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Uzbekistan's Cooperation With International Organizations

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Abstract

This article is devoted to the policy of cooperation of the Republic of Uzbekistan with leading international organizations in the diplomatic, political, economic and cultural spheres. After gaining independence, Uzbekistan's position in the international arena has risen by a step and its development strategy has undergone some renewal. Since then, it has been maintaining political, social and diplomatic relations with a number of international structures, such as the Shanghai Cooperation Organization (SCO), the United Nations (UN), the Commonwealth of Independent States (CIS), the United Nations Children's Fund (UNICEF) and UNESCO. The article reveals Uzbekistan's active participation in negotiations, projects and efforts on global problems, as well as its initiatives and proposals to resolve the Aral Sea issue.

Keywords: international organizations, cooperation, foreign policy, UN, UNESCO, CIS, international cooperation, Aral Sea problem.

Annotatsiya

Ushbu maqola O'zbekiston Respublikasining yetakchi xalqaro tashkilotlar bilan diplomatik, siyosiy, iqtisodiy va madaniy yo'nalishlarda olib borayotgan hamkorlik siyosatiga bag'ishlanadi. Mustaqillikka erishilgandan so'ng O'zbekistonning xalqaro maydonda tutgan o'rnini bir pog'ona yuqoriladi va rivojlanish strategiyasi birmuncha yangilanishga uchradi. Shu davrdan boshlab u Shanxay Hamkorlik Tashkiloti(SHHT), Birlashgan Millatlar Tashkiloti(BMT), Mustaqil Davlatlar Hamdo'stligi(MDH), Birlashgan Millatlar Tashkilotining Bolalar jamg'armasi(YUNISEF) va YUNESKO kabi bir talay xalqaro miqyosdagi tuzilmalar bilan siyosiy, ijtimoiy, diplomatik aloqalarni olib bormoqda. Maqolada O'zbekistonning hamkorlikda global muammolar yuzasidan olib borilayotgan muzokaralar, loyihalar va sa'y harakatlarda faol ishtiroki hamda Orol dengizi masalasini hal etish bo'yicha ilgari surayotgan tashabbus va takliflari ochib beriladi.

Kalit so'zlar: xalqaro tashkilotlar, hamkorlik aloqalar, tashqi siyosat, BMT, YUNESKO, MDH, xalqaro hamkorlik, Orol muammosi

Mustaqillikning dastlabki yillaridanoq mamlakat o'zining suverenitetini mustahkamlash, iqtisodiyotini modernizatsiya qilish va xalqaro maydonda o'z o'rnini topish uchun BMT, MDH, SHHT kabi mintaqaviy tashkilotlar bilan keng ko'lamli aloqalar o'rnatdi va tez fursatda Markaziy Osiyoda tinchlikni saqlash, chet davlatlar bilan siyosiy, iqtisodiy va madaniy hamkorlik olib borishga erishdi. Hozirgi kunda O'zbekiston xalqaro munosabatlarda ochiqlik siyosati, diplomatik faollik va global tashabbuslarda faol ishtiroki bilan alohida ajralib turmoqda va ko'plab yirik tashkilotlarning teng huquqli a'zosi sifatida tan olinmoqda.[1] Istiqolning dastlabki kunlaridan boshlab O'zbekistonda xalqaro tashkilotlarning faoliyatini o'rganish, xorijiy davlatlar bilan diplomatik, turistik aloqalarni yo'lga qo'yish va bu ishlarda faoliyat yuritish uchun yuqori malakali milliy kadrlar yetishtirish ehtiyoji kelib chiqdi. Shuni ta'kidlash kerakki, O'zbekiston bu ishlarni rejali tarzda amalga oshirdi.

O'zbekiston Respublikasi tashqi siyosatining asosiy ustuvor tamoyillari quyidagilarni tashkil etadi:

- milliy-davlat manfaatlarini ustun qo'ygan holda tashqi siyosatda davlatlarning suveren tengligini hisobga olish;

- umumbashariy qadriyatlarni ustun qo'ygan holda nizoli mojarolarni tinch yo'l bilan hal etish;
- tashqi siyosatdagi teng huquqlilik va o'zaro manfaatdorlikni o'rnatishda boshqa mamlakatlarning ichki ishlariga aralashmaslik;
- tarcha tinchliksevar davlatlar bilan tashqi aloqalarni o'rnatishga intilish;
- talqaro huquq normalarini tan olgan holda jahon hamjamiyatida xalqaro talablarga rioya qilish;
- tashqi siyosatda ko'p tomonlama aloqalarni o'rnatishda xalqaro tashkilotlar doirasida aloqalarni kengaytirish;[1]

O'zbekiston mustaqillikka erishgan davrning dastlabki yilidayoq MDH Mustaqil Davlatlar Hamdo'stligi xalqaro tashkilotiga 1991-yil 21-dekabrda Almatada bo'lib o'tgan uchrashuvda 11 ta davlat qatorida a'zolikka qabul qilindi. Ular bu uchrashuvda davlatlarning hududiy butunligini tan olish, amaldagi chegaralar, ularning ochiqligi, fuqarolarning harakati erkinligiga, xalqaro tinchlik va xavfsizlikni ta'minlash, harbiy harakat va qurol-yarog' tarqatishning oldini oldishda birgalikda harakat qilishga kelishib oldilar[2]. O'zbekiston MDH doirasida bir qator muhim bitim va shartnomalarni imzoladi, jumladan, iqtisodiy va savdo hamkorligini rivojlantirish, transport va kommunikatsiya sohalarida integratsiyani kuchaytirish, shuningdek, xavfsizlik va mudofaa masalalarida qo'shma chora-tadbirlarni amalga oshirishga oid hujjatlar. Shu bilan birga, MDH doirasidagi hamkorlik O'zbekistonning muntazam barqarorlik va tinchlikni mustahkamlash siyosatiga xizmat qildi, xususan, transmilliy jinoyatchilik, terrorizm va ekstremizmga qarshi kurashishda muhim platforma bo'ldi.

Biroq tarix davomida O'zbekiston MDH bilan hamkorlikda o'zining mustaqil pozitsiyasini saqlab qoldi va ba'zi masalalarda tashkilotning qarorlaridan vaqtincha chekinish yoki alohida pozitsiya bildirgan holatlar ham bo'lgan. Shu bilan birga, MDH O'zbekiston uchun iqtisodiy va mintaqaviy aloqalarni rivojlantirish, savdo-iqtisodiy integratsiya va transport-logistika sohasidagi tashabbuslarni amalga oshirish imkoniyatini yaratdi.

1945-yil tashkil topgan yana bir muhim tashkilotlardan biri BMT tashkiloti, mojarolarni hal qilish, davlatlar aro tinchlik va osoyishtalikni ta'minlash maqsadida tashkil qilingan.[3] 1992-yil 2-martda O'zbekiston xalqaro munosabatlarning to'la huquqli subyekti sifatida Birlashgan Millatlar Tashkilotiga a'zo bo'lib, dunyo miqyosida tan olindi.[3www.yuz.uz] Bu hodisa Respublikamizning mustaqil davlat sifatida xalqaro doirada o'z o'rnini bildirib qo'yish uchun qulay imkoniyat bo'ldi. Yana bir muhim voqealardan biri shundaki, [4]1993-yil 24-oktyabrda Toshkentda BMT vakolatxonasi ochildi va bu davlatimizga berilgan muhim bir ishonchdan dalolat. Birlashgan Millatlar Tashkilotida Birinchi Prezidentimiz Islom Karimov 48-sessiyasida "ommaviy qirg'in qurollarni tarqatmaslikni ta'minlash bo'yicha kerakli xalqaro kafolatlarni qabul qilishni, yadro sinovlarni butunlay to'xtatish" haqida ma'ruza qildi, 50 yilligiga bag'ishlangan tadbirda esa prezidentimiz Afg'onistondagi keskinlikni hal etish hamda Orol dengizi qurishi bilan bog'liq bo'lgan global ekologik muammoni haqida nuqt so'zladi. [4]

Shuningdek, Prezidentimiz Shavkat Mirziyoyev ham BMT bosh assambleyasining 72-sessiyasida, 2020-yil 25-sentyabrda videokonferensiya tarzida tashkil etilgan 75-yubiley sessiyasida, shuningdek, 2021-yil inson huquqlari bo'yicha kengashining 46-sessiyasida onlayn formatda va Bosh Assambleyaning 76-sessiyasida ma'ruza qildi/(parlament.gov sayti, 2023). Umumiy qilib aytganda, O'zbekiston bu tashkilot bilan hamkorlik qilish orqali ijtimoiy sohada: ta'lim, sog'liqni saqlash, ayollar va bolalarni himoya qilish, kambag'allikni kamaytirish kabi yo'nalishlarda loyihalarni amalga oshirdi. Shuningdek, davlatimiz BMT tuzilmalari orqali global muammolar(iqlim o'zgarishi asosiysi Orol dengizi muammosini hal qilish) kabi g'oyalarni amalga oshirishda tavsiyalarni oldi.

O'zbekistonning YUNESKO (Birlashgan Millatlar Tashkilotining Ta'lim, Fan va Madaniyat Tashkiloti) bilan hamkorligi mamlakatning madaniy merosni saqlash, ta'lim tizimini rivojlantirish va ilmiy hamkorlikni kengaytirish sohalarini qamrab oladi. O'zbekiston YUNESKoning faol a'zosi sifatida 1992-yilda tashkilotga qo'shilgan va shu vaqtgacha bir qator dasturlar va loyihalarda faol ishtirok etib kelmoqda. Madaniyat sohasida O'zbekiston YUNESKO bilan

hamkorlik orqali tarixiy va arxitektura yodgorliklarini ro'yxatga olish va ularni xalqaro e'tiborga havola qilish imkoniyatiga ega bo'lgan. Masalan, Samarqand, Buxoro va Xiva kabi shaharlardagi tarixiy obidalar YUNESKOning Jahon merosi ro'yxatiga kiritilgan, bu esa ularning saqlanishi va restavratsiya qilinishini qo'llab-quvvatlashda muhim rol o'ynaydi. Ta'lim sohasida hamkorlik, xususan, maktab va oliy ta'lim dasturlarini zamonaviy standartlarga moslashtirish, ilmiy tadqiqotlarni rivojlantirish va pedagogik tajriba almashishni nazarda tutadi. YUNESKO O'zbekiston maktablarida sifatli ta'limni joriy etish, axborot texnologiyalari va STEM yo'nalishlarini rivojlantirish bo'yicha loyihalarni amalga oshiradi.

Shuningdek, O'zbekiston va YUNESKO ham iqlim o'zgarishi, barqaror rivojlanish maqsadlari, bolalar va ayollar huquqlarini himoya qilish kabi global masalalarda hamkorlik qilmoqda. Bu hamkorlik mamlakatning xalqaro maydondagi obro'sini oshirish va ichki rivojlanishga ijobiy ta'sir ko'rsatishda muhim ahamiyatiga ega.

Xulosa qilib aytganda, O'zbekistonning mustaqillik yillaridagi xalqaro tashkilotlar bilan hamkorligi mamlakatning jahon hamjamiyatidagi nufuzini oshirish, iqtisodiy va ijtimoiy taraqqiyotini ta'minlash hamda mintaqaviy barqarorlikni mustahkamlashga xizmat qiladigan muhim strategik yo'nalish bo'ldi. Shu bilan birga, O'zbekiston o'zining mustaqil siyosiy pozitsiyasini saqlagan holda xalqaro tashkilotlar bilan aloqalarda mintaqaviy va global manfaatlarini himoya qilishga intildi.

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Цифровая трансформация ортопедической стоматологии: роль CAD/CAM-систем

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Современная ортопедическая стоматология переживает этап стремительной цифровой трансформации, в центре которой находятся компьютерные технологии и CAD/CAM-протезирование. Интеграция цифровых методов в диагностический и клинический рабочий процесс обеспечивает качественно новый уровень точности, воспроизводимости и предсказуемости ортопедического лечения. С позиции доказательной медицины именно CAD/CAM-технологии сформировали фундамент для развития высокоточной стоматологии, минимизирующей роль человеческого фактора и повышающей биомеханическую надёжность ортопедических конструкций.

Научные исследования последних лет подтверждают, что цифровые методы значительно улучшают краевое прилегание коронок и мостовидных протезов: величина краевой щели при фрезеровании составляет 20–60 мкм, что существенно превосходит показатели традиционного литья. Интраоральное сканирование позволяет отказаться от неинформативных и неточных слепочных процедур, обеспечивая высокоточное отображение топографии зубов и мягких тканей. Внедрение цифрового проектирования облегчает функционально-окклюзионный анализ, повышает точность моделирования контактов и снижает риск окклюзионных перегрузок.

Особое значение имеет расширение возможностей материаловедения: диоксид циркония, литийдисиликатная керамика и современные полимеры отличаются высокой эстетикой, биосовместимостью и механической устойчивостью. CAD/CAM-обработка формирует однородную структуру с минимальным числом дефектов, что повышает долговечность конструкций. Параллельно стремительно развивается аддитивное производство — 3D-печать, позволяющая изготавливать модели челюстей, временные коронки, хирургические шаблоны и сложные ортопедические конструкции, тем самым расширяя вариативность клинических решений.

Таким образом, CAD/CAM-протезирование представляет собой ключевое направление современной ортопедической стоматологии, обеспечивая точность, биомеханическую стабильность, высокую эстетику и клиническую предсказуемость. Дальнейшая интеграция цифровых технологий — интраорального сканирования, виртуальной артикуляции и 3D-печати — создаёт предпосылки для формирования полностью цифрового протокола лечения, соответствующего принципам персонализированной медицины.

Ключевые слова: CAD/CAM, компьютерные технологии, цифровая стоматология, ортопедическое лечение, интраоральное сканирование, 3D-печать, диоксид циркония, литийдисиликат.

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Одонтогенные Инфекции: Современные Клинические Протоколы И Минимально Инвазивные Технологии

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Одонтогенные инфекции остаются одной из наиболее значимых и клинически сложных проблем челюстно-лицевой хирургии, что обусловлено как высоким уровнем распространённости, так и тенденцией к утяжелению течения на фоне роста антибиотикорезистентности. По данным современных исследований, нелеченные одонтогенные процессы являются ведущей причиной развития поднижнечелюстных, окологлоточных и глубоких клетчаточных флегмон, нередко сопровождающихся серьёзными системными осложнениями. Это определяет необходимость унификации диагностических и лечебных протоколов на основе доказательной медицины.

В структуре воспалительных процессов доминируют одонтогенные абсцессы и флегмоны, возникающие в результате распространения инфекции через костные структуры и фасциальные пространства. Клиническое течение во многом зависит от вирулентности микрофлоры, состояния иммунного статуса пациента, а также своевременности обращения за медицинской помощью. Диагностика должна опираться на комплекс клинических, лабораторных и инструментальных методов. Особое значение приобретает использование конусно-лучевой компьютерной томографии (КЛКТ) и ультразвуковой верификации глубоких гнойных очагов, что повышает точность определения зоны поражения и оптимизирует планирование хирургического доступа.

