, uning ishlashi uchun batareyalar kerak. Batareya qishloq xo'jaligi dalalari yoki yovvoyi tabiat qo'riqlanadigan hududlar kabi keng hududda joylashtirilgan IoT tugunlarini almashtirish jarayoni qiyin yoki ba'zan imkonsiz bo'lishi mumkin. Ushbu muammoni hal qilish uchun qanday qilib tushirish bo'yicha ko'plab tadqiqotlar o'tkazildi simsiz sensorlar tarmog'ida batareya iste'moli (WSN) batareya cheklovlari bilan sensorli texnologiya sifatida va bir nechta batareyadan samarali foydalanishni yaxshilash uchun algoritm va usullar ishlab chiqildi. WSN IoTning bir qismi sifatida ishlatilishi mumkin turli xil IoT platformalarini ishlab chiqish texnologiyasi. Turli marshrutlash algoritmlarini ishlab chiqish, masalan, opportunistic marshrutlash [4] va ochko'z algoritmlar [5] sensorli tarmoqlarda quvvat sarfini yaxshilashi mumkin. Rivojlanishdan tashqari marshrutlash protokollari, sensor tarmoqlarida klasterlash texnikasi - bu sensor kuchini kamaytirishga yordam beradigan yana bir yondashuv tarmoqning uzoq umrini oshirish uchun iste'mol [6]. Ushbu tadqiqotda biz muvozanat uchun ma'lumotlarni uzatish modelini taklif qilamiz IoT tugunlari o'rtasida ma'lumotlarni yo'naltirish, bu tarmoqda yaxshi quvvat sarflanishiga olib kelishi mumkin. Biz IoT platformalarida ma'lumotlarni uzatishning ba'zi usullarini ko'rib chiqamiz. IoT ma'lumotlarini uzatish texnikasi Quvvat sarfini kamaytirish va simsiz tugunning ishlash muddatini oshirish uchun turli xil algoritmlar va modellar kabi ochko'z marshrutlash, opportunistik marshrutlash, ekspeditsiya va klasterlash usullari ishlab chiqilgan. "Energy balanced position-based routing for lifetime maximization of wireless sensor networks." maqolasi [7]da ma’lumotlarni tayanch stansiya tomon yo‘naltirishni muvozanatlash uchun keyingi tugunni yo‘naltirishni tanlash funksiyasi ishlab chiqilgan. Tugunning qoldiq energiyasi va geografik joylashuvi kabi bir qancha omillarni hisobga olish orqali ma'lumotlarni keyingi tugunga samarali yo'naltirish mumkin. Dijkstra algoritmi va tarmoqning ishlash muddatini yaxshilashi mumkin. Ma'lumotlarni eng qisqa yo'l orqali yo'naltirish va ma'lumotlarni boshqa yo'llar orqali yo'naltirish [8] da o‘rganiladi. Ushbu yondashuv quvvat sarfini kamaytirish bilan birga ma'lumotlarni marshrutlashda yuk muvozanatini qo'llashi mumkin bo’lgan barcha tugunlar orasidagi umumiy yo'l yoki eng qisqa yo'lni tavsiflaydi. Geografik marshrutlashda paketlar mahalliy ma'lumotlar asosida belgilangan manzilga yetkaziladi. Bunda energiyadan xabardor marshrutlash bilan ma'lumot [9] da ya’ni “Sensor Networks and Cooperative Control” maqolasida taklif qilingan. Ushbu modelda paketlarni yo'naltirish uchun keyingi tanlangan tugun tayanch stantsiyaga qarab qoldiq tugun energiyasi va uning nishondan masofasi

yordamida aniqlanadi. Oportunistik marshrutlashda marshrutlash uchun bir nechta qo'shni tugun nomzodlari mavjud va opportunistik algoritm ular orasidan eng yaxshi keyingi uzatish tugunini topadi [10]. Geografik opportunistik marshrutni yo'naltirishda model, nomzodlar joylashuv ma'lumotlari asosida ustuvor hisoblanadi. Geografik ma'lumotlar energiyani tejash va tarmoqli kengligi, bu yerda u tugunni aniqlash uchun ishlatiladi. Energiya samaradorligi deb ataladigan mahalliy metrikani qo'llash orqali taklif etilgan yondashuv simsiz ma'lumotlarni uzatish uchun quvvat sarfini yaxshilashi mumkin [11]. Klasterlash usullari WSN va IoT platformalarida quvvat sarfini yaxshilashning yana bir yondashuvidir tarmoqning ishlash muddatini oshirish uchun algoritmlar ishlab chiqilgan [6]. Klasterlash texnikasining g'oyasi – bu tarmoqni bir nechta tugunlar guruhiga bo'lish. Klaster bosh tugunlari deb ataladigan har bir guruhda bitta tugun mavjud va bu tugun har bir klasterdagi tugunlardan ma'lumotlarni yig'ish va jamlangan ma'lumotlarni tayanch stantsiyaga yuborish uchun javobgardir [12]. Bosh klaster tomonidan to'plangan ma'lumotlar to'g'ridan-to'g'ri tayanch stantsiyaga [12] yoki har bir klaster boshiga uzatilishi mumkin va ma’lumotlarni keyingi klaster boshiga tayanch stansiya tomon yo‘naltiradi [13]. Boshqa nomzod tugunlari orasidan klaster boshini tasodifiy tanlash kam quvvat manbai bo'lgan tugunni tanlashi mumkin va unga qo'shimcha ish yukini qo'shishi mumkin. Klaster boshi tanlovi nomzod tugunlar orasidagi qoldiq energiya darajasini hisobga olgan holda [14] da o'rganilgan. Tarmoqning uzoq umr ko'rishini va mavjud energiya darajasini klasterdagi omil sifatida hisobga olgan holda tugunning ishlash muddatini yaxshilash bosh tanlash jarayoni hisoblanadi. Klaster boshini tanlash uchun asosiy stansiyagacha bo'lgan masofa va tarmoqni tekislash parametrlari sifatida ko'rib chiqilgan [15] da. Har bir klasterda to'plangan ma'lumotlar tayanch stantsiyaga yaqinroq bo'lgan keyingi klaster boshiga uzatiladi va mahalliy tayanch tugun vazifasini bajaradi. Natijalar ma'lumotlarni to'g'ridan-to'g'ri bazaga yo'naltirish bilan solishtirganda yaxshi quvvat sarfini ko'rsatadi. Ikkita klaster boshlarini tanlash usuli [16] ma’lumotlarni uzatishda energiya sarfini ikkita klaster boshi o‘rtasida taqsimlaydi. Bu tarmoqdagi quvvat sarfini kamaytiradi va ma'lumotlarni uzatishda o'lik tugunlar sonini kamaytirdi. Ushbu tadqiqotda tavsiya etilgan model WSN va IoT platformalarida klasterli va klasterli bo'lmagan ma'lumotlarni uzatish uchun qo'llaniladi. Endi biz taklif qilingan modelni batafsil bayon qilamiz. Taklif etilgan model. IoT tugunlari energiyani turli bosqichlarda sarflaydi: ma'lumotlarni sezish, ma'lumotlarni qayta ishlash va ma'lumotlarni marshrutlash. Sensor bosqichida energiya iste'moli atrof-muhit ma'lumotlarini yig'ish uchun dastur va sensorlar bilan bog'liq bo’ladi. Namuna olish tezligi va atrofdagi shovqin bu jarayon orqali iste'mol qilinadigan energiya miqdoriga ta'sir qilishi mumkin. To'plangan ma'lumotlarning tabiati yuqori namuna olish tezligini talab qilmasa, quvvat sarfini kamaytirishga yordam berish uchun namuna olish tezligi sozlanishi mumkin. Ish aylanishi - bu ma'lumot yig'ishda ishtirok etmayotganda tugunni o'chirish orqali batareyani tejashga qaratilgan yondashuv. Biroq, ish davrlarini