Ключевым элементом стандарта лечения остаётся своевременное хирургическое вмешательство, включающее адекватное вскрытие и дренирование очага, санацию первичного одонтогенного источника и создание условий для полноценного оттока экссудата. Минимально инвазивные технологии, включая эндоскопическую ассистенцию, активные дренажные системы и фотодинамическую санацию, демонстрируют высокую эффективность при снижении травматичности вмешательства и ускорении репаративных процессов. Интеграция таких технологий позволяет существенно сократить частоту рецидивов и уменьшить тяжесть воспалительной реакции.

Антибактериальная терапия должна строиться с учётом современных данных о микробиологическом спектре и локальных данных об устойчивости. В качестве стартовой эмпирической терапии рекомендуется сочетание β -лактамов с ингибиторами β -лактамаз или альтернативные схемы с линкозамидами при аллергии к пенициллинам. Обязательным компонентом является деэскалация антибиотика после получения результатов бактериологического анализа. Дополнительным направлением оптимизации терапии становится применение местных антисептических средств, пробиотических ополаскивателей и методов фотодинамической терапии.

Таким образом, современные подходы к ведению одонтогенных инфекций предполагают переход от эмпирического лечения к алгоритмизированным, комплексным и доказательным стратегиям, основанным на ранней диагностике, своевременном хирургическом вмешательстве, рациональной антибактериальной терапии и использовании современных технологий. Применение стандартизированных протоколов позволяет эффективно снижать риск тяжёлых осложнений, сокращать сроки лечения и улучшать прогноз у пациентов с одонтогенными инфекциями.

Ключевые слова: одонтогенные инфекции; флегмона; абсцесс; хирургическое дренирование; антибиотикотерапия; антибиотикорезистентность; КЛКТ; стандарты

лечения; челюстно-лицевая хирургия; клинические протоколы; фотодинамическая терапия.

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Analysis Of Power Transformers Failures

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On June 19, 2020, amendments and additions were made to the Law of the Republic of Uzbekistan "On the Rational Use of Energy" dated April 25, 1997, signed by the President of the Republic of Uzbekistan Sh.M. In accordance with the Decree of Mirziyoyev dated February 16, 2017 "On the Strategy of Actions on Five Priority Areas of Development of the Republic of Uzbekistan in 2017-2021", the strategic direction of the development of the fuel and energy complex of the Republic of Uzbekistan is the rational use of energy and energy efficiency. The decisions adopted by the Cabinet of Ministers to address these issues encourage an integrated approach to the political, economic, organizational, managerial, technical and technological aspects of saving electricity. When considering these issues, the decisions adopted by the Cabinet of Ministers encourage an integrated approach to the political, economic, organizational, managerial, technical and technological aspects of saving electricity.

O'zbekiston Respublikasining 1997 yil 25-apreldagi "Energiyadan oqilona foydalanish to'g'risida"gi qonuniga 2020 yil 19-iyunda o'zgartirish va qo'shimchalar kiritildi, O'zbekiston respublikasi Prezidenti Sh.M. Mirziyoyevning 2017 yil 16 Fevraldagi "2017-2021 yillarda O'zbekiston Respublikasini rivojlantirishning beshta ustuvor yo'nalishlari bo'yicha harakatlar strategiyasi" to'g'risidagi Farmonini bajarish yuzasidan, shuningdek, O'zbekiston Respublikasi yoqilg'i energetika majmuini rivojlantirishning strategik yo'nalishi energiyadan oqilona foydalanish va energiya tejamkorligi masalalari hisoblanadi. Ushbu masalalarini hal qilish bo'yicha Vazirlar Mahkamasi qabul qilgan qarorlar elektr energiyani tejashning siyosiy, iqtisodiy, tashkiliy, boshqaruv, texnik va texnologik jihatlariga kompleks tarzda yondoshishga undaydi. Ushbu masalalarini ko'rib chiqishda Vazirlar Mahkamasi qabul qilgan qarorlar elektr energiyani tejashning siyosiy, iqtisodiy, tashkiliy, boshqaruv, texnik va texnologik jihatlariga kompleks tarzda yondoshishga undaydi.

Sanoat korxonalarining kuch va yoritish elektr qurilmalarini elektr energiya bilan ta'minlashda moyli va havoli sovutiladigan ikki chulg'amli uch fazali kuch transformatorlari qo'llaniladi. Tabiiy havoli sovutiladigan (ikkinchi nomi quruq) transformatorlarning chulg'amlari kanallari o'lchamlari uzaytirilgan bo'ladi, bu esa transformatorning eng ko'p qiziydigan qismlarining havo bilan elpinishi sharoiti va issiqlikning uzatilishi yaxshilanadi. Havoli sovutiladigan transformatorlarning tarkibiy tuzilishi moyli sovutiladigan transformatorlarnikidan deyarli farq qilmaydi.



1-rasm. Kuch transformatorlarini tashqi va ichki ko'rinishi

1-jadval. Kuch transformatorlarida uchraydigan eng ko'p nuqsonlar

Transformatorning elementlari	Nuqson	Nuqsonning sababi
Chulg'am	O'ramlar orasi-dagi tutashuv Korpusga ulanib qolishi, fazalar aro tutashuv Zanjirning uzi-lishi	Izolyastiyaning tabiiy eskirishi va emiri-lishi, transformatorning muntazam nomi-naldan yuqori yuklanishda ishlashi, teshib o'tgan qisqa tutashuvlardagi dinamik zo'ri-qishlar Izolyastiyaning eskirishi yoki moyning ho'llanishi Chulg'am chiqish uchlarining kuyishi, chiqish uchlarining sifatsiz kavshar-lash yoki payvandlash natijasida ulanishlarning buzilishi
Kuchlanishni almashlab ulagich	Kontaktning yo'qligi Kontaktli yuzaning erishi	Almashlab ulagich qurilmasi rostlanishi buzilgan Qisqa tutashuv vaqtida kontaktlarga bo'lgan termik ta'sir
Chiqish uchlari	Korpusga ulanib qolish Ba'zi fazalar-ning chiqish uchla-rining o'zaro ula-nib qolishi	Izolyatorlarda darzning yuzaga kelishi, izolyatorning ichki qismi ifloslanishi bi-lan bir paytda transformatoridagi moy darajasining kamayishi Chiqish uchlariga yoki almashlab ulagichga ulangan chiqish simlari izolyastiyasining ishdan chiqishi,
Magnit o'tkazgich	Salt yurish to-kining oshishi Po'lat «Yong'ini»	Magnit o'tkazgich po'lat listlari orasidagi zichlik buzilgan Ba'zi po'lat plastinkalar orasidagi izolyastivaning yoki tortuvchi boltlarning izolyastiyalari ishdan chiqqanligi; plastin-kalarning zichligi buzilgan, magnit o'tkazgich va yarmo orasidagi izolyastion oraliq materialning izolyastiyasining ishdan chiq-qanligi natijasida qisqa tutashgan konturning hosil bo'lishi
Bak va uning moslamalari	Flanstli birik-malardan, kran-lardan va payvand choklaridan moy-ning sizishi	Harorat va mexanik ta'sirlar natijasida payvand choklarining buzilishi, kran prob-kasi yaxshi tortilmagan, flanst ichki qatlami ishdan chiqqan

Elektroenergetikada ishonchlilik muammosi bilan quyidagi amaliy vazifalar bog'liq:

- amaldagi jihoz, elektr uskunalar va tizimlarning ishonchligini statistik baholash va tahlil;
- jihozlar, elektr uskunalar va tizimlarning ishonchligini bashorat qilish;
- ishonchlilik darajasini me'yorlash;
- ishonchlilikka sinash;
- ishonchlilikni hisoblash va tahlil qilish;
- ishonchlilikni ta'minlash;
- loyihalashda, elektroenergetik jihozlarni, uskunalar va tizimlarni yaratish va ekspluatatsiya qilishda texnik echimlarni optimallashtirish.

Ishonchlilikni baholash va hisoblashda quyidagi faktorlar hisobga olinishi lozim:

- tashqi sharoitlar (atmosfera holatlari, transport hodisalari, qurilish ishlari va boshq.);

- ekspluatatsiya darajasi (ehtiyot qismlar, texnika bilan ta'minlanganlik, xizmat ko'rsatadigan xodimning malakasi, texnologik va mehnat intizomi va h.k.);
- zavodda tayyorlanish sifati, sifatni nazorat qilish va ishonchlilik (ishlab chiqarish darajasi, defektsiz tayorlashni tashkil qilish, ishonchlikka sinash va boshq.);
- o'rnatiladigan jihozni ishlatib ko'rish va sozlash (mexanizatsiya darajasi, nazorat asboblari bilan ta'minlanganlik, montaj sifati va boshq.);
- profilaktik xizmat ko'rsatishning davriyligi va sifati (rejaviy va norejaviy ta'mirlashlar, reviziyalar, sinash, diagnostika, holatini tekshirish);
- avariya ta'mirlashni (ta'mirlash texnologiyasi, avariya brigadalarning soni va texnik ta'minlanganligi va boshq.) hamda ishlamay qolishlarni hisobga olishni tashkil qilish;
- avariya qarshi tadbirlarni tashkil qilish.

Ishonchlilik nazariyasining vazifalariga ishonchlikning metodlari va modellari, optimallashtirish metodlari va ishonchlikni prognoz qilishni rivojlantirish bilan bog'liq vazifalar kiradi. Bu vazifalarni amalda elektroenergetikaning barcha aspektlarida, chunonchi elektr energetika tizimining har bir elementini tizim sifatida qarab, yechish oldinda turibdi.

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Increasing The Level Of Protection Of Patients' Personal Data On Telemedicine Platforms

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Abstract

This thesis provides a comprehensive analysis of data protection mechanisms in modern telemedicine platforms and identifies their main technical, legal, and human-factor vulnerabilities. As a solution to the identified problem, a holistic protection model based on the "Defense-in-Depth" concept is proposed. The proposed model integrates three main components: 1) advanced technical measures such as end-to-end encryption (E2EE) and blockchain; 2) regulatory and legal improvements, including the harmonization of HIPAA and GDPR standards and strengthening the ownership of patient data; 3) a human-factor-oriented approach, which involves continuous cybersecurity education and training for healthcare professionals and patients.

Keywords: Telemedicine, data security, privacy, HIPAA, GDPR, multilayered protection, blockchain, patient data, Defense in depth.

Annotatsiya

Ushbu tezisdagi zamonaviy telemeditsina platformalaridagi ma'lumotlarni himoya qilish mexanizmlari kompleks tahlil qilingan va ularning texnik, huquqiy va inson omiliga oid asosiy zaifliklari aniqlangan. Aniqlangan muammoning yechimi sifatida "Ko'p qatlamli mudofaa" (Defense-in-Depth) konsepsiyasiga asoslangan yaxlit himoya modeli taklif etilgan. Taklif etilayotgan model uchta asosiy tarkibiy qismni integratsiyalashgan holda birlashtiradi: 1) yakuniy nuqtadan yakuniy nuqtaga shifrlash (E2EE) va blokcheyn kabi ilg'or texnik choralar; 2) HIPAA va GDPR standartlarini uyg'unlashtirish va bemorlarning ma'lumotlariga egalik huquqini kuchaytirishni o'z ichiga olgan normativ-huquqiy takomillashtirish; 3) tibbiyot xodimlari va bemorlar uchun uzluksiz kiberxavfsizlik ta'limi va tayyorgarligini nazarda tutuvchi inson omiliga yo'naltirilgan yondashuv.

Kalit so'zlar: Telemeditsina, ma'lumotlar xavfsizligi, maxfiylik, HIPAA, GDPR, ko'p qatlamli himoya, blokcheyn, bemor ma'lumotlari, Defense in depth.

So'nggi o'n yillikda telemeditsina tibbiy xizmat ko'rsatish tizimining ajralmas bo'g'iniga aylanishi natijasida geografik masofalar ahamiyatini yo'qotdi, tibbiy xizmat sifati yaxshilandi hamda sog'liqni saqlash xarajatlarini kamaytirish imkoniyati yaratildi. Shu bilan birga, tibbiy yordamning raqamli muhitga ko'chirilishi bemorlarning sog'liq haqidagi maxfiy ma'lumotlarini yangi turdagi xavflarga - kiberhujumlar, ma'lumotlar sizib chiqishi va ularning noqonuniy ishlatilishiga - duchor qilmoqda. Bemorning salomatligiga oid ma'lumotlar moliyaviy yoki oddiy shaxsiy ma'lumotlardan farqli o'laroq, oshkor etilganda jiddiy ijtimoiy, ruhiy hamda iqtisodiy zararlarni keltirib chiqarishi mumkin. Shu sababdan, telemeditsina tizimlarining barqaror va ishonchli rivojlanishi bemor shaxsiy ma'lumotlarini kompleks himoya qilish choralari bilan chambarchas bog'liqdir.

Ushbu maqolaning maqsadi mavjud telemeditsina platformalaridagi xavfsizlik zaifliklarini tizimli tahlil qilish va ularni bartaraf etish uchun amaliy, ko'p qatlamli himoya modelini taklif etishdir.

1. Telemeditsinada ma'lumotlar xavfsizligiga tahdidlar

Telemeditsina ekotizimi bemorlar, shifokorlar, platforma ishlab chiqaruvchilar, bulutli xizmat ko'rsatuvchilar va uchinchi tomon integratsiyalaridan iborat bo'lib, har bir elementi o'ziga xos xavflarni keltirib chiqaradi.

Tahdidlarni quyidagi toifalarga bo'lish mumkin (1-jadval):

1. Texnik tahdidlar:

- Zaif shifrlash. Ko'pgina platformalar ma'lumotlarni faqat uzatish jarayonida shifrlaydi, serverda esa ular ochiq holda saqlanadi, bu serverga ruxsatsiz kirish imkoniyatini oshiradi;
- Xavfli integratsiyalar. Elektron tibbiy yozuvlar tizimi va to'lov tizimlari bilan integratsiyani ta'minlovchi API lardagi zaifliklar keng ko'lamli ma'lumot oqishiga olib kelishi mumkin;
- Eskirgan dasturiy ta'minot. Platforma va uning komponentlaridagi o'z vaqtida yangilanmagan xavfsizlik tuzatishlari (patch) hujumlar uchun ochiq eshik bo'lib xizmat qiladi.

2. Huquqiy va boshqaruv bilan bog'liq tahdidlar:

- Normativ bo'shliqlar. Ko'plab mobil sog'liq ilovalari, agar ular qamrovdagi tashkilotlar tomonidan boshqarilmasa, HIPAA kabi qonunlar doirasiga tushmay qoladi;
- Transchegaraviy ma'lumot oqimlari. Bemor va shifokor turli mamlakatlarda joylashganda, HIPAA va GDPR talablari to'qnashishi mumkin, bu normativ muvofiqlikni murakkablashtiradi;
- Nazoratning sustligi. Boshqaruvchi organlar tez rivojlanayotgan telemeditsina bozoridagi barcha platformalarni samarali nazorat qilish uchun resurslar yetishmovchiligidan aziyat chekmoqda.