samarali tarzda qo'shish uchun tugunni ishga qaytarish uchun boshlang'ich energiya sarfini hisobga olish kerak. Har bir tugun ma'lumotlarni qayta ishlash jarayonida quvvatni ham iste'mol qilishi mumkin, bu esa ma'lumotlarni uzatishga nisbatan ancha kam energiya talab qiladi. Shunday qilib, mahalliy ma'lumotlarni qayta ishlash keyingi tugunga o'tkazish uchun zarur bo'lgan ma'lumotlar hajmini kamaytirishi va ma'lumotlarni uzatishda quvvat sarfini kamaytirishi mumkin. Ma'lumotlarni sezish va qayta ishlashdan tashqari, har bir IoT tugunlari ma'lumotlarni uzatishda ishtirok etishi mumkin. Bunday holda, har bir IoT tugun o'zining to'plangan ma'lumotlarini keyingi IoT tuguniga yo'naltirishi kerak, shuningdek, u boshqa tugunlardan olingan ma'lumotlarni shlyuz serveriga o'tkazish uchun javobgar bo'lishi mumkin. IoT tugunida energiya iste'molining asosiy qismi ma'lumotlarni uzatishga to'g'ri keladi [17]. Taklif etilayotgan model IoT tugunlari o'z to'plangan ma'lumotlarini to'g'ridan-to'g'ri shlyuzga yo'naltira oladigan shlyuz serveri qamrovida bo'lishi mumkin. kirish nuqtasi yoki ma'lumotlarni shlyuz tomon eng yaqin tugunga uzating. Qoldiq energiya sifatida o'rganilgan bir nechta yondashuvlarda tugunning ishlash muddatini oshirish uchun keyingi yo'naltiruvchi tugunni tanlash omili [14, 7, 13]. Batareya darajasi yuqori bo'lgan tugun keyingi ma'lumotlarni uzatish tuguniga yaxshi nomzod bo'lsa-da, bu omil tugunlar o'rtasida quvvat sarfini oshirish uchun boshqa parametrlarni hisobga olgan holda yaxshilanishi mumkin. Eng ko'p kuch sifatida iste'mol ma'lumotlar uzatish bosqichida bo'lsa, ko'proq ma'lumot uzatishda ishtirok etadigan tugun o'z kuchini tezroq yo'qotadi. Qo'llaniladigan sensorlarning xilma-xilligi tufayli to'plangan ma'lumotlar turli o'lchamlarga ega bo'lishi va turli miqdorlarni iste'mol qilishi mumkin uzatish paytida energiya. Ma'lumot to'plashdan tashqari, qabul qilingan ma'lumotlarni uzatish uchun o'rni tugunlari javobgardir. Qo'shimcha ish yuki uning quvvatini tezroq sarflashi mumkin. Ushbu muammoni hal qilish uchun a ni tanlang Keyingi yo'naltiruvchi nomzod tugunlari orasida kamroq ish yukiga ega bo'lgan o'rni tugunlari rele tugunining ishlash vaqtini oshirishi mumkin. Uning tugundagi qoldiq quvvatini va joriy ish yukini hisobga olgan holda tanlash omili sifatida uzatish tugunini ishlab chiqilgan [19]

Eksprimental natijalar va muhokama. Taklif qilingan modelni OMNeT++, INET 4.1.1 yordamida 1-jadvaldagi parametrlar bilan amalga oshirilgan.

*Jadval 1. Simulyator parametrlari*

| Parametrlar | Qiymat |
|---|---|
| tarmoq maydoni | 1000 m * 1000 m |
| tugunlar soni | 20 |
| tugunning dastlabki energiyasi | 1.0 J |
| Simulyatsiya vaqti | 100 s |
| Paket hajmi | 1 KB |

IoT tarmog'ining istalgan qismida bo'lishi mumkin bo'lgan shlyuz serveri bor deb taxmin qilamiz. Taklif qilingan modeldagi barcha tugunlar ma'lumotlar to'plash talablari asosida sohada taqsimlanadi va ular o'zlarining geografik o'rnini bilishlarini taxmin qiladilar.

Gateway serveriga yaqin bo'lgan tugunlar tarmoqdagi boshqa tugunlarga nisbatan ko'proq ma'lumot uzatishi kerak. Bunday holda, yig'ilgan ma'lumotlarni jo'natish bilan bog'liq tugunni yo'qotish shlyuz serveri ko'proq ma'lumotlarni yo'qotishiga olib kelishi mumkin. Xulosa Ushbu maqolada biz IoT platformasida shlyuz serveriga ma'lumotlarni uzatish uchun yo'naltirish tugunini tanlash uchun yangi tanlov omilini tahlil etdik. Taklif etilayotgan model yo'naltirish ma'lumotlarini muvozanatlash uchun nomzod tugunlari orasidagi mavjud qoldiq energiya va ish yukini hisobga olgan holda keyingi uzatish tugunini tanlaydi. Taklif etilgan modelni qo'llash orqali biz tarmoq barqarorligini muvaffaqiyatli oshirishimiz mumkin. Shlyuz serveri tomonidan qabul qilingan paketlar miqdori ham oshirildi, ya'ni taklif qilingan modelda paketlarni yo'qotish kamroq bo'ladi. Ushbu tadqiqotdagi bizning hissamiz boshqa tugunlarga nisbatan pastroq quvvat darajasiga ega bo'lishi mumkin bo'lgan bir nechta nomzod tugunlar orasidan keyingi uzatish tugunini tanlash yondashuvidir. Bu jihat keyingi uzatish tugunini tanlashda faqat yuqori quvvat darajasini hisobga olgan holda ustunlik qiladi

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# THEORETICAL-CONCEPTUAL ANALYSIS OF THE AFGHAN WAR AND ITS OCCURRENCE

***Shoyimov Sanjarbek Saidmuradovich***
*Teacher of the Department of "Social Sciences"*
*of Tashkent State University of Economics*

**Annotation**

We know that the war in Afghanistan in the 70s and 80s of the 20th century was approached from a subjective and ideological point of view. This article analyzed the Afghan war and its occurrence based on primary sources: archival materials and materials announced by the military leadership who witnessed the war. The article also mentions the opinions and works of Western and Russian authors regarding this war.

**Keywords:** Afghan syndrome, Storm-333, Mark Galeotti, Panjshir Valley, Position "A", 40th Army, Boris Gromov.

As we all know, any war that has occurred in history has resulted in huge losses for mankind. Also, for the emergence of any war, there was always an internal and external reason and an excuse for the start of the war.

Explaining the above sentences, in this article we theoretically and scientifically analyze the war in Afghanistan and the reasons for its occurrence, which took place in the 70s and 80s of the last century and went down in history as a unique element of the "Cold War" (Afghan syndrome).

First of all, we must comment on the name of this war and the opinions expressed about it. In naming this war, it is appropriate to study the opinions of world historians and political scientists in 3 parts.

The first is the approach of the Western countries (mainly the USA and Europe), and the war that took place in Afghanistan in 1979-1989 is mainly called the "Soviet-Afghan War". In particular, Lester W. Grau, an American veteran of the Vietnam War and a retired lieutenant colonel of the US Army, an analyst at the Foreign Military Studies Department of the Army Joint Weapons Center at Fort Leavenworth, in a number of his works, in particular, "The bear over the mountain : Soviet Combat Tactics in Afghanistan" and "The Other Side of the Mountain: Tactics of the Mujahideen in the Soviet-Afghan War" named the war as the "Soviet-Afghan War". Also, his co-author Michael A. Gress created many works together, in which the name of the war was mentioned in this situation. The same title is cited in his work by Mark Galeotti, a British historian, lecturer and writer on transnational crime and Russian security, director of the Mayak Intelligence consultancy, and emeritus professor at UCL's School of Slavic and East European Studies. , is also a Senior Fellow at the Royal United Services Institute and Associate Professor of Euro-

Atlantic Geopolitics at the Geostrategy Council. In his book "Storm-333" (Storm-333), "Operation Storm" was the opening action in the Soviet-Afghan war to capture Kabul and kill Afghan leader Hafizullah Amin. a special forces mission, is one of the rarest books available in the English language that chronicles both a lucky break for the Special Forces and the KGB and the beginning of a terrible strategic blunder for the USSR. Also The Panjshir Valley 1980–86: The Lion Tames the Bear in Afghanistan (Campaign) and Afghanistan 1979–88 Afghanistan 1979–88: Soviet air power against the mujahideen (Air Campaign, 35) also called the war "Soviet-Afghan war" (Soviet-Afghan war) called by name.

Also, a group of Western historians and writers: Zammis Shein "Soviet and Mujahideen Uniforms, Clothing, and Equipment in the Soviet-Afghan War of 1979-1989" (Soviet and Mujahideen Uniforms, Clothing, and Equipment in the Soviet-Afghan War , 1979-1989), "Salaam Bacha: Soviet and Mujahideen Small Arms and Light Weapons in the Soviet-Afghan War, 1979-1989" 1989), (Joseph Revez Irlich "Quench Warfare: Cocktails from the Soviet-Afghan War" (Quench Warfare: Cocktails from the Soviet-Afghan War), Radrik Breithwaite "Afghanistan: Russians in Afghanistan 1979-1989" ( Afgantsy: The Russians in Afghanistan 1979-89), Elizabeth Leek "Afghan Crucible: The Soviet Invasion and the Making of Modern Afghanistan", Grigory Frement Barnes "Soviet-Afghan The Soviet-Afghan War 1979-89 (Essential Histories), Anthony Tucker Jones "The Soviet-Afghan War (Images of War)" ), Mark S. Keren "The Soviet-Afghan War: Another Look", Oliver Roy "Lessons of the Soviet/Afghan War", Reagan Fanker wrote in "The Holy Warrior: Osama Bin Laden and his Jihadi Journey in the Soviet-Afghan War (World History)" (The Holy Warrior: Osama Bin Laden and his Jihadi Journey in the Soviet-Afghan War (World History)) "Soviet-Afghan War". It is important to note that in the course of research, we witnessed that this war was also called the "Soviet War in Afghanistan" by Western and other authors (Grigory Fefer "The Great Gamble: The Soviet War in Afghanistan" (The Great Gamble: The Soviet War in Afghanistan), Gary Jeffrey "The Soviet War in Afghanistan (Graphic Modern History: Cold War Conflicts)", Ilya Milyukov "The Soviet War in Afghanistan 1979-1989 : infamous military intervention, 1979-1988") (The Soviet War in Afghanistan 1979-1989: An infamous military intervention, 1979-1988).

Also, some political scientists compare this war as "Vietnam of the Soviets". However, compared to the war in Afghanistan, the Soviets were more successful in Vietnam.

Western authors called this war the "Soviet-Afghan War" based on the fact that the entry of the Soviet Union's army into Afghanistan on December 27, 1979 during the Cold War was a gross violation of international law. as, "invasion", "invasion", "invasion", they evaluated it as an intervention in the internal affairs of another country and gave such a meaning to the war due to the existence of inter-state political

competition at that time. Also, Zbigniew Brzezinski, national security adviser to President Jimmy Carter, described the Soviet invasion as a reflection of "Moscow's long-held dream of direct access to the Indian Ocean."[1]. "The first misconception about the conflict is hidden in its name," says General B. Gromov. "The so-called Soviet-Afghan war implies that the conflict has a bilateral nature, that is, a confrontation between the USSR and Afghanistan, and this is really wrong. "According to the commander, this myth was popularized in the West during the Cold War to give legitimacy to the Mujahideen, which was supported by the United States and its allies. "The Soviet army has had a legal presence in Afghanistan since the USSR was officially invited by the ruling Afghan government in 1979," the general said, paralleling the introduction of Russian troops. "In essence, the Afghan conflict was an internal conflict between the legitimate government led by the People's Democratic Party of Afghanistan (PDP) and the Mujahideen, or enemies, Islamist gangs and other insurgents "[2].

The second approach - mainly Russian and former Soviet countries historians and political analysts use the phrase "Afghan war" (Afganskaya voyna) in relation to the war in Afghanistan in 1979-1989. The reason for the use of this phrase by the authors is the war and the introduction of a limited contingent of Soviet armed forces into the territory of Afghanistan by the Soviet Union as a support of the Afghan government against the armed groups (Afghan Mujahideen) that arose against the official government in its territory. that he did it at his request, that he wanted to provide military assistance to achieve peace in Afghanistan, in other words, that he stayed in Afghanistan in the extremely difficult conditions that threaten the security interests of our country and the achievements achieved as a result of the April Revolution (1978-Savre Revolution). It is explained that the need for additional military assistance arose especially because the previous government of the Democratic Republic of Afghanistan (DRA) also made such a request, and in accordance with the provisions of the Soviet-Afghan Treaty of 1978, the necessary contingent of the Soviet Army was sent to Afghanistan. which led to the decision to send him to Estonia. They also emphasized that they, like any other UN member state, have the right to individual or collective self-defense provided for in Article 51 of the UN Charter.

As a result of the Afghan Revolution in 1978, relations between the USSR and Afghanistan became closer. The leadership of the People's Democratic Party now

[1] Memorandum for The President from Zbigniew Brzezinski, "Reflections on Soviet Intervention in Afghanistan," December 26, 1979. The National Security Archive. https://nsarchive.gwu.edu/document/18120-document-8-georgy-kornienko-was-top-deputy

[2] Их выбрала Родина / Авт.-сост. Олейников В. В. – Рыбинск: Изд-во О53 АО «РДП», 2020. С. 30-31.

viewed the USSR not only as an economic donor, but as an ideological ally and a major partner in the implementation of its plans[3].

On April 27, 1978, the army staged another coup d'état called the April Revolution. The People's Democratic Party of Afghanistan (PDP) led by N. Taraki came to power. The Democratic Republic of Afghanistan (ADR) was declared. However, the government of UzPDP and GDR allowed haste and extreme radicalism while implementing general progressive reforms, did not take into account centuries-old traditions, the place and importance of Islam in people's life, which led to the central government caused armed uprisings.

In fact, as a result of research in the archive, it is clear that in the middle of March 1979, as a result of an uprising against the government in Herat (20 thousand people), the leader of the People's Democratic Party of Afghanistan, Nur Muhammad Taraqi, for the first time defected from the Soviets to the government. appeals for help to become a pillar (even the Soviet military commander, Major N. Ya. Bizyukov, was killed in this uprising). The uprising worried the Afghan leaders so much that they asked for direct military assistance. On March 17-19, the request of the ADR government was discussed at the meetings of the Political Bureau of the Central Committee of the CPSU. A. Kosygyn was instructed to talk with N. M. Taraki in order to clarify the situation in Afghanistan; The Ministry of Defense was allowed to deploy two divisions on the border of the USSR and Afghanistan. From this incident until December 12, 1979, at the meeting of the Political Bureau of the Central Committee of the CPSU, on the proposal of Yu.V.Andropov, D.F.Ustinov and A.A.Gromiko, a unanimous decision was made to introduce Soviet troops into Afghanistan ("Position A"). During his stay, the heads of the Afghan government: N.M. It is preserved in the archive that Taraqqi and H. Amin appealed for help from the Soviet state several times during their visits to their country and telephone conversations. In September 1979, after N. Taraqqi was removed from leadership and H. Amin took power, on November 29, 1979, a meeting was held in the Central Bureau of the CPSU with the participation of A. Gromyko, Y. Andropov, D. Ustinov, and B. Ponomarev. , in which there were indications that the new leadership of Afghanistan intends to pursue a more "balanced policy" in relations with Western countries. It is known that, in particular, US representatives come to the conclusion that based on their relations with Afghans, the political direction of Afghanistan can be changed to a direction favorable to Washington...

Taking into account the above and the need to use all possibilities to prevent the victory of the counter-revolution in Afghanistan or the direction of Kh. Amin's political direction to the West, it seems appropriate to follow the following direction 'looks. It

[3] Топорков В.М. Советско-афганские отношения в 1975-1991 гг.: исторический опыт разработки и реализации военно-политической стратегии СССР. Чебоксары: 2014. С. 316.

was agreed that if there are facts indicating the beginning of the anti-Soviet turn of Kh. Amin, we will make additional proposals for measures. Members of the Politburo of the Central Committee of the CPSU in October-November 1979 were informed by the KGB of the USSR that Kh. Amin was studying the possibilities of reorienting his policy to some extent towards the USA and the PRC. data was particularly alarming.

On September 27, H. Amin addressed the American attorney general in Kabul, and two days later, Afghan Foreign Minister Sh. Wali expressed the same opinion to US officials David Newsom and Harold Saunders in New York. There was a version that H. Amin was related to the Central Intelligence Agency.

Prominent party leaders in exile from both factions of the UzPDP created illegal structures in the DRA, secretly began to return their cadres to Afghanistan, and began to plan and prepare actions against H. Amin's group, at the same time they pinned their main hopes on the Soviet military. they did. Help In Afghanistan itself, by December 1979, a tense military-political situation arose - terror and violence were on the rise in the country, and the civil war actually began. The Soviet government had the idea of carefully eliminating H. Amin and creating conditions for replacing him with a more loyal person. B. Karmal, according to experts, was supported by a certain part of the members of the Afghan party (later it turned out that he was asked to lead the struggle to overthrow the regime of H. Amin); He agreed and was immediately taken into the custody of the KGB of the USSR.

On December 23, 1979, the Soviet ambassador informed H. Amin that the Soviet leadership had decided to fully meet his requests to send troops to Afghanistan and was ready to send them from December 25, 1979. H. Amin expressed gratitude for this decision and ordered the General Staff to support its implementation in every possible way.

The first military operations in Afghanistan were carried out by the GRU special forces of the General Staff of the USSR Armed Forces, the USSR KGB and units of the 103rd Airborne Division. On December 27, 1979, during the day and evening, they took over state facilities, state institutions, the head of state's residence, and a television and radio station. The main losses of Afghans (several hundred security personnel) and Soviet military personnel (21 special forces) occurred during the storming of H. Amin's residence - Tojbek Palace. On December 27, at the meeting of the Political Bureau of the Central Committee of the CPSU, the propaganda measures regarding the entry of Soviet troops into Afghanistan and the transfer of power to B. Karmal were considered.

Of the entire list of applications, the one that regulates the procedure for covering this action in the press and other mass media deserves the most attention. According to its rules, the truth about the "Afghan War" was hidden from the Soviet people for a long time. The secrecy that accompanied the Soviet Union's actions in Afghanistan aroused caution among many and greatly damaged the USSR's international reputation.