3. Inson omiliga oid tahdidlar:

- Past xabardorlik. Tibbiyot xodimlari va bemorlarning kiberxavfsizlik xavflari (masalan, fishing hujumlari yoki zaif parollardan foydalanish) haqidagi bilimining yetarli emasligi eng keng tarqalgan zaiflik hisoblanadi;
- Qulaylikka intilish. Ko'p bosqichli autentifikatsiya kabi qo'shimcha xavfsizlik choralari foydalanuvchilar qiyin va vaqt talab qiluvchi deb hisoblashi, ularni chetlab o'tishga olib keladi.

1-jadval. Telemeditsina platformalaridagi asosiy xavfsizlik tahdidlari.

Tahdid kategoriyasi	Tahdid turi	Tavsifi	Oqibatlar
Texnik tahdidlar	Zaif shifrlash	Ma'lumotlarning to'liq (E2EE) shifrlanmasligi	Ma'lumotlarning o'g'irlanishi va manipulyatsiyasi
	Xavfli API integratsiyasi	Uchinchi tomon interfeyslaridagi zaifliklar	Keng ko'lamli ma'lumot sizishi
	Eskirgan dasturiy ta'minot	O'z vaqtida yangilanmagan xavfsizlik tuzatishlari	Ma'lum hujum turlariga ochiqlik
Huquqiy tahdidlar	Boshqarishdagi bo'shliqlar	Turli mamlakatlardagi qonunlarning mos kelmasligi	Qonunbuzarlik va jarimalar
	Transchegaraviy ma'lumot oqimi	HIPAA va GDPR talablarining to'qnashuvi	Muvofiqlashtirish qiyinliklari
	Nazorat sustligi	Boshqaruvchi organlarning resurslari yetishmovchiligi	Qonunbuzarliklarning aniqlanmasligi
Inson omili tahdidlari	Fishing hujumlari	Xodimlarning firibgarlik xatlariqa tushib qolishi	Login ma'lumotlarining o'g'irlanishi
	Zaif parollar	Oddiy va takrorlanuvchi parollardan foydalanish	Ruxsatsiz kirish imkoniyati
	Xabardorlik yetishmasligi	Xavfsizlik protokollarini bilmaslik	Noto'g'ri ma'lumot boshqaruvi

Taklif etilayotgan ko'p qatlamli himoya modeli

Mazkur muammolarni hal qilish uchun "bir qatlamga ishonmaslik" prinsipiga asoslangan "Defense in depth" modeli taklif etiladi. Ushbu model to'rtta o'zaro bog'langan qatlamni o'z ichiga oladi (2-jadval).

2-jadval. Ko'p qatlamli himoya modelining tarkibiy qismlari.

Qatlam	Asosiy komponentlar	Amalga oshirish usullari	Kutilayotgan natija
Texnik asos	- End-to-End shifrlash (E2EE) -Ko'p bosqichli autentifikatsiya (MFA) - Muntazam Audit	-Kuchli kriptografik algoritmlar -Biometrik autentifikatsiya -Tashqi ekspertlar tekshiruv	Ma'lumotlarning maxfiyligi va yaxlitligini ta'minlash
Innovatsion texnologiyalar	- Blokcheyn - Zero Trust arxitekturas - Sun'iy Intellekt	- O'zgarmas audit izlari - Doimiy tekshiruv -Anomaliyalarni aniqlash	Proaktiv himoya va shaffoflik
Huquqiy mexanizmlar	- Global standartlarni uyg'unlashtirish - Privacy by Design - Bemor huquqlari	- Xalqaro hamkorlik -Dizayn bosqichidagi integratsiya - Rozilik boshqaruvi	Qonuniy muvofiqlik va ishonch
Inson omili boshqaruvi	- Xodimlarni o'qitish -Bemorlarni xabardor qilish -Foydalanish qulayligi	- Muntazam treninglar -Oddiy qo'llanmalar - tushunarli interfeys	Xavfsiz xulq-atvor va mas'uliyat

1-qatlam. Asosiy texnik himoya choralari. Bu qatlam platformaning minimal xavfsizlik standartlarini belgilaydi:

- Yakuniy nuqtadan yakuniy nuqtaga shifrlash (E2EE). Barcha muloqot (video, audio, matn) va saqlanadigan ma'lumotlar butun yo'lda shifrlangan bo'lishi kerak;
- Kuchli autentifikatsiya. Parol bilan cheklanmasdan, majburiy ko'p bosqichli autentifikatsiya (MFA) joriy etilishi lozim;
- Muntazam audit va sinovlar. Tashqi mutaxassislar tomonidan tekshiruvlar va suqilib kirishga testlash o'tkazib turilishi zarur.

2-qatlam. Rivojlangan texnologik innovatsiyalar:

- Blokcheyn texnologiyasi. Ma'lumotlarga kirish va o'zgartirish bo'yicha o'zgarmas audit izi yaratish, shuningdek, bemorning o'z ma'lumotlari ustidan nazoratini ta'minlovchi aqlli shartnomalar (smart contracts) orqali rozilikni boshqarish;
- Zero Trust arxitekturas. "Hech qachon ishonma, har doim tekshir" prinsipiga asoslanib, tarmoq chegarasidan qat'iy nazar, har bir so'rov qat'iy tekshiruvdan o'tkazilishi kerak.

3-qatlam. Huquqiy va siyosiy takomillashtirish:

- Global standartlarni uyg'unlashtirish. HIPAA, GDPR va boshqa muhim qonunlarni telemeditsina kontekstida uyg'unlashtirish;
- "Loyihalash jarayonidagi mahfiylik" (Privacy by Design) tamoyilini majburiy qilish. Platforma ishlab chiqilishining dastlabki bosqichlaridan boshlab maxfiylik va xavfsizlik talablari asosiy mezon bo'lishi kerak.
- Bemorlarning ma'lumotlarga egalik huquqini ta'minlash. Bemorlar o'z ma'lumotlarini kim, qachon va qanday maqsadda ishlatayotganini aniq ko'ra olishi va boshqarishi lozim.

4-qatlam. Inson omiliga yo'naltirilgan ta'lim:

- Xodimlarni muntazam tayyorlash. Tibbiyot xodimlari uchun real ssenariylar asosida phishing, ijtimoiy muhandislik va ma'lumotlarni noto'g'ri boshqarish xavflari bo'yicha treninglar o'tkazish;
- Bemorlarni bilimini oshirish. Bemorlar uchun maxfiylik siyosatlarini oddiy tilda tushuntirish va ularni o'z ma'lumotlari xavfsizligi uchun mas'uliyatli harakatlar qilishga undovchi resurslar yaratish.

Quyida ko'rib chiqilgan tahdidlarga qarshi yechim sifatida taklif etilgan choralar ta'sir doirasi bo'yicha mosligi keltirilgan. 3-jadval turli xil tahdid turlari uchun qisqa muddatli, o'rta muddatli va uzoq muddatli himoya choralari qanday moslashtirilishini ko'rsatadi.

3-jadval. Tahdidlar va ularga qarshi himoya choralari mosligi.

Tahdid turi	Qisqa muddatli chora	O'rta muddatli chora	Uzoq muddatli chora
Zaif shifrlash	TLS/SSL ni yangilash	E2EE ni joriy etish	Kuchli kalit boshqaruvi tizimi
Phishing hujumlari	Xodimlarni ogohlantirish	Muntazam treninglar	AI asosida filtrlash
Huquqiy tafovutlar	Mavjud qonunlar tahlili	Xalqaro standartlarga moslash	Global regulyator bilan hamkorlik
API zaifliklari	Mavjud API larni tekshirish	Xavfsiz kodlash standartlari	Avtomatlashtirilgan xavfsizlikka testlash

Xulosa

Taklif etilgan ko'p qatlamli himoya modeli telemeditsina tizimlarida ma'lumotlar xavfsizligini ta'minlash bilan bog'liq murakkab muammolarga kompleks yechim taklif etadi. Ushbu yondashuv faqat texnik himoya choralariga tayanib qolmay, balki huquqiy talablar va inson omilini bir butun tizim sifatida integratsiyalashni nazarda tutadi. Modelning ustunligi uning qatlamlararo o'zaro ta'sirida namoyon bo'ladi: bir qatlamdagi zaifliklar boshqa qatlamlar tomonidan kompensatsiya qilinadi va natijada barqaror, moslashuvchan hamda ishonchli himoya muhiti shakllanadi.

Amalda qo'llash jarayonida esa bir qator cheklovlar mavjud — xususan, kichik telemeditsina platformalari uchun joriy etish xarajatlarining yuqoriligi, xavfsizlik va qulaylik o'rtasidagi muvozanatni topishdagi murakkablik, hamda tizimni kengaytirishda zarur resurslarning yetishmasligi. Shu bilan birga, Sun'iy intellekt (AI) va Tibbiyot Interneti (IoMT) texnologiyalarining tez sur'atlar bilan rivojlanishi ma'lumotlar xavfsizligiga qo'yiladigan talablarni yanada kuchaytirmoqda.

Xulosa qilib aytganda, telemeditsina platformalarida axborot xavfsizligini ta'minlash faqat texnik vazifa emas, balki bemorlarning ishonchini mustahkamlash va sog'liqni saqlash tizimining barqaror rivojlanishini ta'minlash uchun muhim shartdir. Taklif etilgan ko'p qatlamli yondashuv esa bu maqsadga erishishda amaliy, tizimli va strategik asos sifatida xizmat qilishi mumkin.

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Analysis Of Power Waste In The Electricity Supply System Of Light Industry Enterprises

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The modern stage of development of electrical engineering has its impact on industrial enterprises to take their place in the domestic and foreign markets through the production of high-quality and export-oriented products. In particular, this process, in particular, the construction of existing industrial enterprises and new production facilities, the increase in demand for energy and the occurrence of interruptions in the supply of electricity to consumers in some regions, the problems of improving the power supply system and the use of modern technologies to eliminate them. A study of the operating modes of equipment in the textile industry has shown that if we prevent or eliminate defects in the electro-mechanical systems of these enterprises, this will lead to a reduction in costs in the enterprise and we will achieve a reduction in the cost of production.

Sanoat korxonalarida sifatli va eksportbop mahsulotlarni ishlab chiqarish orqali ichki va tashqi bozorda o'z o'rnini egallashga elektr yuritmalari rivojlanishining zamonaviy bosqichi o'z ta'sirini ko'rsatadi. Ayniqsa bu jarayon, hozirgi vaqtda mavjud sanoat korxonalari va yangi ishlab chiqarish korxonalarining barpo etilishi, energiyaga bo'lgan talabning ortishi va ba'zi bir hududlarda iste'molchilar elektr ta'minotida uzilishlar ro'y berishi, elektr ta'minoti tizimini takomillashtirish muammolari va ularni bartaraf etishning zamonaviy texnologiyalaridan foydalanishni taqazzo etyapti. To'qimachilik sanoatidagi uskunalardagi ishlash rejimlarini o'rganish shuni ko'rsatdiki, agar biz ushbu korxonalardagi elektro-mexanik tizimlardagi nuqsonlarni oldini olsak yoki bu nuqsonlarni bartaraf qilsak, bu korxonadagi sarf-xarajatlarning kamayishiga olib keladi va biz mahsulot tan narxini kamaytirishga erishamiz.

O'zbekistonda hozirda kunda yig'ishtirilgan paxta hosilining deyarli 70% gachasi qayta ishlanmoqda. Hozirda ishlab turgan paxta tozalash korxonalarining texnologik qurilmalari va ularning elektr jihozlari zamon talabiga mos ravishda qayta jihozlanishi zarurdir. Shuning uchun mavjud bo'lgan bu texnologik qurilmalar va ularning elektr jihozlarini ishlatilish sharoitlari, energetik ko'rsatkichlari va texnik holatlarini tavg'ish qiligan holda, ularning energitik samarali ishlashini tashkil etish chora va tadbirlarni ishlab chiqish kerak bo'ladi.

To'qimachilik korxonalari Buxoro viloyati va respublikada eng keng tarqalgan korxonalardir. Buxoro viloyatida 80 dan ortiq to'qimachilik korxonalari faoliyat ko'rsatmoqda. Hozirgi kunda O'zbekiston Respublikasiga chet eldan olib kelinadigan zamonaviy texnika va texnologiyalar joriy etilmoqda, ular Yevropa standartlari talablariga muvofiq elektr energiyasi bilan ta'minlanishi kerak. Aks holda, ushbu texnikalar kutilgan sifat va ishlashni ta'minlay olmaydi. Zamonaviy texnologik qurilmalar elektr tarmog'iga faol teskari ta'sir ko'rsatadi va shu bilan birga elektr energiyasining sifati hamda ishonchliligiga qat'iy talablar qo'yadi. Ushbu holatlar zamonaviy talablarni hisobga olgan holda korxonalarni rekonstruksiya qilishni, xususan, elektr energiyasidan foydalanish sifati va samaradorligini, iste'molni avtomatlashtirishni, hisobga olishni va boshqalarni hisobga olgan holda taklif qiladi. Bu, o'z navbatida, zamonaviy talablarni hisobga olgan holda, samaradorlikni aniqlash metodologiyasini takomillashtirishni talab qiladi. Sanoatni rivojlantirishning eng samarali usuli bu energiya va texnologik uskunalarni modernizatsiya qilish bilan energiya tejankor ishlab chiqarishga o'tishdir. Energiyani tejashga sarflangan mablag'larning iqtisodiy samaradorligi energiya narxiga to'g'ridan-to'g'ri

mutanosibdir, ya'ni energiya narxi qancha ko'p bo'lsa, sanoatdagi energiya sarfini kamaytirishga imkon beradigan texnik yechimlarni ishlab chiqish tezlashadi. Respublikamizda va dunyoda energiya resurslari narxining keskin ko'tarilishi bilan iqtisodiyotning barcha tarmoqlarida energiya tejashning dolzarbligi va samaradorligi oshib bormoqda. Shu sababli, iqtisodiyotimizning asosiy ustuvor yo'nalishlaridan biri elektr energetikasini modernizatsiya qilish, energiya sarfini kamaytirish va samarali energiya tejash tizimini joriy etish bo'yicha chora-tadbirlarni amalga oshirishdir. Iqtisodiyotimiz raqobatbardoshligini yanada oshirish, aholi farovonligining o'sishi ko'p jihatdan mavjud resurslardan va birinchi navbatda elektr energiyasi va energiya resurslaridan foydalanishni qanchalik ehtiyotkorlik va iqtisodiy jihatdan o'rganganimizga bog'liq.

Mavjud energiya va xom-ashyolardan ehtiyotkorlik va tejamkorlik bilan foydalanmasdan O'zbekiston iqtisodiyotini rivojlantirish mumkin emas. Bu bugungi kunda faoliyatning eng muhim sohasi, ishlab chiqarishning raqobatbardoshligini oshirish manbai, iqtisodiyotni xalqaro bozorga qo'shilish usuli. O'zbekiston sanoatida ishlab chiqarish birligiga to'g'ri keladigan elektr energiyasining iste'moli Yevropaning rivojlangan mamlakatlari, AQSh va Yaponiyadan bir necha barobar yuqori. Bu sanoatda energiya tejash uchun katta imkoniyatlar mavjudligini ko'rsatadi. Dunyoda energiya resurslari narxining ko'tarilishi bilan bir qatorda korxonalar faoliyati sharoitining o'zgarishi bilan sanoat korxonalarining elektr ta'minoti tizimining (SET) samaradorligini baholash mezonlari yaqinda o'zgargan.