**A list of requests by the Afghan leadership for military assistance from the Soviet Union [4]**

| | | |
|---|---|---|
| 1. | April 14 - | - sending 15-20 Soviet combat helicopters with crews to the DRA. |
| 2. | June 16 - | - sending Soviet crews to the DRA with tanks and infantry fighting vehicles to protect the government, Bagram and Shindad airfields. |
| 3. | July 11 - | - Entry into Kabul of several Soviet special forces of up to one battalion each. |
| 4. | July 19 - | - introduction of up to two divisions into Afghanistan. |
| 5. | July 20- | - Entry of an airborne unit into Kabul. |
| 6. | July 21 - | - sending 8-10 Mi-24 helicopters with Soviet crews to the DRA |
| 7. | July 24 - | - bringing three army divisions into Kabul. |
| 8. | 1 - August - | - August - sending a special brigade to Kabul. |
| **9.** | 12 - August - | - August - Rapid introduction of Soviet units into Kabul, which the Afghans will need until spring. |
| **10.** | August 12 - | - sending three Soviet divisions and transport helicopters with Soviet crews to Kabul. |
| 11. | 21 - August | - one and a half thousand to two thousand Soviet paratroopers were sent to Kabul. Replacing Afghan anti-aircraft crews with Soviet crews. |
| 12. | 25 - August | - Bringing Soviet troops into Kabul. |
| 13. | 2 - October - | - A special battalion was sent for Amin's personal protection |
| 14. | November 20 - | - a reinforced regiment was introduced to Badakhshan region. |
| 15. | 2-4 - December | - the introduction of Soviet police units into the northern regions of Afghanistan. |
| 16. | December 12-17 - | - deployment of Soviet garrisons in northern Afghanistan, guarding DRA roads. |

It will be appropriate to mention some authors and their works who put forward this second approach. Among them, Yelena Grishina - (С нами ангелй рядом шагали), Vladimir Snegirev and Valery Samunin (Смертный вирус "А". Кто "заразил" СССР Афганской войной) Nikolay Fedorovich Ivanov (Операtсию "Сторм" начат ранче...), Oleg Krivopalov (Политработники 40-й обшевойсковой армей в Афганистане (1979 — 1989 гг.)) Aleksandr Lyakhovsky (Трагедия и доблест Афгана) ( Тайны афганской войнй) Toporkov Vladimir Mikhailovich (Совет-Афганская отношения в 1975-1991 гг.: исторический опит разработки и

[4] Prepared on the basis of archive data.

реализатции военная-политическая стратегия СССР), Plastun V.N. (Изнанка Афганской войной 1979-1989 гг) Artush Harutyunyan (В горах Бадахшана) Makhmut Gareev (Афганская страда) B.V Gromov. (Ограниченный контингент советская войска в Афганистане ) V.G Korgunlar (Афганистан и Иран. — Афганистан: война и проблемное миро) C. Akimbekov (История Афганистана), Abdurashid Nurmurodov (Qonli yo'rgaklar), Rofe Pardaev (Афганская командировка) O'tkir Abdurahimov (Taqdir o'yinlari), the war is described as "Afghan war" and analyzed based on this rule.

In the context of the growing crisis in Afghanistan, the Politburo of the Central Committee of the CPSU made a decision on December 12, 1979 "to send a limited contingent of Soviet troops (LCSV) to Afghanistan to provide international assistance to the friendly Afghan people until this political decision was taken, the leadership of the Ministry of Defense and the General Staff of the USSR sent troops to Afghanistan. was of the opinion that it is not appropriate to include it. The introduction of troops into the DRA began on December 25, 1979, and by mid-January 1980, the main forces of the OKSV were located at deployment points in Afghanistan. The period when the main contingent of Soviet troops was brought in, placed in garrisons, the beginning of general development, the organization of the security of deployment points and other objects was defined as the first stage of the presence of the Soviet Army in Afghanistan. December 1979 - February 1980). The entry of Soviet troops and, first of all, the forced replacement of Kh. Amin with the "moderate view" leader B. Karmal, which was carried out with the active participation of the Soviet side, further destabilized the situation in Afghanistan.

The oppositionists called the country's population to "holy war" (jihad) and intensified their propaganda work; Support for opposition parties in other countries has increased dramatically.

The composition of the OKSV in Afghanistan was not permanent. By the beginning of February 1980, the control of the 40th Army, two motorized rifle and one airborne division, an air assault brigade, two separate regiments and other units were concentrated in the DRA. In the first half of 1981, the Soviet army group was strengthened by a motorized rifle division and two separate regiments[5].

Stages of the presence of Soviet troops in Afghanistan.

Phase 1: December 1979 - February 1980. The entry of Soviet troops into Afghanistan, their placement in garrisons, the organization of guarding of deployment points and various facilities.

[5] Топорков В.М. Советско-афганские отношения в 1975-1991 гг.: исторический опыт разработки и реализации военно-политической стратегии СССР. Чебоксары: 2014. С. 315.

Phase 2: March 1980 - April 1985. Conducting active combat operations, including large-scale operations, together with Afghan units and units. Reorganization and strengthening of DRA armed forces.

Phase 3: May 1985 - December 1986. The transition from active hostilities to the support of the actions of Afghan troops by Soviet aviation, artillery and sappers. The use of motorized rifle, airborne and tank units, mainly as a reserve, and to increase the morale and combat stability of the Afghan forces. Special forces units fought to suppress the supply of weapons and ammunition from abroad. Continuation. To help develop the armed forces of the DRA. The repatriation of 6 Soviet regiments took place. Phase 4: January 1987 - February 1989. The participation of Soviet troops in the national reconciliation policy of the Afghan leadership. Support for combat operations of Afghan forces continues. Preparation and implementation of the complete withdrawal of Soviet troops.

The most famous military operations in the history of the Afghanistan war of 1979-1989. "Mountains-80", "Spring-80", "Fall-80", "Zarba-1,2", "Volley", "Maneuver", "Trap", "Granite", "Thunderbolt" (in Ghazna region ), "Javara", "South", "Typhoon" and others.

The most popular myth about the Soviet campaign in the DRA is that it ended with the defeat of the USSR and cemented Afghanistan's reputation as the "graveyard of empires". "This is a very inaccurate description of events," said the general. "First of all, it should be noted that as the commander of the Soviet army in the DRA, I never received orders to 'defeat' anyone in Afghanistan." "At its peak, the 40th Army had only 108,800 men, suggesting that no one had achieved a classic military victory in Afghanistan. " Let's remind: in Vietnam, the United States deployed a contingent of troops five times larger than the 40th Army in an area five times smaller than Afghanistan. B. Gromov stated that the task of the 40th Army in the DRA was to "ensure favorable conditions for the activity of the legitimate PDPA government." "Those who look at the outcome of the war from the prism of "victory or defeat" do not understand the complex nature of military operations against partisans, I believe that the Soviet soldiers successfully fulfilled their tasks in Afghanistan," said the commander[6].

In conclusion, it can be said that the task of impartial, historical truth about this war and its occurrence, detailed research, analysis, collection of sources and its publication in the press and the world public is still waiting for its answer as an urgent task. . History should be cleansed of any subjective, personal views and ideologies, and objectively tell its true word and conclusion.

[6] Их выбрала Родина / Авт.-сост. Олейников В. В. – Рыбинск: Изд-во О53 АО «РДП», 2020. – С. 31.

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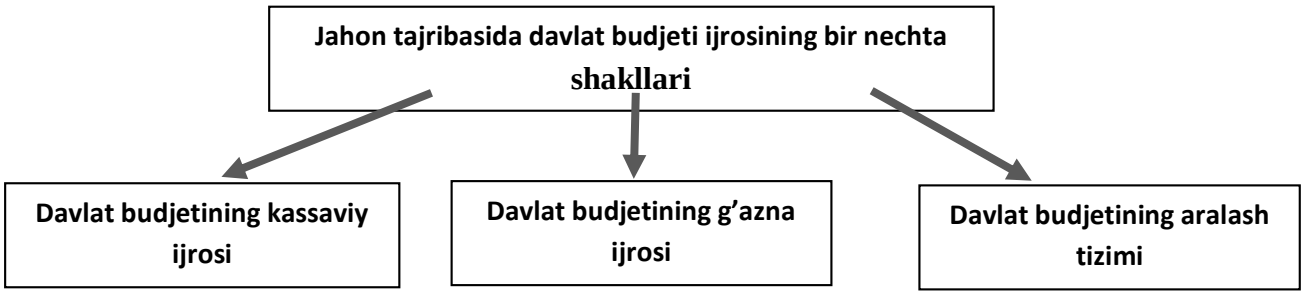
# TASHABBUSLI BUDJETLASHTIRISH- DAVLAT MOLIYASINING INNOVATSIYASI SIFATIDA

***O'ralova Nodirabegim O'tkirovna***
*Toshkent davlat iqtisodiyot universiteti*
*MI-62 guruh talabasi*

**Annotatsiya:** Ushbu maqolada mamlakatimizda tashabbusli budjetlashtirishning ijtimoiy sohani rivojlantirishdagi o'rni, amalga oshirilayotgan va davlat budjeti hisobidan ajratilayotgan mablag'larning ijrosi va ahamiyati to'g'risida ma'lumotlar berildi, shuningdek, foydalanilgan manbaalar doirasida mavzu yoritib berildi.