Jahon bozorida raqobatbardosh mahsulot ishlab chiqarish ishlab chiqarish samaradorligini oshirishni va ishlab chiqarish tannarxini pasaytirishni talab qiladi. Ushbu muammoni hal qilish xarajatlarning barcha tarkibiy qismlarini har tomonlama o'rganishni va asossiz yuqori xarajatlar manbalarini aniqlashni o'z ichiga oladi.

Hozirgi paytda mahalliy to'qimachilik korxonalari uskunalarining tamiri uchun ajratiladigan mablag'larning ko'p qismi elektro-mexanik va elektr ta'minoti qismlarlariga sarf bo'lmoqda. Bundan ko'rinib turibdiki agar biz elektro-mexanik tizimlardagi nuqsonlarni aninqlash va ularni oldina olishning umumiy tizimini ishlab chiqsak bu albatta korxona xarajatlarining katta qismini tejab qolinishiga olib keladi. Bu orqali korxonadagi sarf xarajatkamayishiga va ish unumdorligining oshishiga erishish mumkin bo'ladi.

Energiya tejamkorlikning samarali bo'lishi uchun yangi texnologiyalar va jihozlardan foydalanish, mavjud bo'lgan jihozlarni modernizatsiya qilish hamda mukammallashtirish zarur, balki mahalliy va ikkilamchi resurslardan foydalanish hamda energiya iste'molchini to'g'ri tashkil etish, ya'ni energetik menedjment va audit o'tkazish maqsadga muvofiqdir:

- energiya iste'molchi korxona bilan energiya ishlab chiqaruvchi tashkilot o'rtasida o'zaro hamkorlik qilish.

Energetik menedjmentning asosiy bajaradigan fuksiyalari:

- energiya tejamkorlik bo'yicha takliflar ishlab chiqish;
- energiya tejamkor loyihalarni ishga tushirish va ularni boshqarish;
- korxonaning barcha xodimlari orasida energiya tejamkorlikning muhim hamda zarurligi to'g'risida tarbiy-tushuntirish ishlarini olib borish;
- sex, uchastkalar bo'yicha energiya iste'moli bo'yicha olingan ma'lumotlar qayta ishlanadi va taqdim etiladi.

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Проблемы Перевода Русских Идиом На Тюркские Языки

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Аннотация

В статье рассматриваются основные проблемы и трудности перевода русских идиоматических выражений на тюркские языки. Анализируются лингвокультурологические, структурно-семантические и прагматические аспекты передачи фразеологизмов. Исследование базируется на сопоставительном анализе переводческих стратегий и приёмов, применяемых при передаче русских идиом на узбекский, казахский и другие тюркские языки.

Ключевые слова: идиома, фразеологизм, перевод, тюркские языки, эквивалентность, лингвокультурология, переводческие трансформации

ВВЕДЕНИЕ

Проблема перевода идиоматических выражений остаётся одной из наиболее сложных и актуальных в современной теории и практике перевода. Идиомы представляют собой устойчивые словосочетания, значение которых не выводится из значений составляющих их компонентов, что создаёт особые трудности при межъязыковой передаче. При переводе с русского языка на тюркские языки эти трудности усугубляются существенными различиями в языковой структуре, культурно-исторических традициях и концептуальных картинах мира носителей этих языков. Актуальность исследования обусловлена возрастающей потребностью в качественном переводе художественной, публицистической и научно-популярной литературы, где идиомы играют важную роль в создании экспрессивности и образности текста. Целью данной работы является выявление основных проблем перевода русских идиом на тюркские языки и определение оптимальных переводческих стратегий для их преодоления. Специфика тюркских языков, относящихся к агглютинативному типу и имеющих иную систему образности, требует от переводчика не только глубоких знаний обоих языков, но и понимания культурных кодов, лежащих в основе фразеологических единиц.

МЕТОДОЛОГИЯ И АНАЛИЗ ЛИТЕРАТУРЫ

Исследование базируется на методе сопоставительного анализа русских идиоматических выражений и их переводов на тюркские языки, преимущественно узбекский и казахский. В работе используются теоретические положения, разработанные в трудах ведущих специалистов по фразеологии и теории перевода. Согласно классификации, предложенной исследователями фразеологии, идиомы характеризуются семантической целостностью, устойчивостью компонентного состава и воспроизводимостью в речи [1]. При переводе фразеологических единиц ключевым является понятие эквивалентности, которое в теории перевода рассматривается как сохранение коммуникативного эффекта оригинала [2].

Анализ литературы показывает, что перевод идиом может осуществляться несколькими способами: поиск полного фразеологического эквивалента, использование частичного эквивалента, калькирование, описательный перевод и контекстуальная замена [3]. В работах, посвящённых особенностям тюркских языков, подчёркивается, что их фразеологический фонд формировался под влиянием тюркской мифологии, ислама, кочевого образа жизни и контактов с другими культурами [4]. Важным аспектом является лингвокультурологический подход к переводу, предполагающий учёт культурных

коннотаций и национальной специфики образности [5]. Специалисты отмечают, что при отсутствии прямых эквивалентов переводчик должен стремиться к сохранению функциональной нагрузки идиомы, её стилистической окраски и прагматического воздействия на адресата [6].

РЕЗУЛЬТАТЫ И ОБСУЖДЕНИЕ

Анализ переводческой практики позволяет выделить несколько ключевых проблем при передаче русских идиом на тюркские языки. Первая и наиболее существенная проблема связана с безэквивалентностью значительной части русских фразеологизмов в тюркских языках. Многие русские идиомы основаны на реалиях, отсутствующих в культуре тюркских народов, что делает невозможным подбор полного эквивалента. Например, идиомы, связанные с русской историей, православной традицией или климатическими особенностями России, не имеют прямых соответствий в тюркской фразеологии. В таких случаях переводчик вынужден прибегать к описательному переводу или поиску функционально схожих выражений, что неизбежно приводит к потере части экспрессивности и образности оригинала. Вторая проблема заключается в различиях образных систем русского и тюркских языков.

Образность русских идиом часто основана на метафорических переносах, характерных для европейской культурной традиции, в то время как тюркские идиомы опираются на иные культурные коды и ассоциации [7]. Например, образы, связанные с определёнными животными, растениями или природными явлениями, могут иметь совершенно разные коннотации в русской и тюркской культурах. Это требует от переводчика не просто языковой компетенции, но и глубокого понимания культурного контекста обоих языков. Третья значимая проблема связана со структурными различиями между русским и тюркскими языками. Агглютинативная природа тюркских языков, их система послелогов вместо предлогов, иной порядок слов и способы выражения грамматических значений создают трудности при попытке сохранить формальную структуру идиомы. Калькирование русских идиом на тюркские языки часто приводит к созданию неестественных, непонятных носителям языка конструкций. Четвёртая проблема касается передачи стилистической окраски и функционально-прагматических характеристик идиом. Русские фразеологизмы различаются по степени экспрессивности, эмоциональной окраске и стилистической принадлежности, и переводчик должен стремиться сохранить эти характеристики в переводе. Однако подобранный эквивалент или описательный перевод могут не совпадать с оригиналом по стилистическому регистру, что влияет на адекватность перевода.

Пятая проблема связана с необходимостью учёта контекста употребления идиомы. Одна и та же русская идиома в различных контекстах может актуализировать разные оттенки значения, и переводчик должен выбирать такой вариант перевода, который соответствует конкретному контексту употребления [8]. Это требует от переводчика не механического подбора эквивалентов, а творческого подхода к каждому случаю употребления идиомы. Практика показывает, что наиболее успешными являются переводы, в которых переводчик сочетает различные стратегии в зависимости от типа идиомы, контекста и коммуникативной задачи текста. При наличии устойчивых фразеологических соответствий предпочтение отдаётся полным или частичным эквивалентам, при их отсутствии используются функциональные аналоги или описательный перевод с сохранением прагматического эффекта оригинала.

Многозначность и полисемия некоторых русских идиом создаёт дополнительные трудности при выборе адекватного варианта перевода на тюркские языки. Многие русские фразеологизмы в процессе исторического развития приобрели несколько значений или оттенков значения, которые актуализируются в зависимости от контекста. При переводе на тюркские языки переводчик нередко сталкивается с ситуацией, когда для каждого из значений многозначной идиомы требуется подбирать отдельный

эквивалент или использовать различные переводческие стратегии. Это особенно актуально для идиом с высокой частотностью употребления в русском языке, которые со временем расширили свою семантическую структуру и могут использоваться в различных речевых ситуациях с разными коммуникативными целями. Семантическая вариативность таких фразеологизмов требует от переводчика тщательного анализа контекста и выбора именно того варианта перевода, который соответствует конкретному значению идиомы в данном употреблении. В некоторых случаях один и тот же русский фразеологизм может переводиться на турецкий язык совершенно разными способами в зависимости от актуализируемого значения, что подчеркивает невозможность механического, словарного подхода к переводу идиоматических выражений.

Значительную сложность представляет перевод авторских трансформаций устойчивых выражений, часто встречающихся в художественной литературе, публицистике и разговорной речи. Писатели и журналисты нередко намеренно изменяют компонентный состав идиом, их грамматическую структуру или контаминируют несколько фразеологизмов для создания дополнительного стилистического эффекта, игры слов или иронии. Передача таких трансформированных идиом на турецкие языки требует от переводчика особого мастерства, так как необходимо не только донести основное значение, но и сохранить авторскую интенцию, игровой характер и стилистическую маркированность выражения. В турецких языках система фразеологических трансформаций может строиться на иных принципах, и прямое калькирование русских окказиональных изменений часто не производит ожидаемого эффекта на реципиента перевода. Переводчику приходится искать функционально схожие способы создания экспрессивности и языковой игры, опираясь на возможности и традиции турецкой фразеологии, что иногда приводит к необходимости значительных трансформаций на уровне формы при сохранении коммуникативной функции и прагматического воздействия оригинала. Успешное решение этой задачи требует не только языковой компетенции, но и литературного таланта, чувства стиля и глубокого понимания художественных традиций обеих культур.

ЗАКЛЮЧЕНИЕ

Проведённый анализ позволяет сделать вывод о том, что перевод русских идиом на турецкие языки представляет собой сложный многоаспектный процесс, требующий от переводчика не только языковой компетенции, но и культурологических знаний, творческого подхода и учёта множества факторов. Основными проблемами являются безэквивалентность значительной части русских фразеологизмов, различия в образных системах и культурных кодах, структурные особенности турецких языков, необходимость сохранения стилистических и прагматических характеристик, а также учёт контекста употребления. Успешное решение этих проблем возможно при использовании гибкой переводческой стратегии, сочетающей различные приёмы и методы в зависимости от конкретной коммуникативной ситуации. Перспективным направлением дальнейших исследований является создание двуязычных фразеологических словарей с подробными комментариями о культурных особенностях и контекстах употребления идиом, а также разработка методических рекомендаций для переводчиков, работающих с парой языков русский-турецкие. Качественный перевод идиом способствует не только эффективной межкультурной коммуникации, но и взаимообогащению культур, сохранению национального своеобразия каждого языка при одновременном расширении его выразительных возможностей.

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Лексико-Семантическое Поле «Цвет» В Русском И Узбекском Языках: Сравнительный Анализ

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Аннотация

В данной статье рассматриваем лексико-семантическое поле «цвет» в русском и узбекском языках с точки зрения их лингвокультурных особенностей. Проводим сравнительный анализ семантики цветообозначений, выявляются общие и национально-специфические черты. Результаты исследования показывают, что семантика цвета тесно связана с восприятием мира, национальными традициями и культурой народа. Результаты анализа свидетельствуют о различиях в символике и эмоциональной окраске цветообозначений, что имеет значение для перевода и межкультурной коммуникации.

Ключевые слова: цветообозначения, семантическое поле, символика цвета, сравнение, русская и узбекская культура.

Abstract

The article examines the lexical-semantic field “color” in Russian and Uzbek languages from the perspective of their linguistic and cultural features. A comparative analysis of color semantics is provided, identifying both universal and culturally specific traits. The research shows that the semantics of color are closely connected with the worldview, national traditions, and culture of the people. The results highlight differences in symbolism and emotional meanings of color terms, which are important for translation and intercultural communication.

Keywords: color terms, semantic field, color symbolism, comparison, Russian and Uzbek culture.

Цвет является одной из важнейших категорий человеческого восприятия и отражает не только физические свойства окружающего мира, но и культурные, национальные и эмоциональные особенности народа. В лингвистике изучение цветообозначений помогает понять механизмы формирования национального мировидения и особенностей языковой картины мира [2, с. 24].

В условиях активного межкультурного общения и перевода актуально рассмотреть, как различные языки кодируют и интерпретируют цветовые явления. Сравнительное исследование русского и узбекского языков позволяет выявить как общие универсальные основы, так и национально-специфические особенности лексико-семантического поля «цвет» [7, с. 45].

Основная проблема заключается в том, что цветовые термины нередко обладают различной символикой в разных культурах. Так, один и тот же цвет может выражать противоположные эмоции или культурные значения. Например, «белый» в русском языке ассоциируется с чистотой и радостью, а в узбекском («oq») также обозначает благородство, счастье, но в некоторых контекстах может символизировать траур [4, с. 52]. Это различие в культурных коннотациях создаёт трудности в переводе и межкультурной интерпретации.

Цель нашей работы - сравнить структуру и семантические особенности лексико-семантического поля «цвет» в русском и узбекском языках и для достижения этой цели поставлены следующие задачи:

1. Определить состав и структуру цветообозначений в обоих языках;
2. Выявить культурные и символические значения основных цветов;
3. Установить сходства и различия в коннотативном и эмоциональном значении цветowych лексем;
4. Показать роль цветообозначений в формировании национальной языковой картины мира.

Исследование показало, что ядро лексико-семантического поля «цвет» в русском и узбекском языках совпадает по основным спектральным цветам: «белый – oq», «чёрный – qora», «красный – qizil», «синий – ko'k», «зелёный – yashil», «жёлтый – sariq».

Однако в узбекском языке наблюдаются дополнительные оттеночные значения, отражающие природно-климатические и культурные реалии региона. Например, слово «ko'k» может означать не только «синий», но и «небесный», «молодой» (в значении «незрелый», «зелёный»), что отсутствует в русском языке [1, с. 38].

Русский язык, напротив, отличается богатством переносных значений: «чёрный день» (трудное время), «белая зависть» (добрая зависть), «красная линия» (граница дозволенного). В узбекском языке подобные метафорические выражения также встречаются, но имеют другие формы, например: «oq yo'l» («счастливого пути»), «qora niyat» («злая цель») [3, с. 60].

Таким образом, совпадения наблюдаются на уровне денотативных значений, а различия — в области коннотаций и символики. Русская традиция чаще связывает цвета с эмоционально-этическими оттенками, тогда как узбекская — с природными и духовными образами.

Лексико-семантическое поле «цвет» в русском и узбекском языках отражает универсальные категории восприятия и национальную специфику культуры. Семантический анализ показал, что цветообозначения в обоих языках выполняют не только номинативную, но и культурно-символическую функцию.

Результаты этого исследования могут быть полезны для преподавания лексикологии, межкультурной коммуникации и практики перевода. В дальнейшем планируется расширить исследование за счёт анализа фразеологизмов и пословиц, содержащих цветочные компоненты.

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Method Of Extraction Of Phosphate Acid And Increasing Its Concentration

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Abstract

This in the article extraction phosphoric acid extraction methods , results was extraction phosphate from acid feed amount high was good quality fertilizer acquisition technologies presented. The result was In the EPA fluorine amount reduce methods seen .

Keywords: EPA, sulfate acid, dihydrate method, gypsum , $K_{div.}$, K_{wash} . K_{com} .

Literature Description: From phosphorites extraction to obtain phosphoric acid (EPA) Use 93% sulfuric acid for is preferable . In this technological in process water balance improves– plaster washing many in quantity done with water increase opportunity is created. As a result to the trash removable phosphogypsum - removable phosphoric acid and neutralization necessary was sewage waters amount decreases.

Acid concentration increase removable phosphate the amount of P_2O_5 in the acid does not change, plaster crystallization acceptable conditions through in advance is determined. Next higher concentrated when using sulfuric acid heat separation (dilution) the heat increase (at the expense of) [sharply increases](#) , and it from the system separate to take demand is being done .

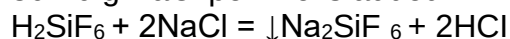
Dehydrated in a way in the production of phosphoric acid phosphate raw thing in the content all of fluorine (mainly SiF_4 (in the form of) only 3-5% gas is phase separated, approximately 80% to the EPA, and 15-17% to to phosphogypsum will pass. Cooling method and of the fan to transfer related without from the extractor separate removable gas in the content fluorides concentration, fluorine $0,2-2,5g/m^3$ what organization Extraction in the shop installed absorption systems , mainly waste gases cleaning for intended , in which harvest H_2SiF_6 will be of weak solutions neutralization to the stations will be sent or phosphogypsum wash for is used .

Practical part Natural from phosphates extraction phosphoric acid production release indicators analytical information according to is determined :

P_2O_5 of technological yield (K_{yield} , %), i.e. P_2O_5 of raw from the material phosphate to acid transition level apatite again in operation – 95-96 % and various phosphorites for – 71-94 % organization does . U P_2O_5 of to the solution divorce coefficient ($K_{div.}$, %) by 2-3 % is small . This phosphogypsum phosphate from acid washing full explained by the absence of : washing The coefficient ($K_{washing}$, %) is usually 97-99% . organization However: $K_{yield} = K_{yield} K_{wash} / 100$ g equal to . Extraction dehydrated in the way to acid P_2O_5 of productive (farm) output 93-95 % organization it will , so suitable 1 t of P_2O_5 product contains 2,73-2,65 t of apatite (1075-1045 kg of P_2O_5) and 2,48-2,45 t (CaO what tie for stoichiometric standard, i.e. 0,915 t) of 100% sulfuric acid is consumed per 1 t of apatite . Phosphorites again at work spending coefficients apatites again at work relative to : phosphate 1,5-2,3 times ; phosphate P_2O_5 in the composition 1,02-1,27 times for sulfuric acid ; 1,2-1,7 times for sulfuric acid is bigger . Raw material expenses EPA works release general 70-80% of their expenses organization will reach .

From apatite dehydrated in a way The obtained EPA contains: 25-32% P_2O_5 ; 1,8-2,8% SO_3 ; 0,1-0,4% CaO ; 0,3-0,4% Al_2O_3 ; 0,3-0,5% Fe_2O_3 ; 1,7-2% F.

Within the EPA fluorine mainly H_2SiF_6 in the form of will be . Acid from fluorine cleaning , H_2SiF_6 what sodium , potassium , barium salting through transfer Usually 1 liter of phosphate 30-40 g NaCl per kilo is added .



Reaction according to harvest to be less soluble sodium silicon fluoride to sink falls and initially paused , then centrifugation and filtering separated by a path is taken . So up to 75-85% fluorine separated and phosphate acidic his/her amount up to 0.2 -0.3 % decreases . Sodium defluorinated with chloride phosphoric acid, especially at high temperatures when increased of equipment strong to corrosion reason will be . That's why for acid evaporation to concentrate by means of necessity at birth , defluoridation soda or sodium phosphate using done is increased.

Double superphosphate , ammophos , nitroammofoska working release for 45-55% P_2O_5 caught phosphoric acid, ammonium polyphosphates and liquid fertilizers to take for and phosphate with 72-83% P_2O_5 acids demand Such in cases extraction Phosphoric acid is evaporated . It is known that every What is (98%

H_3PO_4 up to) concentration clean phosphate acid steam only from water consists of , theoretical to evaporate it when it is taken through high concentrated solutions to take possible . In practice and equipment of materials corrosion on account of evaporation difficulty gives birth . Temperature and acid concentration corrosion with increasing accelerates . From this except for concentration with increasing acid content additions solubility sharp decrease on account of to sink falls . Precipitation remains heated surface internal to the surface sitting mold, heat exchange worsens.

Extraction phosphate acidify concentration with the increase in it melted hexafluorosilicate The vapor pressure of the acid also increases . This because of phosphate 52-57% of acid P_2O_5 until in evaporation elementary acidic 80-90% of fluorine is gaseous to phase separated comes out and in this case in the EPA fluorine amount up to 0,5 -0,8 % decreases .

The EPA evaporation for bubbling concentrators – acid-resistant material cameras are also used , in which evaporation acid surface layer through turned on boiling gas to give through done is increased . Here heat transmitter surface no , heat exchange boiling gas and acid straight away from the collision done increases ; in this harvest to be sediment hanging in case remains and together with acid from the apparatus comes out , then it is cut off through cleaned. To the camera oven gases at a temperature of 650-900 °C is given . Especially natural gas combustible graphite immersion with burner concentrators effective works . Bubble concentrator and immersion with burner in equipment gas together with himself quite a bit in quantity phosphoric acid vapor take comes out , and it in electrostatic precipitators holding stay necessary It contains 8.5-9 g/ m^3 fluorine (electrofilter) to from the entrance before mixing with air (at the expense of – 3 g/ m^3) waste gases in cleaning many quantitative P_2O_5 H_2SiF_6 solution are taken ; they use difficulty gives birth to . Fog harvest to be – P_2O_5 loss increases, from this outside environment pollution reason will be. Such equipment more superphosphate acids to take for is used . In this case to evaporate contains 54-55% P_2O_5 caught solutions (from a vacuum evaporator) then) is given . Such goals for heater to the camera high steam under pressure (~3 MPa) is transmitted vacuum-evaporated equipment is also used possible.

Conclusion. Present at the time bubbling concentrators in place further improved , high at the level from the heat user with airlift equipment is being used. They internal part graphite protected by a pipe vertical steel from the pipe consists of . His evaporative acid injection bottom from the part boiling gas flow sent , produced to be gas-liquid mixture high from the part is released . Liquid from separation then and from the heat vaporizable acid in heating from use then , waste gas, absorption acid fog in devices, SiF_4 and from HF is cleaned . Liquid complex fertilizers working release for intended , contains 68-70% P_2O_5 to take acid for to concentrate two consecutively in stages : in the 1st from 52-54 to 64% , and in the 2nd - 68-70% P_2O_5 until is held .

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Physiology Of Teeth

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Abstract

This article provides a comprehensive overview of the anatomical structure and physiological functions of teeth, the stages of their development, and the influence of the oral environment on dental tissues. The work explains the role of enamel, dentin, pulp, periodontal tissues, and salivary glands, focusing on their biological and functional characteristics. In addition, the mechanisms leading to dental diseases such as caries, pulpitis, and periodontitis are discussed in detail. The article is valuable for students of dentistry, medicine, and biological sciences.

Keywords: dental physiology, enamel, dentin, pulp, caries, periodontitis, odontogenesis.

Annotatsiya

Ushbu maqolada tishlarning anatomik tuzilishi, fiziologik funksiyalari, rivojlanish bosqichlari, og'iz bo'shlig'i muhitining tishlarga ta'siri hamda patologik jarayonlarning shakllanish mexanizmlari keng yoritilgan. Tadqiqotda emal, dentin, pulpa, periodont hamda so'lak bezlari faoliyati ilmiy nuqtai nazardan tahlil qilinadi. Shuningdek, karies, pulpit va periodontit kabi kasalliklarning kelib chiqishiga olib keluvchi fiziologik omillar izohlanadi. Maqola stomatologiya, tibbiyot va biologiya yo'nalishidagi talabalar uchun nazariy-amaliy ahamiyatga ega.

Kalit so'zlar: tishlar fiziologiyasi, emal, dentin, pulpa, karies, periodontit, odontogenez.

Kirish: Inson organizmidagi eng muhim tuzilmalaridan biri bo'lgan tishlar ovqatni qayta ishlash, nutqni shakllantirish, yuz-jag' tizimining estetik ko'rinishini ta'minlash va umumiy sog'liq holatini saqlashda beqiyos rol o'ynaydi. Tishlar fiziologiyasi — tishlar tuzilishi, funksiyasi, rivojlanishi, ularning o'zgarishi va kasalliklarga uchrashi jarayonlarini o'rganuvchi fan bo'lib, stomatologiya sohasining asosiy tayanchlaridan biridir.¹

Tishlarning tuzilishida emal, dentin, pulpa, sement, periodontal boylamlar, jag' suyaklari va so'lak tizimi kabi ko'plab murakkab biologik elementlar ishtirok etadi. Ularning o'zaro uyg'un faoliyati tishning normal ishlashini ta'minlaydi.²

Tishlarning anatomik tuzilishi

Inson tishi murakkab tuzilishga ega bo'lib, bir nechta qatlam va funksional qismlardan tashkil topgan. Tishning asosiy vazifalari — chaynash, nutq hosil qilish va estetik ko'rinishni ta'minlash — uning ichki tuzilmasiga bevosita bog'liq. Tish uch asosiy qismdan iborat: toj, ildiz va bo'yin qismi.³

1.1. Toj (koronka) qismi

Toj — tishning og'iz bo'shlig'i ichida ko'rinib turadigan qismi bo'lib, uning yuzasi emal bilan qoplangan. Emal o'zining yuqori mineral tarkibi tufayli organizmdagi eng mustahkam to'qima hisoblanadi. Undagi gidroksiapatit kristallari tishni mexanik kuchlanishlardan, kimyoviy moddalar ta'siridan va bakteriyalar faoliyatidan himoya qiladi. Emal qatlami tirik to'qima emasligi sababli tiklanish xususiyati juda cheklangan.⁴

1.2. Dentin: Emal ostida joylashgan dentin tishning asosiy massasini tashkil qiladi. Dentin emalga qaraganda yumshoqroq, biroq suyakdan qattiqroq bo'ladi. Uning tarkibida millionlab

¹ Axmedov A., Jalilov B. Odam anatomiyasi va fiziologiyasi. — Toshkent: O'zMU nashriyoti, 2022.

² Berdiyev M. Odam fiziologiyasi. — Toshkent: Fan va texnologiya, 2018.

³ Ten Cate A.R. Oral Histology: Development, Structure and Function. — St. Louis: Mosby, 2019.

⁴ Nanci A. Ten Cate's Oral Histology. — Elsevier, 2020

mikroskopik naychalar joylashgan bo'lib, ular pulpa bilan bog'langan. Ushbu naychalar tashqi issiqlik, sovuq, bosim yoki kimyoviy moddalarning pulpa nervlariga ta'sirini tezda yetkazib, sezgirlikni ta'minlaydi. Dentin nisbatan tirik to'qima hisoblanadi va asta-sekin tiklana oladi.⁵

1.3. Pulpa (mag'iz): Pulpa — tishning markazida joylashgan yumshoq to'qima bo'lib, unda qon tomirlari, limfa tomirlari va nervlar mavjud. Pulpa tishni oziqlantiradi, uning o'sishi va rivojlanishini boshqaradi, shuningdek, himoya reaksiyalarini boshqaradi. Pulpaning yallig'lanishi, odatda, kuchli og'riq bilan namoyon bo'ladi, chunki bu qismda nerv tolalari juda ko'p.⁶

1.4. Periodont to'qimalari: Periodont tishni jag' suyagiga bog'lab turuvchi murakkab tuzilma bo'lib, u quyidagi qismlardan iborat:

- **Sement** — ildiz yuzasini qoplaydigan qattiq qatlam.
- **Periodontal boylamlar** — tishni alveola devoriga elastik tarzda bog'lab turuvchi tolalar.
- **Alveolyar suyak** — tish ildizini ushlab turuvchi maxsus jag' qismi.

Bu tuzilmalar chaynash bosimining tish va jag' o'rtasida to'g'ri taqsimlanishini ta'minlaydi.⁷

2. Tishlarning fiziologik funksiyalari: Tishlar organizmda bir nechta muhim funksiyalarni bajaradi. Ularning har biri hayotiy faoliyat uchun zarur.

2.1. Chaynash (mastikatsiya) funksiyasi: Chaynash jarayonida tishlar ovqatni mexanik maydalanishdan o'tkazadi. Kesuvchi tishlar ovqatni tiladi, it tishlari yirtadi, kichik va katta jag' tishlari esa uni maydalab, og'iz bo'shlig'ida so'lak bilan aralashtiradi. Bu jarayon ovqat hazm bo'lishining boshlanish bosqichi hisoblanadi va me'da-ichak tizimi faoliyatini yengillashtiradi.⁸

2.2. Nutq hosil qilish: Til, lablar va tishlar birgalikda tovushlarni shakllantiradi. Ba'zi fonemalar ("s", "z", "t", "f") tishlar ishtirokisiz to'g'ri talaffuz qilinmaydi. Tishlarning noto'g'ri joylashuvi yoki yo'qligi nutq buzilishiga olib kelishi mumkin.⁹

2.3. Estetik funksiyasi: Tishlarning shakli, rangi va joylashuvi insonning tashqi ko'rinishida muhim rol o'ynaydi. Chiroyli tabassum psixologik ishonchni oshiradi, yuzning proporsiyasini to'g'ri saqlaydi.

2.4. Himoya funksiyasi: Tishlar yuz-jag' tuzilmalarini mustahkamlab turadi. Chaynash jarayonida so'lak ajralishi ko'payadi, bu esa og'iz bo'shlig'ida bakteriyalarga qarshi tabiiy muhitni shakllantiradi.

3. Tishlarning rivojlanishi (Odontogenez): Tishlar rivojlanishi embrion davridan boshlanadi va murakkab ketma-ket jarayonlar orqali shakllanadi.

3.1. Boshlang'ich bosqich: Homila 6–7 haftaligida tish plastinkasi shakllana boshlaydi. Bu bosqichda og'iz epiteliyida tish kurtaklari hosil bo'ladi.

3.2. Toj shakllanishi: Bu bosqichda emal hujayralari — ameloblastlar, dentin hosil qiluvchi odontoblastlar faoliyat yuritadi. Tishning ko'rinadigan qismi aynan shu davrda shakllanadi.

3.3. Ildizning shakllanishi: Tishning ildizi asta-sekin rivojlanadi. Hertvig epiteliy qatlami ildizning shakli, uzunligi va yo'nalishini belgilaydi. Ildiz to'liq shakllangach, tish og'iz bo'shlig'iga chiqadi va funksional holatga o'tadi.