**Kalit so'zlar:** tashabbusli budjetlashtirish, davlat budjeti, "open budget" loyihasi, davlat g'aznasi, kassaviy ijro.

O'zbekiston Respublikasida iqtisodiyotni erkinlashtirish va modernizatsiyalash sharoitida davlat moliyasi tizimida iqtisodiy islohotlar amalga oshirilmoqda. Davlat moliyasini boshqarishdagi islohotlar sharoitida umumdavlat moliya tizimining bosh bo'g'ini- davlat budjetini boshqarish, budjet jarayonini tashkil etish tizimidagi islohotlar, xususan, budjet ijrosida kassali tizimdan jahon amaliyotida sinalgan va o'zining ijobiy natijalarini bergan davlat budjetining g'azna ijrosiga o'tildi. Quyidagi manbaa asosida jahon tajribasi asosida davlat budjetini shakllarini keltirib o'tamiz;




**1-rasm. Muallif ishlanmasi: Jahon tajribasida davlat budjeti ijrosining bir nechta shakllari[1]**

Endi, tashabbusli budjetlashtirish mohiyati, uning davlat iqtisodiyoti uchun afzalliklari haqida ham to'xtalib o'tsak. Tashabbusli budjetlashtirish - to'g'ridan-to'g'ri demokratik yondashuvni ifodalaydigan budjetlashtirishdir. U fuqarolarga hukumat faoliyati bilan tanishish hamda davlat resurslarini taqsimlanishini muhokama qilish va ta'sir o'tkazish imkoniyatini beradi. Tashabbusli budjetlashtirish oshkoralik va hisobdorlikni oshirib, hukumat samarasizligini kamaytirishga va eng mihimi, korrupsion holatlarni oldini olishga yordam beradi. Shuningdek, davlatimizda tashabbusli budjetlashtirish chekka hududlarda istiqomat qiluvchi aholi sharoitlarini

o'rganishda ularning huquq-manfaatlari uchun muhim bo'lgan hukumat qarorlarini qabul qilishga ham ta'sir ko'rsatish orqali inklyuziv boshqaruvni ta'minlaydi. Bu usul korxonani va faoliyatni rivojlantirishga yo'l beradi, yangi bo'limlar yaratish, xizmat sifatini yuksaltirish, sotish va marketingni mustahkamlash uchun keng qamrovli yondashuvlarni amalga oshirishga imkon beradi.

Tashabbusli budjetlashtirish nafaqat davlat balki kompaniya, xususiy firmalar faoliyatida ham bo'lishi mumkin. Shuningdek bu jarayonda, kompaniya maqsad va vazifalarini belgilab, ularni amalga oshirish uchun tegishli moliyaviy resurslarni ajratadi. Bu jarayonda, tashkilotni qo'llab-quvvatlovchi faoliyatlar uchun kerakli miqdor va sarflanadigan mablag'lar, katta iltimos yoki fondlardan olingan grantlar, investorlar tomonidan berilgan moliya, jismoniy va moliyaviy resurslar orqali belgilanadi va boshqariladi. Budjetlashtirishda tashabbusning o'rnini aniqlash, tashkilotning o'zini rivojlantirishga yo'l bermoq uchun boshqa korxonalarga ta'sir ko'rsatish, yangi bo'limlar va sohalar ochish, xizmatlarni rivojlantirish va sotishni kengaytirish, yangi texnologiyalarga investitsiyalarni ko'paytirish va boshqarish hisoblanadi. Bu shu bilan birga, tashkilotning moliyaviy olishiga va tezroq natijalarni ko'rishiga yordam beradi. Davlat moliyasi tashabbusli budjetlashtirish orqali ilg'or innovatsiyalarni o'rnatish va ularning rivojlanishiga yordam beradi. Masalan, yangi sohalarga investitsiyalar jalb qilgan holda, innovatsion loyihalarga moliyaviy qo'llanma yaratish, texnologiyalarni o'rganish va rivojlantirishga moliyaviy yordam ko'rsatish bilan bog'liq bo'lishi mumkin. Aniq masalalar va muammolar mavjud bo'lsa, davlat moliyasi tashabbusli budjetlashtirish orqali innovatsiyalar va yangiliklarni kengaytirish, iqtisodni rivojlantirish, yangi ish o'rinlari yaratish, fuqarolarga yaxshilik ko'rsatish va davlat xizmatlarini yuqori sifatda taqdim etish imkoniyatlarini oshirish uchun moliyaviy yordam berishi maqsadida bajaradi. Bu jarayon mamlakatning sanoat, texnologiya sohalarini rivojlantiradi va global bozorga qarshi kurashishda uni kuchaytiradi. Tashabbusli budjetlashtirish dunyoning bir qator davlatlarida qo'llanilib kelinadi. Misol uchun Germaniya, Braziliya kabi davlatlarni aytish mumkin. Bu bilan uning xalqaro siyosatdagi o'rni kuchaydi. O'zbekiston Respublikasi Prezidentining 10.04.2023 dagi PQ-117-son qarori doirasida ham "Tashabbusli budjetlashtirish amaliyotini yanada takomillashtirish hamda faol mahallalarni qo'llab-quvvatlash chora-tadbirlari**[2][**https://lex.uz/ru/] to'g'risidagi qarorida ham bunga alohida e'tibor berib o'tilgan. Mamlakatimizda ham "Open budjet" axborot portali keng jamoatchilikka joriy etildi. Portalda fuqarolar o'z takliflarini ilgari surish, ovoz berish va g'olib bo'lgan loyihalarni amalga oshirilishini barcha bosqichlarfini kuzatib borish imkoniyatiga egadirlar. Bundan tashqari jamoatchilik nazoratini amalga oshirgan holda loyihalar ijrosini baholab borish mexanizmlari ham yaratilgan. Bundan tashqari, endilikda tuman va shahar budjetlari qo'shimcha mablag'larining tashabbusli budjet jarayoni uchun yo'naltiriladigan qismi 30% ga oshirilib, joylarda fuqarolarni qiynab kelayotgan muammolarni hal etish uchun ajratiladigan mablag'lar ko'lami

kengaytirildi. Ma'lumot sifatida bu jarayon ilk bor tajriba sifatida 2021-yilda har bir hududdan bittadan tuman yoki shahar yoki 14ta tuman tanlab olinib amalga oshirilgan**[3]**[https://www.gazeta.uz/ru/]

**Xulosa va takliflar:** Tashabbusli budjetlashtirish tizimi bir kompaniyaning moliyaviy imtiyozlarini yaxshilaydigan bir texnologiyadir. Bu tizim kompaniyalar uchun bir nechta afzalliklarga ega bo'lishi mumkin:

**Birinchidan,** boshqarish imkoniyatlari. Bu tizim kompaniyaning moliyaviy holatini boshqarishda ma'lumotlarni almashish va tahlil qilish imkoniyatlarini ta'minlaydi.

**Ikkinchidan**, ommaviy hisobotlar tayyorlash imkoniyatlari: Tashabbusli budjetlashtirish tizimi moliyaviy natijalarni ommaviy hisobotlar sifatida ishlab chiqish imkoniyatini ta'minlaydi. Bu, kompaniyalarning moliyaviy holatlarini dinamik ravishda tahlil qilishlarini amalga oshirishiga imkon beradi. Tashabbusli budjetlashtirish tizimi davlat va kompaniyalar uchun moliyaviy boshqaruvni soddalashtirishda katta yordam beradi va faolliklarini oshirishda samaralidir.

# THE ISSUE OF FORCED LABOR AND THE FIGHT AGAINST IT IN UZBEKISTAN

*Tashkent State Univeristy of Law*
*2nd stage student* - ***Olimov Avazbek***
***avazolimov432@gmail.com***

**Abstrac:** The article highlights the issue of forced labor in Uzbekistan, the recruitment of minors into forced labor, and efforts to combat it. Today, forced labor remains one of the most significant global issues, prompting comprehensive measures and reforms in Uzbekistan to address this problem. In this context, the International Labour Organization (ILO) plays a crucial role in assisting our country.

**Key words:** forced labor, minors, human rights, ILO, UN, international documents, Constitution of the Republic of Uzbekistan, Labor Code.

## Introduction

It is widely acknowledged that one of the most pressing global issues today is the problem of forced labor. States worldwide are taking action to eradicate this practice and elevate it to the level of state policy. Uzbekistan, since the early years of its independence, has prioritized establishing a legal democratic state aimed at ensuring human rights and freedoms. International organizations such as the International Labour Organization and the United Nations provide substantial assistance to states in combating forced labor. Forced labor is considered a barrier to human rights.

## Methods

Several international documents aimed at combating forced labor and its prevention have been adopted in our country, and amendments and supplements have been made to our national legal system. The Constitution of the Republic of Uzbekistan and other legal documents guaranteeing labor rights confirm that forced labor is prohibited by law.