4. So'lak tizimining roli: So'lak tish salomatligi uchun eng muhim tabiiy himoya vositasidir. U uchta yirik juft so'lak bezi va ko'plab kichik bezlar tomonidan ishlab chiqariladi.

So'lakning asosiy vazifalari:

- Og'iz bo'shlig'ini namlab turadi, yutish jarayonini osonlashtiradi.
- Tarkibidagi fermentlar — lizotsim, laktoferrin va immunoglobulinlar bakteriyalarni yo'q qiladi.
- Emalni qayta mineralizatsiya qiladi, ya'ni yo'qotilgan minerallarni tiklaydi.
- Ta'm bilish retseptorlarini faollashtiradi.

⁵ Hargreaves K.M., Goodis H.E., Seltzer G. Seltzer and

⁶ Fejerskov O., Kidd E. Dental Caries: The Disease and Its Clinical Management. – Wiley-Blackwell, 2021.

⁷ Newman M.G., Takei H.H., Klokkevold P.R. Carranza's Clinical Periodontology. – Elsevier, 2022.

⁸ Xudoyberdiyev R. *Stomatologiya asoslari*. – Toshkent: Innovatsiya, 2021.

⁹ WHO. Oral Health Factsheet. – World Health Organization, 2022.

- Ovqat qoldiqlarini yuvib tashlab, karies xavfini kamaytiradi.

Soʻlak miqdorining kamayishi (kserostomiya) karies, gingivit va boshqa kasalliklarning tez rivojlanishiga sabab boʻladi.

5. Tishlarning patologik fiziologiyasi

5.1. Karies: Karies — tish emalining mineral tarkibi buzilishi natijasida yuzaga keladigan kasallik. Shakarlar parchalanib kislotalar hosil qiladi, bu esa emal strukturasi yemirilishiga olib keladi. Gigiyena yetishmasligi va soʻlak kamligi karies xavfini yanada oshiradi.

5.2. Pulpit: Pulpit — tish magʻizining yalligʻlanishi. Karies chuqur bosqichga oʻtganda infeksiya pulpa boʻshligʻiga kiradi va kuchli ogʻriq yuzaga keladi. Davolanmasa, pulpa nekrozi yuzaga keladi.¹⁰

5.3. Periodontit: Periodontit — ildiz atrofidagi toʻqimalarning yalligʻlanishi boʻlib, alveolyar suyakning yemirilishiga olib keladi. Natijada tish boʻshashib, hatto tushib qolishi mumkin. Vaqtida davolash periodontal toʻqimalarni saqlab qoladi.

Xulosa: Tishlar fiziologiyasi inson tanasidagi muhim tizimlardan birini tashkil etadi. U ovqatni maydalanishidan tortib, nutq hosil boʻlishi, estetik koʻrinish va himoyaviy funksiyalargacha boʻlgan jarayonlar bilan bogʻliq. Tish salomatligini saqlash uchun muntazam gigiyena, toʻgʻri ovqatlanish va stomatolog koʻrigidan oʻtish zarur. Tish tuzilishi va uning fiziologik jarayonlarini chuqur oʻrganish stomatologiyani yanada samarali rivojlantirishga xizmat qiladi.

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Formation Of Students' Cartographic Competences In The Context Of Interdisciplinary Integration (On The Example Of Mathematics And Geography)

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Abstract

Ensuring mutual integration between academic subjects serves to consolidate students' knowledge and enrich their imagination on the topics being studied. Therefore, attention is paid to the use of mutual integration between academic subjects in the educational process. However, achieving interdisciplinary integration is a complex process in itself, and the teacher's work experience, professional competence and skills play an important role in achieving it. In the educational process, geography teachers need to pay attention to certain aspects in using the connection and unity between geographical and mathematical knowledge. The article discusses the aspects and factors that need to be paid attention to in ensuring the integration of mathematical and geographical subjects in the development of students' cartographic knowledge.

Keywords: students, cartographic knowledge, development, mathematical knowledge, geographical knowledge, integration, integration of mathematics and geography.

Geography and mathematics are close to each other in terms of the logical structure and theoretical foundations of knowledge. Because any geographical process, phenomenon or spatial situation relies on precise mathematical calculations, quantitative analysis and modeling. Taking into account this feature, the implementation of an integrative approach between mathematics and geography in the educational process will strengthen students' cartographic knowledge and skills, develop their logical thinking and expand their opportunities for effective mastery of new scientific concepts.

The development of students' cartographic knowledge based on the integration of mathematics and geography is ensured by completing the following tasks:

1. MAIN OBJECTIVE

- └ Development of cartographic knowledge

2. MAIN DIRECTIONS

- └ Integrating mathematical knowledge into curricula
- └ Strengthening collaboration among science teachers
- └ Connecting education with real life

3. PRACTICAL MECHANISMS

- └ Organization of practical training
- └ Use of innovative educational technologies

1. Development of cartographic knowledge. The development of cartographic knowledge is the process of systematically forming in students theoretical knowledge and practical skills related to working with maps, plans and other cartographic materials. This process serves to develop spatial thinking, understanding the location, interrelationships and quantitative characteristics of geographical objects and phenomena. Cartographic knowledge is based on the conscious mastery of basic cartographic concepts by students, such as scale, coordinate system, conditional symbols, contour lines, determining distance and area. Also, the development of skills in using maps as a source of information, analyzing them, comparing them and drawing conclusions is an important component of cartographic knowledge. As a result, students develop the competence to understand geographical processes, understand

the relationship between real space and the map, and effectively use cartographic knowledge in practical activities.

II . 1. Ensuring the reflection of mathematical knowledge in curricula. Ensuring the systematic reflection of mathematical knowledge in the curriculum of the subject "Applied Geography" intended for students of academic lyceums is an important condition for the effective implementation of interdisciplinary integration. In this process, the main attention is paid to identifying and revealing the interrelationship between mathematical and geographical knowledge in the content of the subject "Applied Geography". In particular, the acquisition of concepts related to the scale and coordinate system, the formation of practical skills such as calculating area, distance and angles are of great importance. This approach serves to increase the efficiency of the integration process and allows students to further deepen their cartographic knowledge and skills.

II. 2. Establishing cooperation between subject teachers. Establishing continuous and systematic cooperation between mathematics and geography teachers is of great importance in ensuring effective interdisciplinary integration. This cooperation is one of the main factors in achieving positive results in the educational process, which is manifested in the joint development of integrated approaches in the planning, content definition and delivery of lessons. Cooperation between teachers serves to ensure the mutual harmonization of subject content, coordinate educational materials, and form complex knowledge and skills in students.

III. Practical lessons organization to grow. Effective organization of educational lessons is important in developing students' cartographic knowledge and skills. Involving students in active work with maps in this type of lesson, in particular, thematic maps (natural and socio-economic maps), as well as digital maps - practical activities such as calculating the scale and analyzing topographic data based on electronic models of geographic maps, significantly increases their learning and cognitive activity.

In addition, in the "Practical Geography" lessons, the introduction of Global Positioning System (GPS) and Geographic Information Systems (GIS) technologies into the teaching process and the formation of competencies in students to work with these systems are of important methodological importance. This approach ensures the practical orientation of the geographical knowledge acquired by students and expands their possibilities of applying them in real-life situations.

IV. Connecting education with real life. In the process of teaching the subject of "Practical Geography", it is of great pedagogical importance to organize the tasks given to students on the basis of issues that are often encountered in their daily lives, directly related to the subject of mathematics. Such an approach, on the one hand, ensures the practical orientation of the knowledge acquired by students, and on the other hand, serves to firmly assimilate the knowledge acquired on the basis of real-life situations and to store it in long-term memory.

For example, tasks based on the integration of geography and mathematics knowledge could be as follows:

1. A task to determine scales by different sizes (1 mm, 1 cm, 10 cm).

Based on the given scale dimensions, express the actual distance on the Earth's surface in units of 1 mm, 1 cm, and 10 cm.

Setting scales for different sizes

No.	Scales	Dimensions on the map		
		1mm	1 cm	10 cm
1.	1:100,000			
2.	1:500,000			
3.	1:10000			
4.	1:5000			
5.	1:2000			

6.	1:1000			
7.	1:500			
8.	1:200			
9.	1:100			

2. Tasks related to calculating scale and distances.

2.1. Using the scale given on the map, determine the distance between the cities of **Samarkand and Bukhara** (Kattakurgan, Navoi, Zarafshan). During the measurement process, determine the straight-line distance in centimeters and convert it to a real distance .

2.2. On the given map, the distance between the cities **of Tashkent and Fergana** is 6.2 cm. If the scale of the map is **1:7,500,000** , calculate the actual distance between these cities in kilometers .

2.3. Using a 1:2,000,000 scale map, determine the total distance along **the Namangan - Andijan - Fergana** route. First, calculate the distance between each city separately, and then find the total distance .

3. Task on identifying objects in a coordinate system.

3.1. Determine the location of specific points in the geographic coordinate system (latitude and longitude):

A. Using a world map, determine the geographical location of the following cities: London, Paris, Berlin, Rome, Cairo, Tehran, Delhi, Tokyo, New York, Rio de Janeiro.

The world's major cities have

Geographic coordinates of

No.	Major cities of the world	Width	Length
1	London		
2	Paris		
3	Berlin		
4	Rome		
5	Cairo		
6	Tehran		
7	Delhi		
8	Tokyo		
9	New York		
10	Rio de Janeiro		

B. From the map of Uzbekistan, determine the location of the cities of Angren, Bekabad, Chiragchi, Dangara, Guzar, Jizzakh, Koson, Margilan, Muynak, Nukus, Olot, Parkent, Kokand, Termez, and Yangiyer.

Geographic coordinates of cities in Uzbekistan

No.	Cities of Uzbekistan	Width	Length
1	Angren		
2	Bekabad		
3	Chiragchi		
4	Dang'ara		
5	Guzar		
6	Jizzakh		
7	Koson		
8	Margilan		
9	Muynak		
10	Nukus		
11	Olot		
12	Parkent		

13	Kokand		
14	Termez		
15	Yangiyer		

3.2. Mark arbitrary objects on the map using a Cartesian coordinate system (the location of each point in a chosen spatial reference system is represented by three coordinates x, u, z).

3.3. World maps using the central points of different continents

Determine the geographical coordinates.

**Central on different continents
of points geographical coordinates**

No.	Name of continents	Geographic coordinates of central points	
		Width	Length
1.	Europe		
2.	Europe and Asia		
3.	North America		
4.	South America		
5.	Africa		
6.	Australia		
7.	Australia and Oceania		
8.	Antarctica		

3.4. Determine the coordinates of settlements in the local coordinate system:

A. Settlements of Samarkand region, Urgut district:

G'o's, Amonqo'tan, Karasuv, Mingchinor, Chumchuqli and Kamongaron Neighborhood Citizens' Assembly (NCA).

Settlements	Coordinates (X; Y)	Settlements	Coordinates (X; Y)
G'o's NCA		Mingchinar NCA	
Amonqo'ton NCA		Chumchuqli NCA	
Karasuv NCA		Kamongaron NCA	

B. Large population centers of the Jalalabad region of the Kyrgyz Republic: Jalalabad, Karakul, Maylisay, Tashkumir, Kokyongak, Kerben, Toktogul, Shamoldisay, Kuchkor-Ata, Bazarkurgan.

Settlements	Coordinates	Settlements	Coordinates
Jalalabad		Kerben	
Karakul		Toktogul	
Maylisay		Shamoldisay	
Tashkumir		Kuchkor-Ata	
Kokyongak		Bazarkurgan	

C. Find which cities are located at the following coordinates .

1. 41° north latitude, 69° east longitude
2. 40° north latitude, 71° east longitude
3. 39° north latitude, 66° east longitude
4. 37° north latitude, 67° east longitude
5. 43° north latitude, 59° east longitude
6. 51° north latitude, 0° longitude
7. 48° north latitude, 2° east longitude

8. 40° north latitude, 116° east longitude
9. 34° south latitude, 151° east longitude
10. 35° north latitude, 139° east longitude

3.4. Find the distance between two objects located on the same meridian.

“The cities of Vladikavkaz and Baghdad are located almost on the same meridian, but at different latitudes. The difference in latitude is 10°. Find the length of the air route that can be carried out along the common meridian between these cities” [3, – p. 34].

4. An assignment to analyze demographic data (studying local or national population, population growth rates, population density).

4.1. Based on the table below, indicate which country has the highest percentage of the population under the age of 15 and which countries have the same percentage of the population over the age of 65.

Population size and composition (2019)

No.	Countries	Population, million people	Birth and death rates 1000 people	
			Birth rate	Death toll
1.	China	1387	12	7
2.	France	65	12	9
3.	Kenya	45	23	7
4.	Egypt	95	29	5

4.2. Calculate the population growth rate of Uzbekistan based on 5-year data and present the results of the calculation in a diagram.

Population growth rate of Uzbekistan (2019-2023)

No.	Years	Birth rate (thousand people)	Death toll (thousand people)	Overall growth (million people)
1.	2019			
2.	2020			
3.	2021			
4.	2022			
5.	2023			

4.3. Graph the 5-year population growth rate of Uzbekistan.

5. Assignment on natural resource analysis and mapping.

5.1. Calculate the total area of mineral-rich areas based on the map of Uzbekistan.

5.2. Express the ratio of the total area of mineral resources to the total area of the republic, calculated based on the map of Uzbekistan, in percentage.

5.3. Compare the total area of mineral-rich areas in Uzbekistan with the total area of mineral-rich areas in the Russian Federation.

5.4. Express the ratio of the total area of mineral-rich regions in Uzbekistan to the total area of mineral-rich regions in the Russian Federation in percentage.

6. Assignment on analyzing climate data.

5.1. Using the example of a specific year, show data on the amount of annual precipitation by region of Uzbekistan on a map.

Annual precipitation by region of Uzbekistan (2023)

No.	Provinces	Annual precipitation	No.	Provinces	Annual precipitation
1.	Andijan		8.	Surkhandarya	
2.	Bukhara		9.	Tashkent	
3.	Jizzakh		10.	Fergana	
4.	Navoi		11.	Khorezm	
5.	Namangan		12.	Kashkadarya	
6.	Samarkand		13.	Karakalpakstan	
7.	Syrdarya		-		

5.2. Specific year in the example of Uzbekistan Annual precipitation by region
Calculate the average, minimum, and maximum values based on the data.

Annual precipitation by region of Uzbekistan (2023)

Provinces	Annual precipitation			Provinces	Annual precipitation		
	Four .	Min .	Max .		Four .	Min .	Max .
Andijan				Surkhandarya			
Bukhara				Tashkent			
Jizzakh				Fergana			
Navoi				Khorezm			
Namangan				Kashkadarya			
Samarkand				Karakalpakstan			
Syrdarya							

5.3. For a specific year, plot the average, minimum, and maximum values calculated based on annual precipitation data for the regions of Uzbekistan.