For example, in Article 44 of the Constitution of the Republic of Uzbekistan, it is specified that coercion to work is punishable by judicial decision or by other measures provided for by law. Likewise, Article 5 of the Labor Code of the Republic of Uzbekistan sets out the principle of freedom to work and the prohibition of forced labor, indicating sufficient legal grounds for the prohibition of forced labor in our country.

Today, our country is actively combating forced labor. Ensuring the rights and freedoms of individuals has been identified as one of the top priorities of state policy. The Supreme Council of the Republic of Uzbekistan adopted the resolution "On strengthening measures to ensure guaranteed labor rights of citizens in accordance with the legislative documents of the Republic of Uzbekistan and international labor

standards" on October 4, 2017, with the aim of eliminating child labor and forced labor in this area, comprehensive organizational and operational measures have been taken in this direction, the parliamentary oversight institution was established. Complex measures to prevent forced labor, ensuring full protection of labor rights of citizens, have been taken to create sufficient normative-legal base for combating forced labor, especially in the cotton sector. This has been highly appreciated by the world community, including the International Labour Organization, the World Bank, and the European Parliament. In addition, according to Tanzila Norboyeva, Chairman of the Senate of the Republic of Uzbekistan, Uzbekistan has completely eradicated systematic child labor since 2016. In this regard, the European Parliament adopted a resolution on Uzbekistan's accession to the textile protocol.

In 1930, Uzbekistan ratified the Convention on Forced Labor adopted in Geneva. According to this Convention, the term "forced or compulsory labor" refers to any work or service exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily. It should be noted that some cases specified in legal acts are not considered forced labor. For example:

- Performing work related to military service or military duty according to the Republic of Uzbekistan Law "On General Military Duty and Military Service";

- Performing work that involves surpassing or maintaining a military state of emergency;

- Carrying out work under the legal authority supervision of state bodies responsible for enforcement of court decisions at the time of enforcement.

## Results and Discussions

In Uzbekistan, teachers, educators, and students have long been involuntarily involved in forced labor, especially in cotton harvesting. Indeed, this situation has placed our country in a certain position before the international community for many years. Moreover, representatives of human rights both in our country and abroad signed a petition boycotting Uzbek cotton due to the use of child labor and forced labor.

Starting from 2010, the influential Cotton Campaign international coalition also declared a boycott and stopped purchasing cotton. We haven't achieved anything through forced labor; instead, we've lost. We coerced teachers and students into forced labor. Because of this, society and our state did not grow and develop.

In 2020, the United States Trade Representative (USTR) announced Uzbekistan's eligibility for the Generalized System of Preferences (GSP) in Uzbekistan, based on the analysis of the European Commission, came to the conclusion that Uzbekistan responds to participate in the "GSP+".

In addition, on May 10, 2018, the Cabinet of Ministers of the Republic of Uzbekistan adopted Resolution No. 349 "On additional measures to prevent forced labor in the Republic of Uzbekistan", which specifically designated harsh penalties for those who employ workers and employees in seasonal agricultural work, various metal

scrap and paper collection, banned. Furthermore, one of the fundamental documents regarding the issue of combating forced labor in Uzbekistan is Presidential Decree No. PF-5775 dated July 30, 2019, aimed at further enhancing the system for combating human trafficking and forced labor in the Republic of Uzbekistan. According to this decree, the "National Commission for Combating Human Trafficking and Forced Labor" was established in our country, and local commissions for combating human trafficking and forced labor were entrusted with leadership responsibilities. Another advantage of this decree is that the practical implementation of combating forced labor has been initiated from the grassroots level. Specifically, in 2021, more than 20,000 awareness-raising events were organized to increase public awareness about combating forced labor. In every district and city, more than a million banners were installed to combat forced labor, more than 10,000 flyers and 10,000 posters were distributed.

In addition, Article 51 of the Criminal Code and Article 148 of the Criminal Code of the Republic of Uzbekistan establish liability for forced labor.

## Conclusion

As can be seen from the ideas mentioned above, effective and comprehensive measures have been taken in our country against forced labor. In 2021, these measures resulted in the adoption of 16 normative-legal acts aimed at combating forced labor, harmonizing labor legislation with international labor standards, including 4 laws, 2 presidential decrees, 4 resolutions of the President of the Republic of Uzbekistan, and 6 resolutions of the Government. The implementation of these legislative documents has almost eradicated forced labor in Uzbekistan and has returned our country to its former level on the international stage. The measures taken against forced labor have demonstrated their positive results.

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# O‘QUVCHILARNING TINGLAB TUSHUNISH KO‘NIKMASI VA UNI BAHOLASH XUSUSIDA

***Parxiddinova Diyora Kamoliddin qizi***
*ToshDO‘TAU 3-kurs talabasi*
*parxiddinova.diyora@icloud.com*

**Annotatsiya:** ushbu maqolada o‘quvchilarning tinglab tushunish ko‘nikmalarini baholash usullari, baholash jarayoni, tinglab tushunishni baholashga qaratilgan tadqiqot hamda shu tadqiqot yuzasidan olingan xulosalar haqida fikr yuritiladi.

**Kalit so‘zlar:** tinglab tushunish, baholash, indikator, distraktor, audio segmentlar, video segmentlar.

Ma’lumki, nutqiy faoliyatni yuzaga keltirish uchun inson ongida shu nutq uchun hozir bo‘lgan o‘zlashtirilgan leksikon, ma’lumotlar mavjud bo‘lishi kerak. Biz ana shunday ma’lumotlarni, asosan, tinglash orqali o‘rganamiz. Demak, tinglab tushunish jarayoni inson hayoti uchun eng muhim va zaruriy ko‘nikma hisoblanar ekan, ta’lim boshqichlarida o‘quvchilarning ana shu ko‘nikmasini rivojlantirish bo‘yicha ilmiy-metodik qo‘llanmalar ishlab chiqilishi va uni baholash to‘g‘risida ma’lum usullar taqdim qilinishi kerak. Zero, ingliz olimi Dylan Viliam “baholash – o‘qitish va ta’lim maqsadi o‘rtasidagi ko‘prik” deya ta’kidlagan.[1]

2021-yildan boshlab, umumta’lim maktablarida ona tilini o‘qitish mazmuni tubdan o‘zgardi. Avval ona tilini o‘qitish lingvistik bilimlarni berish orqaligina amalga oshirilgan bo‘lsa, bundan keyin lingvistik ko‘nikmalar nutqiy ko‘nikmalar bilan birgalikda, hamohang shakllantirila boshlandi. Xo‘sh, nutqiy ko‘nikmalardan biri bo‘lgan tinglab tushunish ko‘nikmasini o‘quvchilarda qanday usullar orqali rivojlantirish mumkin?

O‘quvchilarda multimedia vositalari yordamida tinglab tushunish ko‘nikmasini rivojlantirish ikki xil usulda amalga oshiriladi:[2]

1) **Audio segmentlar** (radio dasturlari, monolog, dialog va hokazolar). Bunda o‘quvchilarga tasvirsiz audiolar qo‘yib beriladi, o‘quvchilar esa audioni faqatgina tinglaydilar.

2) **Video segmentlar** (hujjatli filmlar, dramatik yoki komedik materiallar, yangiliklar dasturlari, turli xil intervyular va hokazolar). Bunda esa o‘quvchilar nafaqat tinglaydilar, balki ko‘rib tinglaydilar, bu kabi video segmentlardan foydalanish

[1] Dylan Viliam. Assessment: The bridge between Teaching and Learning. National Council of Teachers of English. Volume 21 Number 2, December 2013. Page 15-20.
[2] Hulkaroy Zoirjon qizi Norqo‘ziyeva. Tinglab tushunish ko‘nikmalarini o‘rgatishning zamonaviy metodlari. Scientific journal impact factor N6, 2022. 75-76-betlar.

o‘quvchilarning tinglanayotgan materialni yaxshiroq tushunishiga katta yordam beradi.

Shuni ham e’tiborga olish kerakki, o‘qituvchining o‘zi o‘qib bergan matnni tushunish ham o‘quvchilar uchun tinglab tushunish mashqi hisoblanadi, chunki bunda o‘quvchilar matnni ko‘rmaydilar, faqatgina o‘qituvchi nutqini tinglaydilar.

O‘quvchilarning tinglab tushunish ko‘nikmasini tekshirish va uni baholash maqsadida umumta’lim maktabi o‘quvchilari orasida kichik tadqiqot o‘tkazildi.

## TADQIQOT

O‘quvchilarga bolalar ensiklopediyasidan “Tipratikan” mavzusidagi matn o‘qib berildi.[3] U yuzasidan 12 ta test savoli tuzib chiqildi. Ushbu test savollari quyidagi indikatorlar asosida tuzildi:

*a) ochiq ifodalangan mazmunni tushuna oladi;*
*b) nisbatan yashirin ifodalangan mazmunni tushuna oladi;*
*c) bir necha gap mazmun orqali xulosa qila oladi;*
*d) ma’lumotlarni taqqoslab tahlil qila oladi;*
*e) mazmuniy blok asosida umumiy xulosa chiqara oladi;*
*f) matnning umumiy mazmunini tushuna oladi;*
*g) matn tarkibidagi ma’lumotlar orasidan isbot va dalillarni ajrata oladi.*

Umumiy testda to‘plash mumkin bo‘lgan ball – **17.5**. O‘quvchilarga matn o‘qib eshittirilganidan so‘ng 10 daqiqa testni yechish uchun vaqt berildi.

Aprobatsiya natijalariga ko‘ra, 12 ta test savolining 9 tasi **valid**, qolgan 3 tasi esa **novalid test** deb xulosa chiqarildi. Chunki 3 ta testga o‘quvchilarning 90% i dan ko‘pi to‘g‘ri javob berisha olgan (93.9%; 96.6%; 100%)

| **TEST HAQIDA MA’LUMOT** | | | | | | |
|---|---|---|---|---|---|---|
| **T/r** | **Test** | **Baholash indikatori** | **Test turi** | **Qiyinlik darajasi** | **Ball** | **Ajratilgan vaqt** |
| 1. | Quyida berilgan hukmning to‘g‘ri yoki noto‘g‘riligini belgilang.<br>**“Tipratikanlar odamga tez o‘rganadi”.**<br>A) To‘g‘ri<br>B) Noto‘g‘ri | Audiomatnda ochiq ifodalangan mazmunni tushuna olish | Yopiq To‘g‘ri-noto‘g‘ri javobli test | 1 | 1 | 1 |

Ushbu savolga 33 ta o‘quvchidan 32 tasi to‘g‘ri, 1 tasi esa noto‘g‘ri javob berishgan. Demak, test juda oson tuzilgan, distraktorlar esa yaxshi ishlamagan. Test savoli esa **novalid** deb hisoblandi. (96.6%)

[3] Bolalar ensiklopediyasi. “O‘zbekiston milliy ensiklopediyasi”. Davlat ilmiy nashriyoti, 2000. 504-505-betlar.

| | | | | | | |
|---|---|---|---|---|---|---|
| 7. | Tipratikanlar nimalarni **yemaydi?**<br>A) Hasharot lichinkalarini<br>B) Qurbaqalarni<br>C) Kaltakesaklarni<br>D) Dala sichqonlarini | Ma'lumotlarni taqqoslab tahlil qila olish | Yopiq Muqobil javobli test | 3 | 2 | 2 |

Ushbu testga 33 ta o‘quvchidan 25 tasi to‘g‘ri, 8 tasi esa noto‘g‘ri javob bergan. Ushbu savolda esa distraktorlar yaxshi ishlagan, 8 nafar o‘quvchi shu distraktorlarga chalg‘ib noto‘g‘ri javobni belgilab qo‘yishgan. Umumiy natijalarga ko‘ra, test savoli – **valid**. (75%)

Har bir o‘quvchining umumiy tinglab tushunish natijasi tekshirib chiqildi va quyidagi xulosalar olindi:

- **Eng yuqori ball – 17.5**
- **Eng past ball – 7**
- **O ‘quvchilarning o‘rtacha ballari – 13-14**

Aprobatsiya natijalariga ko‘ra, o‘quvchilar eng ko‘p **qiyinlik darajasi 3, balli 2 bo‘lgan** savollarga javob berishda qiynalgan.

Xulosaga ko‘ra, ona tili darslarida tinglab tushunish ko‘nikmasini rivojlantirishda turli xil audio va video segmentlardan foydalanish yaxshi samara beradi. O‘quvchilarning tinglab tushunish darajasini tekshirish uchun ham shu kabi audio va videolardan foydalanib, u yuzasidan turli topshiriqlar berish va javoblarni tahlil qilish kerak. O‘quvchilar esa bergan javoblariga ko‘ra baholanadi. Shuni e’tiborga olish kerakki, test topshiriqlari butunlay audioga asoslangan bo‘lishi va turli xil qiyinlik darajalarida bo‘lishi kerak. Shundagina o‘quvchilarning haqiqiy tinglab tushunganliklarini baholash mumkin bo‘ladi.

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# EFFECTS OF THE UV-FILTER OXYBENZONE ON ESTROGEN AND TESTOSTERONE LEVELS IN ADULT ZEBRAFISH (*DANIO RERIO)*

*Principal Investigator:* ***Kamola Mirjalilova***
*Faculty Advisor: Professor Sean Bignami, Dr Sean Bignami*
*Concordia University Irvine April, 2024*

## ABSTRACT

The usage of sunscreens has become integral in daily skincare routines due to their role in preventing sunburns and reducing the risk of skin cancer. One type of sunscreens is chemical sunscreens, encompassing compounds like Oxybenzone, which absorb and convert UV radiation. While Oxybenzone is recognized for its efficacy in UV protection, concerns regarding its safety have emerged. Furthermore, research suggests Oxybenzone may be a hormone disruptor, potentially affecting aquatic ecosystems and organisms like Zebrafish (*Danio rerio)*.

This study aimed to investigate the effects of acute exposure to Oxybenzone on hormone levels, specifically estrogen (17-beta estradiol) and testosterone, in adult Zebrafish. Significant alterations in hormone concentrations were observed through controlled exposure experiments. Testosterone levels were notably reduced in fish exposed to Oxybenzone, while 17-beta-estradiol concentrations increased, indicating potential endocrine-disrupting effects.

The findings underscore the importance of understanding the ecological implications of sunscreen ingredients beyond their intended human benefits. Further research is warranted to elucidate the broader impact of Oxybenzone on aquatic environments and wildlife, guiding regulatory measures and public awareness efforts to mitigate potential harm.

## INTRODUCTION

Sunscreens became highly recommended part of everyday skincare routine following the release of studies on that show a positive correlation between sunburns and sunbaths with skin cancer rates (Berwick M, 1992). Currently there are two main types of sunscreens available in the market – physical and chemical sunscreens, which differ in terms of their active ingredients (FDA, 2021). Physical sunscreens (also called mineral sunscreen) contain Titanium Dioxide and Zinc Oxide as the active ingredient and are approved by U.S. Food and Drug Administration (FDA, 2021). They are also considered more effective in blocking UV lights (UVA and UVB) since they reflect the radiation, instead of absorbing and converting it as chemical sunscreens do (Siller, 2018). Chemical sunscreens usually contain organic filters such as Oxybenzone, Cinoxate, Dioxybenzone, Ensulizole, Homosalate, Meradimate, Octinoxate, Octisalate, Octocrylene, Padimate O, Sulisobenzone, and Avobenzone, which are also

approved by FDA, but not listed as GRASE – "Generally Recognized As Safe and Effective to use" due to lack of data on their safety (FDA, 2021).

One of the organic filters in chemical sunscreens is oxybenzone, also known as Benzophenone-3 (BP-3). Oxybenzone is a light-yellow powder that absorbs UVA and UVB lights, which makes it highly effective as a UV-protector. Absorbed UV-light is converted into energy through photochemical excitation which results in emission of longer wavelengths, decreasing the penetration of radiation into skin. (Kim, 2014). According to the Scientific Committee on Consumer Safety (SCCS), BP-3 is safe to use in the concentrations of up to 6% in face cream, hand cream and lipsticks, and in concentrations of up to 2.2% in body creams, pump sprays and propellant sprays (SCCS, 2021).

Recently, studies in Hawaii and U.S. Virgin Islands have shown that Oxybenzone results in bleaching of coral reefs *Stylophora Pistillata* (Downs, 2016). As a result, US Senate Bill 2571 was passed and enforced in 2021 to ban the sale and distribution of chemical sunscreens that contain Oxybenzone along with other ingredients in Hawaii (The Senate 29$^{th}$ Legislature, 2021). However, oxybenzone sunscreens are still commonly used in other states and may have potential danger to freshwater ecosystems (Zhang, 2021).

A common model organism for toxicological studies in freshwater ecosystems is Zebrafish (*Danio rerio).* Studies have shown that BP-3 can be a hormone disruptor in adult Zebrafish by altering gene expression and activating antiandrogenic (testosterone blocking or androgen antagonizing) activity (Bluthgen, 2012). Additionally, studies from 2008 suggested that BP-3 delayed hatching period and viability of Zebrafish eggs (Coronado, 2008), which can also be potentially related to endocrine-disrupting effects of Oxybenzone. Estrogen (17-beta estradiol) and testosterone are the main hormones in regulating reproductive development and behavior in zebrafish (Bluthgen, 2012). Estrogen is crucial for the maturation of reproductive organs, regulating the reproductive cycle, and maintaining bone health (Boueid, 2023). Testosterone is primarily involved in masculinization, spermatogenesis, and influencing mating behaviors (Bluthgen, 2012). Disruptions to these hormones, such as exposure to endocrine-disrupting chemicals like oxybenzone, can adversely affect reproductive success, development, and overall health in zebrafish (Bluthgen, 2012). Therefore, this study aims to investigate the change in concentrations of estrogen (17-beta estradiol) and testosterone in adult *D.rerio* under acute exposure to Oxybenzone. The results would be helpful to understand the effects of Oxybenzone that might potentially affect the hatching delay concluded in previous studies, which is environmentally important to prevent reproductive toxicity of this sunscreen ingredient.