5.4. Using the example of a specific year, display data on annual air temperature by region of Uzbekistan on a map.

Annual air temperature by region of Uzbekistan (2023)

No.	Provinces	Annual temperature air	No.	Provinces	Annual temperature air
1.	Andijan		8.	Surkhandarya	
2.	Bukhara		9.	Tashkent	
3.	Jizzakh		10.	Fergana	
4.	Navoi		11.	Khorezm	
5.	Namangan		12.	Kashkadarya	
6.	Samarkand		13.	Karakalpakstan	
7.	Syrdarya		-		

5.5. Calculate the average, minimum, and maximum values based on annual air temperature data for the regions of Uzbekistan for the year 2023.

Annual air temperature by region of Uzbekistan (2023)

No.	Provinces	Annual air temperature		
		Average	Minimum	Maximum
1.	Andijan			
2.	Bukhara			

3.	Jizzakh			
4.	Navoi			
5.	Namangan			
6.	Samarkand			
7.	Syrdarya			
8.	Surkhandarya			
9.	Tashkent			
10.	Fergana			
11.	Khorezm			
12.	Kashkadarya			
13.	Karakalpakstan			

5.6. Specific year in the example of Uzbekistan provinces according to annual air
Represent the average, minimum, and maximum values calculated based on temperature data
in a diagram.

6. Assignment on historical geographical knowledge.

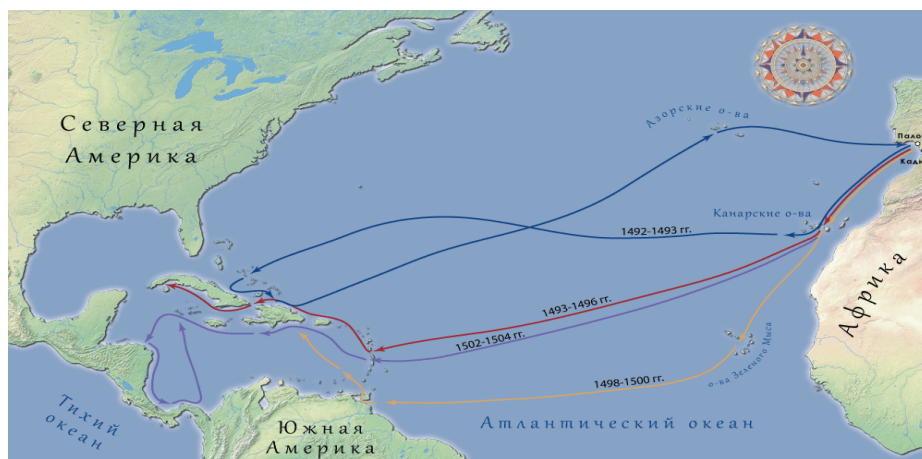
6.1 . Abu Rayhan Al-Biruni's information on determining geographical coordinates [2, –
Compare the indicators that determine the location of the given places [p. 24] and show the
differences.

To determine geographical coordinates

Comparative study of related information

No.	Place names	Geographical latitude		
		According to Abu Rayhan Al-Biruni	According to modern measurement	Intermediate difference
1.	Bukhara	39 o'clock 20'		
2.	Samarkand	40 o'clock 00'		
3.	Baku	39 o'clock 00'		
4.	Darband	66 ° 00'		
5.	Fergana	92 o'clock 00'		
6.	Lost	92 o'clock 00'		

6.2. The 1st, 2nd, 3rd and 4th expeditions of Christopher Columbus according to the coordinate
system [5] Measure the distance of the sea route using these maps illustrated.



Christopher Columbus's 1st, 2nd, 3rd and

Sea routes of the 4th expedition

6.3 . Calculate the diesel fuel consumption of Christopher Columbus for his 1st, 2nd, 3rd, and 4th expeditions at current prices, based on the measured sea route distance.

Ship model: Teplokhod 457

Engine model (power, kW) – K -161-2

Consumption, l/machine-hour – 15.7 D

The average is 30 liters per hour [4] .

The price of diesel fuel is 11,955.6 soums (December 9, 2024) [6] .

**Christopher Columbus spent on his 1st, 2nd, 3rd and 4th expeditions
diesel fuel (at current price; 09.12.2024)**

No.	Expeditions order	Required diesel fuel (in l/machine-hour)	Amount spent on diesel fuel
1.	Expedition 1		
2.	Expedition 2		
3.	Expedition 3		
4.	Expedition 4		

V. Application of innovative technologies in the teaching process . In modern educational conditions, the use of innovative technologies in the process of developing students' cartographic knowledge and skills based on the integration of mathematics and geography is of great pedagogical importance. The introduction of innovative technologies in this process, on the one hand, reflects the development of geography in accordance with the requirements of an information society, and on the other hand, serves to form competencies in students to effectively operate in a digital environment. Today, the use of geographic information systems (GIS) technologies in geography education based on mutual integration with mathematics is increasingly being used. In the process of completing educational tasks based on these systems, the theoretical knowledge available to students is transformed into practical skills and competencies using innovative technologies, which ensures deep and sustainable mastery of cartographic knowledge.

Involving students in tasks based on innovative technologies in the process of teaching the subject of "Applied Geography" significantly expands the possibility of achieving the expected educational results. In particular, using geographic information systems (GIS) programs, students can determine information about the area of the territory in which they live (village, city or district), create a map based on this information, as well as analyze the directions of movement of modes of transport used in everyday life and present them in the form of a map, which serves to form cartographic knowledge and practical skills in students. Such tasks increase the practical significance of students by linking their theoretical knowledge with real geographical space.

Ensuring mutual integration between academic disciplines helps to consolidate students' knowledge, expand their imagination on the topics being studied, and understand the interrelationships between disciplines. At the same time, interdisciplinary integration is a complex and multifaceted pedagogical process that requires carefully planned educational activities. Systematic and effective implementation of the above tasks increases the effectiveness of the interdisciplinary integration process and serves to deepen students' cartographic knowledge and skills.

Therefore, the teacher's work experience, professional competence and pedagogical skills are of decisive importance in achieving effective integration between academic subjects. The development of students' cartographic knowledge based on the integration of mathematics and

geography is ensured, first of all, by implementing complex tasks such as ensuring sufficient reflection of mathematical knowledge in curricula, establishing effective cooperation between subject teachers, organizing practical lessons, linking the educational process with real life, and using innovative technologies in the teaching process.

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PISA Assessment Program And The Principle Of Integration

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Abstract

This article discusses the effective use of the principle of integration in preparing tasks that meet the PISA criteria, in order to involve students in real-life situations, to use methods that encourage them to analyze, think and argue.

Keywords: PISA, assessment, international research, knowledge, skills, oral speech, written speech, reading literacy, text

Annotatsiya

Mazkur maqolada PISA mezonlariga mos topshiriqlarni tayyorlashda o'quvchilarni real hayotiy vaziyatlarga jalb qilish, ularni tahlil qilishga, fikr yuritishga va bahslashishga undaydigan uslublar qo'llanishi uchun integratsiya tamoyilidan unumli foydalanish borasida so'z yuritiladi.

Kalit so'zlar: PISA, baholash, xalqaro tadqiqot, bilim, ko'nikma, og'zaki nutq, yozma nutq, o'qish savodxonligi, matn

XXI asrda ta'lim tizimining asosiy vazifalaridan biri o'quvchilarda faqatgina nazariy bilimlarni emas, balki ushbu bilimlarni real hayotiy vaziyatlarda qo'llash ko'nikmasini shakllantirishdir. Xalqaro miqyosda bu maqsadga xizmat qiluvchi muhim baholash vositalaridan biri – bu PISA (Programme for International Student Assessment) dasturidir. PISA – Iqtisodiy Hamkorlik va Taraqqiyot Tashkiloti (OECD) tomonidan 15 yoshli o'quvchilarning funksional savodxonligini aniqlashga qaratilgan xalqaro baholash tizimidir¹. Bu dastur orqali o'quvchilarning o'zlashtirgan bilimlarini turli hayotiy holatlarda qanday qo'llay olish qobiliyati sinovdan o'tkaziladi. Bu esa ta'lim jarayonini qayta ko'rib chiqish, metodik yondashuvlarni takomillashtirish va zamonaviy tamoyillar asosida rivojlantirish zaruratini yuzaga keltiradi. PISA dasturi o'quvchilarni faqat darslik mazmuni doirasida bilimga ega bo'lish emas, balki real muammolarni hal etish, mantiqiy fikrlash, tahlil qilish, qaror qabul qilish va turli manbalarni solishtirib, ularning asosida mustaqil xulosa chiqarish kabi hayotiy kompetensiyalarni shakllantirishga undaydi. Shunday ekan, o'qituvchi va ta'lim muassasalari uchun asosiy vazifalardan biri – nazariy bilimlarni o'quvchining ongiga singdirish bilan cheklanmasdan, ularni amaliy faoliyatga yo'naltirishdir. Bu yerda "o'rganilgan bilimlar nima uchun kerak?" degan savol markazga chiqadi va o'quvchi bu bilimlarni hayotiy kontekstda nega va qanday qo'llashini anglab yetadi.

PISA baholashida muvaffaqiyatga erishish uchun o'quvchilarda asosiy 3 yo'nalish – o'qish savodxonligi, matematika savodxonligi va fan savodxonligini shakllantirish zarur. Har bir yo'nalishda bilimlarni kontekstual qo'llay olish asosiy mezon sifatida belgilanadi. Shu boisdan ham ta'lim jarayonida integratsiyalashgan yondashuvlardan foydalanish muhimdir. Masalan, biror mavzuni faqat bitta fan doirasida emas, balki bir necha fan kesishmasida ochib berish orqali o'quvchilarni kengroq fikrlashga undash mumkin. Klimat o'zgarishi mavzusi atrof-muhit fanida o'rganilar ekan, unga matematika (statistik tahlil), geografiya (hududiy tafovutlar), va ona tili (matn yaratish va fikr bildirish) vositasida ham yondashish mumkin. O'qituvchining roli bu jarayonda beqiyosdir. U PISA baholash tamoyillarini chuqur anglagan holda, o'quvchilarning har bir mashg'ulotda o'rgangan bilimni qanday amaliy holatlarda qo'llashini rejalashtirib borishi lozim. Har bir darsni hayot bilan bog'lash, savollarga bir nechta yechim topish imkonini berish, muqobil fikrlarni muhokama qilish, o'quvchilarning o'z fikrini erkin bildirishiga sharoit yaratish – ularning barchasi PISA yondashuvlariga mos keladi.

¹ OECD (2015). Students, Computers and Learning: Making the Connection. Paris: OECD Publishing.

O'quvchilarni faollashtirishda baholash mezonlari ham muhim. An'anaviy reytingli baholashdan tashqari, formatif (shakllantiruvchi) baholash usullarini joriy qilish, portfoliolar yig'ish, o'z-o'zini va o'zaro baholash imkoniyatlarini berish, refleksiya qilishga undash orqali o'quvchilar o'z bilimni tahlil qilish va uni amaliyotga yo'naltirishni o'rganadilar.

Zamonaviy yondashuvlardan yana biri – raqamli texnologiyalarni ta'lim jarayoniga integratsiya qilishdir. PISA 2025 yildan boshlab raqamli savodxonlikni ham alohida yo'nalish sifatida baholamoqda. Demak, bugungi o'quvchilar nafaqat kitob va darslik bilan, balki internet, mobil ilovalar, sun'iy intellekt vositalari bilan ishlashni ham o'rganishlari shart. Axborotni izlash, saralash, tahlil qilish va undan to'g'ri foydalanish madaniyati shakllantirilishi lozim. Bu esa nafaqat informatikaga, balki barcha fanlarga raqamli vositalarni qo'llashni taqozo etadi. Masalan, fizika darslarida tajribalarni simulyatsiya qilish, tarix darslarida interaktiv xaritalardan foydalanish, matematika darslarida GeoGebra kabi dasturlarni qo'llash orqali o'quvchilar nazariy bilimlarni jonli va interaktiv muhitda amalda sinab ko'radilar.

Umuman olganda, PISA baholash dasturiga tayyorlanish – bu bir martalik tadbir emas, balki uzluksiz, tizimli, ongli ta'lim yondashuvini shakllantirish jarayonidir. Bu jarayon faqat bilim berish bilan emas, balki bilimlarni to'g'ri, samarali va hayotiy kontekstda qo'llashga o'rgatish bilan kechadi. O'quvchilarni kelajakda muvaffaqiyatli shaxs sifatida kamol topishini ta'minlash uchun ularda nazariy bilimlarni chuqur egallash bilan birga, ularni amaliyotda mustaqil, tanqidiy, mantiqiy va kreativ tarzda ishlatish ko'nikmasi bo'lishi zarur. Aynan shu ko'nikmalar PISA yondashuvining markazida turadi va zamonaviy ta'limning bosh maqsadlaridan biri hisoblanadi. Shuning uchun, PISA mezonlariga asoslangan ta'lim yondashuvlarini o'quv jarayoniga integratsiya qilish, o'quvchilarda chuqur bilim emas, balki bilimlarni qo'llash ko'nikmasini shakllantirish muhim vazifadir. Bu esa ta'lim jarayonida yondashuv va tamoyillarni qayta ko'rib chiqishni, innovatsion usullarni joriy etishni talab etadi.

Yana bir muhim yondashuv bu – o'quv markazidan o'quvchiga o'tish tamoyilini joriy etishdir. Ya'ni, o'qituvchi faqat bilim beruvchi emas, balki yo'naltiruvchi, muammoni qo'yuvchi, tahlil qilishga undovchi, natijani birgalikda muhokama qiluvchi hamkor sifatida maydonga chiqadi. O'quvchi esa passiv tinglovchidan faol ishtirokchiga aylanadi. Bu holat o'z-o'zini baholash, o'z fikrini asoslash va guruhiy ishlar orqali o'rgatuvchi o'quv muhiti yaratishga xizmat qiladi. Aynan shunday yondashuvlar orqali o'quvchilarda o'zlashtirilgan nazariy bilimlarni turli kontekstlarda qo'llay olish salohiyati shakllanadi. PISA baholovlarida o'qish savodxonligi bo'yicha savollar matnni tushunish, asosiy fikrni ajratish, matndan ma'lumotni topish, tahlil qilish va xulosa chiqarishni o'z ichiga oladi. Bu esa o'quvchilarda tanqidiy fikrlashni rivojlantirish, matnga turli nuqtayi nazardan yondashish, ma'lumotlar orasida mantiqiy bog'liqliklarni aniqlashni talab qiladi. Tabiiy fanlar savodxonligi bo'yicha esa keltirilgan faktlar, grafiklar, tajriba natijalari asosida ilmiy asoslangan xulosalar chiqarish, sabab-oqibat munosabatlarini tushunish, ilmiy muammolarga amaliy yechim topish ko'nikmalari talab qilinadi. Matematika savodxonligi esa real hayotiy vaziyatlarni matematik modellash, grafiklar bilan ishlash, statistik ma'lumotlarni tahlil qilish, matematik asoslangan qarorlar qabul qilish kabilarni qamrab oladi. Shu bois, o'qitish jarayonida PISA mezonlariga mos topshiriqlarni tayyorlashda o'quvchilarni real hayotiy vaziyatlarga jalb qilish, ularni tahlil qilishga, fikr yuritishga va bahslashishga undaydigan uslublar qo'llanishi lozim.