## MATERIALS AND METHODS:

Adult Zebrafish Assessment

A total of 98 adult zebrafish were obtained at the local pet store. 9 tanks with the volume of 10 gallons were set and filled with water, pH and ammonia levels optimized via “Ammonia Lock” and “pH up/down” solutions (API, USA). Zebrafish were put in tanks after 24 hours and observed for toxic nitrogen levels as the biproduct of their metabolism over the course of 3 days using “Freshwater Master Test Kit” (API, USA). Any abnormal changes in pH or nitrogen levels were addressed via the same kits as mentioned earlier. Fish were fed once a day with regular fish food “TetraFin Goldfish flakes plus” provided by institution (Tetra ®, USA).

Exposure to Oxybenzone

2 weeks after the tank setup, the fish were exposed to Oxybenzone. The tanks were divided into three groups, 3 tanks for control (no Oxybenzone), 3 for 500 ug/L of Oxybenzone and 3 tanks for 1000 ug/L of Oxybenzone exposure. The concentrations were chosen as Oxybenzone had chronic effects on *Danio rerio* at concentration of 191 ul/L, indicated as chronic endpoint (Kinnberg et. al. 2015) and acute effects (6 days LC50) at concentration of 2000-4000 ul (Jang et. al. 2016), thus concentrations between these two data were selected for this research. The Oxybenzone was dissolved in 0.01% DMSO solvent and introduced into the tanks. Initial reaction of the fish was recorded. The fish were observed for 6 weeks after the exposure for any abnormal behavior or increased mortality. No adjustments were made throughout the 6 weeks period. Water was added weekly accounting for evaporation of the water in tanks, but no water was removed.

Specimen collection

After 6 weeks 5 fish per tank were randomly selected for specimen collection. The fish were placed on ice for anesthesia to provide painless death. After 2-5 minutes the loss of muscle contraction was observed. The fish were dried by placing them on paper towel. Fish from each tank were pooled as 1 sample and ground via mortar and pestle for proper amount of sample for further analysis required by ELISA kit. Collected specimen samples were placed in the -80 C freezer until further evaluation.

ELISA

The ELISA plates for Testosterone and 17-beta-Estradiol were obtained from MyBioSource. The ELISA was performed following the instructions included in the manual provided by the manufacturer (MyBioSource, 2022). Testosterone standards were in concentrations of 2000-7.81 pg/ml, estrogen (E2, 17-beta estradiol) standards were in concentrations of 30000-29.3 pg/ml. Each sample was run in triplicates. The standard curve was calculated and analyzed on Excel.

Statistical Analysis

ANOVA was performed for Estrogen and Testosterone levels in each group on R Studio. Shapiro-Wilk test was performed along with plotting QQ-plot to test the normality assumption, followed by F-test for assumption of equal variance. The QQ-

plot indicated normal distribution (P>0.05, Shapiro-Wilk Test), while the F-test for variance indicated significant difference in variances. The significant results of ANOVA were further analyzed via Tukey Post hoc test on R Studio.

## RESULTS

Adult Zebrafish

Over the course of the experiment, fish showed no abnormal behavior compared to normal behavior according to previous studies (Bluthgen, 2012) with only accidental mortality (nd=18) before and during exposure that was approximately evenly distributed among the treatments.

Testosterone and Estrogen analysis

The results showed significant difference in the Testosterone levels as displayed in Fig 1 (P<0.05, mean=38322.2 pg/ml, SEM=56669.65 pg/ml, n=3, ANOVA), but no significant difference in the Estrogen levels as displayed in Fig 2 (P>0.05, SEM= 203.5242 pg/ml, n=3, ANOVA). Tukey post-hoc test was performed to identify the differences in the testosterone levels of different exposure groups. The differences between each exposure group and control group were significant (P<0.05), but the difference in testosterone between the oxybenzone exposure groups was not significant (P>0.05).

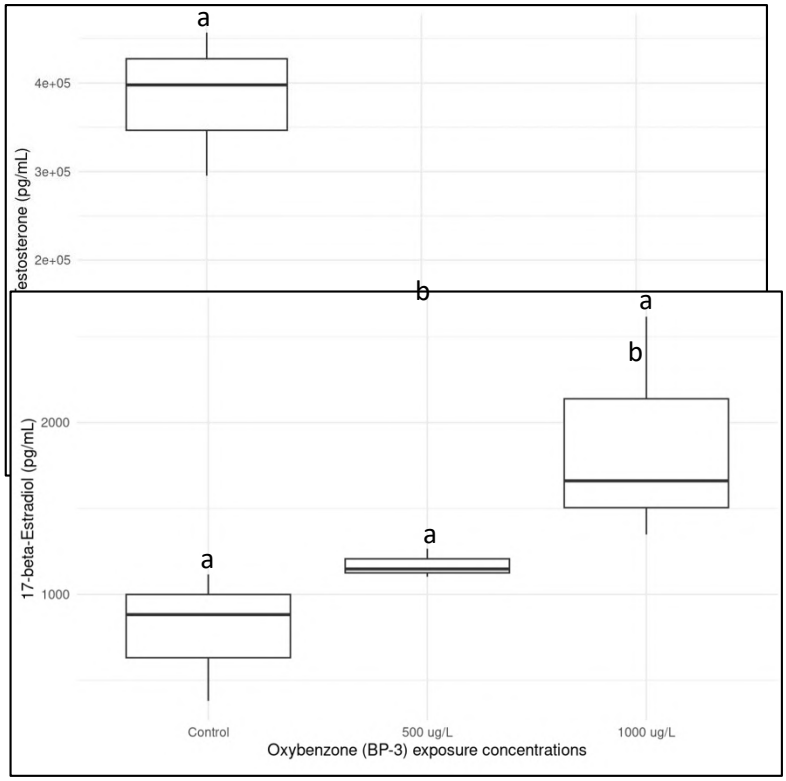


*Figure 1 The boxplot shows the concentrations of Testosterone based on different Oxybenzone exposure groups. The control group has the highest concentration of Testosterone (mean=383322.2 pg/ml), the high exposure group has the lowest (mean=35305.5 pg/ml).*

*Figure 2 The Boxplot shows the concentrations of Estradiol over several Oxybenzone concentration exposure groups, with highest levels of 17-beta-estradiol (mean=1875.56 pg/ml) and lowest in control group (mean=792.67 pg/ml)*

## DISCUSSION

The purpose of this experiment was to investigate the effects of acute exposure to Oxybenzone on hormone levels, specifically estrogen (17-beta estradiol) and testosterone, in adult Zebrafish..

The observed effects of high concentrations of Oxybenzone in this study showed a significant decrease in Testosterone levels (fig 1). This aligns with previous research indicating Oxybenzone's estrogen-mimicking property and its ability to suppress Testosterone in Zebrafish by interfering with the expression of transcripts involved in hormonal and steroidogenic pathways (Bluthgen, 2012). These findings raise concerns about the potential demasculinization of testes and reproductive disturbances in the environment (Caspillo, 2014), emphasizing the importance of understanding the broader ecological implications of Oxybenzone exposure.

This study showed no significant difference in the estrogen levels between the control group and oxybenzone exposure groups (fig 2). This result is consistent with the previous study conducted on fathead minnows (Kinz et al., 2006) and male zebrafish (Bluthgen, 2012), but opposite to the results of the studies on Japanese medaka and rainbow trout (Coronado et al., 2008). This may be due to the differences in fish species, as well as the studies based on genders of the fish, which suggests the future studies to be designed with separating the fish by genders for accurate analysis.

Another crucial consideration was the potential for hormonal disruption from the solvent used (0.01% DMSO). While DMSO has been reported to have endocrine-disrupting effects on Zebrafish (Mortensen et al., 2006), previous studies incorporating solvent controls in Oxybenzone research demonstrated insignificant changes in hormonal levels (Bluthgen, 2012), (Downs, 2016). Nevertheless, it is noteworthy that Oxybenzone dissolved in any solvent, including ethanol or acetone, has been shown to exhibit hormone-disrupting effects (Coronado 2008), suggesting the need for further exploration of solvent controls in future research studies.

In conclusion, our study demonstrates that acute exposure to high concentrations of Oxybenzone decreases testosterone in adult Zebrafish, indicative of potential reproductive disturbances. The study did not find any significant changes in the estrogen levels, yet further studies with different experimental designs are necessary to understand this correlation better. These findings underscore the importance of comprehending the broader ecological implications of Oxybenzone exposure, particularly its role as a hormone disruptor in aquatic environments. Further research is needed to explore alternative solvents and refine experimental methodologies. By enhancing our understanding of Oxybenzone's ecological footprint, we can inform regulatory measures to minimize its environmental impact and safeguard aquatic ecosystems.

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