Yana bir asosiy tamoyil – fanlararo integratsiya tamoyilidir. PISA baholovlarida ko'plab savollar bir necha fan doirasida tushunilishi, tahlil qilinishi va yechim topilishini talab etadi. Masalan, ekologik muammo haqidagi matnni tahlil qilish uchun o'qish savodxonligi, ilmiy asosda tushunish uchun tabiiy fanlar bo'yicha bilimlar, va yechimni hisoblash uchun matematika savodxonligi zarur bo'ladi. Shu sababli o'quvchilarda tahliliy va kompleks yondashuvni shakllantirish uchun fanlararo integratsiyalashgan topshiriqlarga keng e'tibor qaratish zarur. Bunday topshiriqlar o'quvchining dunyoqarashi kengaytirish, tafakkurini rivojlantirish, hayotiy muammolarga keng qamrovli yondashish ko'nikmasini mustahkamlaydi. Shuningdek, baholash tizimining o'zi ham PISA yondashuviga mos tarzda o'zgartirilishi kerak.

An'anaviy test va yozma ishlar o'rniga, o'quvchining mantiqiy tahlil qilish, muammoni hal qilish, dalillash asosida javob berish malakalarini baholovchi topshiriqlarga o'tilishi lozim. O'zaro baholash (peer assessment), o'z-o'zini baholash (self-assessment), portfolioga asoslangan yondashuvlar PISA mezonlariga yaqin ko'nikmalarni rivojlantirishga xizmat qiladi. Bu usullar o'quvchilarda mustaqil fikr yuritish, o'zini nazorat qilish, o'qishga mas'uliyat bilan yondashishni shakllantiradi.

PISA standartlarida murakkab matnlarni tahlil qilish, grafik va diagrammalardan ma'lumot ajratish, ko'rsatkichlarni baholash va natijaga oid izohlar yozish ko'p uchraydi. Bularning barchasi faqat bitta fandan emas, balki turli fanlar kesishmasida shakllanadigan tafakkur talab etadi. Shu sababli ham, fanlararo integratsiyani kuchaytirish va turli fanlarda olingan bilimlarni umumlashtira olish malakasi o'quvchi ongida shakllanishi kerak. Misol uchun, iqlim o'zgarishi mavzusini o'rganishda geografik faktlar, biologik ta'sirlar, matematik tahlil, texnologik echimlar va axloqiy-ijtimoiy pozitsiyalarni uyg'un holda yoritish o'quvchida kompleks fikrlashga sabab bo'ladi. Bu esa PISA formatiga to'la mos yondashuvdir. Yana bir e'tiborli jihat – PISA topshiriqlari faqat yakka tartibda emas, jamoaviy fikrlashni ham o'rgatishga qaratilgan. Shu nuqtai nazardan qaraganda, sinfdagi darslar davomida guruhlarda ishlash, muhokama qilish, turli nuqtayi nazarlarni taqqoslash, bahs-munozaralarga kirishish orqali o'quvchilar o'z qarashlarini boyitadi va o'z bilimlarini mustahkamlaydi. Guruhiy topshiriqlar orqali o'quvchilar nafaqat bir-biridan o'rganadi, balki o'z fikrlarini to'g'ri bayon qilish, boshqa fikrlarni tinglash va qabul qilishni o'rganadi. Bu jamiyatda ijtimoiy faol, hamkorlikka layoqatli shaxsni shakllantirishda muhim omildir.

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Use Of Pedagogical Technologies In Improving The Quality Of Education

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Annotation

This article discusses the pedagogical possibilities of organizing the educational process on the basis of pedagogical technologies, the tasks expected from the educational process based on a technological approach, and the qualities that can be acquired by the learner.

Key words and phrases: technology, pedagogical technology, innovation, educational innovations.

Annotatsiya

Ushbu maqolada ta'lim jarayonini pedagogik texnologiyalar asosida tashkil etishning pedagogik imkoniyatlari, texnologik yondashuvga asoslangan ta'lim-tarbiya jarayonidan ko'zlangan vazifalar va ta'lim oluvchi tomonidan egallanishin mumkin bo'lgan sifatlar xususida fikr yuritiladi.

Tayanch so'z va iboralar: texnologiya, pedagogik texnologiya, innovatsiya, ta'lim innovatsiyalari.

Bugungi kunda ilm-fan, texnika, ishlab chiqarish va texnologiyaning jadal rivojlanishi jamiyat hayotining barcha sohalarida taraqqiyotining yangi istiqbollarini ochib berdi. Insoniyatning davlat va jamiyat qurilishiga doir asriy tajribalari ijtimoiy munosabatlarni yangicha yondashuvlar asosida tartibga solish borasidagi ilg'or yondashuvlarning qaror toptirilishiga olib keldi.

Ayni vaqtda Respublika ijtimoiy hayotiga shiddatli tezlikda axborotlar oqimi kirib kelmoqda va keng ko'lamni qamrab olmoqda. Axborotlarni tezkor sur'atda qabul qilib olish, ularni tahlil etish, qayta ishlash, nazariy jihatdan umumlashtirish, xulosalash hamda bilim oluvchiga yetkazib berishni yo'lga qo'yish ta'lim tizimi oldida turgan dolzarb muammolardan biri hisoblanadi. Ta'lim-tarbiya jarayoniga pedagogik texnologiyani tadbqiq etish qayd etilgan dolzarb muammolarni ijobiy hal etishga xizmat qiladi.

Pedagogik texnologiya – pedagogikaning shunday bilimlar sohasiki, bu orqali ta'lim va tarbiya tizimida tub burilishlar yuz beradi, o'qituvchi faoliyati yangilandi, yoshlarda kreativ fikrlash ko'nikmalari, bilimga chanqoqlik, o'z-o'ziga ishonch, yangicha dunyoqarash shakllanadi.

Ma'lumki, har qanday pedagogik texnologiya ta'limni rivojlantiruvchi yangi tamoyillarga asoslangan bo'lib, shaxsni har tomonlama shakllantirishga yo'naltirilmog'i kerak. Ilg'or pedagogik texnologiya markazida ta'lim jarayonining rahbari hamda shu jarayonning subekti va obekti bo'lgan o'qituvchi va ta'lim oluvchi turadi.

Shunday ekan, bu ikki shaxsning hamkorligi, o'zaro muloqoti, bir-biriga ko'rsatadigan ta'siri eng zamonaviy va milliy talablar asosida bo'lishi lozim. Buning uchun ta'lim jarayoni, o'qituvchi, ta'lim-tarbiya jarayoni oldiga qo'yilgan talablar, ta'limni tashkil etish va boshqarish tamoyillari hamda yo'llari ta'lim oluvchini aqliy va jismoniy jihatdan rivojlantirish usullari, u bilan hamkorlik qilish, uni o'qish va o'rganishga yo'naltirish, ta'lim oluvchi shaxsiy faoliyatini to'g'ri tashkil etish, ular bilan muloqotga kirishish, muammo va kelishmovchiliklarni bartaraf etish, auditoriyada ijodiy, ishchanlik muhitini vujudga keltirish, ta'lim oluvchi faoliyatini aniq va to'g'ri baholash metodlari bilan qurollangan bo'lishi lozim¹.

O'quv va tarbiya jarayonida pedagogik texnologiyalardan foydalanishdan oldin, avval, uni ishlab chiqishdagi quyidagi omillarga e'tibor qaratish lozim:

1. Ta'lim maqsadlarining ustuvorligi. O'quv jarayonida bir nechta maqsadlar amalga oshiriladi, ammo ta'lim tizimining rivojlanishining turli bosqichlarida u yoki bu maqsadga ustunlik beriladi,

¹ Tojiyev M., Tolipov O'., va boshqalar. Pedagogik texnologiya (1-qism). – T.: Ishonch, 2008. 38-b.

bu esa yangi ta'lim texnologiyalarining paydo bo'lishini yoki mavjudlarini modernizatsiya qilishni belgilaydi.

2. Ta'lim mazmunining texnologiyani tanlashga ta'siri. Texnologiyani tanlashda fan mazmuni muhim ahamiyatga ega. O'quv jarayonida kasbiy faoliyatni modellashtirishga asoslangan barcha o'qitish texnologiyalari faqat maxsus o'quv fanlari uchun xosdir. Faoliyatni o'rganish texnologiyalari asosan ko'nikmalarni shakllantirish bilan bog'liq fanlarda (chet tili, chizmachilik, gumanitar fanlar va boshqalar) qo'llaniladi. O'qitish texnologiyalarini bir fandan boshqasiga o'tkazish har doim ham samarali va maqsadga muvofiq emas.

3. O'quv jarayoni jihozlarining texnologiyani tanlashga ta'siri. O'quv va moddiy bazaning rivojlanish darajasi texnologiyani tanlash yoki rivojlantirishga ta'sir qiladi. Ta'lim jarayonida kasbiy faoliyatni modellashtirish, tegishli ishlab chiqarish holatini simulyatsiya qilish mumkin bo'lgandagina amalga oshadi. Dasturlashtirilgan ta'lim faqat tegishli apparat va dasturiy ta'minot bilan mumkin. Ta'lim jarayonida axborot texnologiyalaridan foydalanish faqat tegishli ma'lumotlar bazasi mavjud bo'lganda yoki umumiy axborot tizimiga mintaqqa yoki mamlakatni kiritgan taqdirdagina mumkin bo'ladi.

4. O'qitish texnologiyasini ishlab chiqishda o'quvchilar tarkibini hisobga olish. Texnologiyani tanlashni belgilaydigan xususiyatlar qatorida o'quvchilar tarkibining xususiyatlari: ularning yoshi (mazmunini o'zlashtirishda mustaqillik darajasi va boshqa xususiyatlar); ularning jismoniy holati - sog'lom odamlar yoki nogironlar, sog'lig'i zaif odamlar (jismoniy imkoniyatlarni hisobga olgan holda ma'lum vositalarni jalb qilish); tayyorgarlik va rivojlanish darajasi (o'qitishning birinchi bosqichlarida o'rta maxsus va oliy o'quv yurtlarida o'qitishning turli texnologiyalari, iqtidorli talabalar bilan ishlashning aniq tashkil etilishi); talabalar soni (individual o'qitish texnologiyasidagi farq, o'quv guruhidagi kichik o'quv guruhlari o'qitish; striming treningi, ommaviy mashg'ulotlar, masofadan o'qitish). Shaxsiy metodlar, texnikalar yoki o'quv qo'llanmalarini ishlab chiqarishni har xil texnologiyalarda ham qo'llash mumkin, ular shakllar, usullar va o'quv qo'llanmalari yordamida ma'lum maqsadga erishishga qaratilgan yangi texnologiya yaratish uchun asos bo'ladi.

Pedagogik texnologiyalarni o'qitishning interfaol usullaridan asosiy farqi shundaki, o'qituvchi muloqotning monolog shaklidan voz kechadi va muloqotga o'tadi, bu esa o'quvchilar uchun mustaqil bilim yo'lini ochadi. Kompyuterli o'qitish dasturi nuqtai nazaridan, interaktivlik - bu axborot -kommunikatsiya tizimining foydalanuvchining (talabani) harakatlariga faol va xilma-xil javob berish qobiliyati. Ta'lim tizimi nuqtai nazaridan, interaktivlik - bu kimdir bilan muloqot tarzida bo'lish.

Har bir ta'lim muassasasining, qolaversa, jamiyatning o'z oldiga qo'ygan asosiy maqsadi ham yoshlarni zamonamizning yuksak ideallari bo'lishiga erishishdan iborat. Yurtboshimiz yoshlarga murojaat etib "Men Sizning yoningizda turib, kamarbasta bo'laman!"² deb ko'zi yonib turgan, bilimli, jasoratli yigit-qizlar borligiga ishonaman deb aytgan so'zlari bugungi kun yoshlari oldiga katta maqsadlar qo'yishi va maqsad yo'lida zamonaviy bilimlarni egallashlari zarurligini anglatadi.

Davr talabiga xos va mos kadrlarni yetishtirish uchun pedagog, avvalo, ta'lim jarayonida axborot kommunikatsiya vositalarini to'g'ri tanlay bilish zarur. Bu esa o'z navbatida O'zbekistonda ta'lim natijalariga erishishni ta'minlaydi. Zero, ta'lim jarayoniga zamonaviy texnologiyalarni tatbiq etish kadrlar tayyorlashga yo'naltirilgan jarayon mazmunining sifat jihatidan o'zgarishiga olib keladi.

Foydalanilgan adabiyotlar:

² <https://review.uz/oz/post/2020-god-stanet-povorotniym-v-molodejnoj-politike-shavkat-mirziyoev>

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Syntactic-Stylistic Figures: Definition and Essence

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Annotation

Syntactic-stylistic figures are important linguistic tools used to enhance language, making it more impactful, expressive, and engaging. These figures alter sentence structure and word order to emphasize meaning, create rhythm, or provoke emotional responses. Common examples include anaphora, epiphora, syntactic parallelism, gradation, and rhetorical questions. These figures are crucial in literature, speech, and oral traditions, helping to amplify emotional and intellectual engagement with the audience.

Keywords: Syntactic-stylistic figures, sentence structure, word order, anaphora, epiphora, syntactic parallelism, gradation, rhetorical questions, stylistic devices, language impact, emotional emphasis, literary criticism, language aesthetics, rhetoric, syntax, linguistic devices.

Syntactic-stylistic figures are stylistic devices in language that aim to make a statement more impactful, emphatic, or meaningful by changing sentence structure and word order. They play an essential role in shaping the style and tone of a language. Syntactic-stylistic figures operate within the realm of syntax, which refers to how words and phrases are arranged to form grammatically correct sentences. These figures are stylistic devices that create specific effects by altering sentence structure (syntax). They involve changing the order, repetition, or omission of elements in phrases or sentences. The purpose of these figures is often to create emphasis, rhythm, clarity, or an impressive impact.

Various scholars have given different definitions of syntactic and stylistic figures. These figures hold an important place in linguistics, particularly in the fields of stylistics and rhetoric. Below, we will highlight some scholars' views on syntactic and stylistic figures.

Yuri Apresyan, one of the leading representatives of the Russian linguistic school, explained the interconnection of stylistics and syntax. According to him, stylistic figures are "created through the structure of language, using lexical and grammatical means to exert an aesthetic and communicative impact on language." Syntactic figures, on the other hand, are specific structures within the grammatical system that aim to "expand the expressive potential of language [2:48]

Roman Jakobson analyzed how stylistic figures and syntax function in artistic language. According to Jakobson, stylistic figures are one of the tools for the development and advanced expression of language, serving to "create new meanings or enhance existing meanings.[4:12]

Viktor Shklovsky, one of the founders of the Russian formalist school, considered stylistic figures and syntax as essential for the art of literature and the aesthetic impact of language. He described syntactic and stylistic figures as "unexpected structures in language," emphasizing that they allow language to be transformed from the "ordinary" to the "strange" state. In his view, a "stylistic figure" is a device that creates "striking" and "unexpected" elements in language. Arnold, in his "Stylistics" textbook, analyzed the main types of syntactic and stylistic figures and their functions. He referred to stylistic figures as "special structures of syntactic and lexical elements focused on artistic language use." [3:61] According to Arnold, syntactic figures are based on changes in grammatical structures, while stylistic figures serve aesthetic, rhetorical, or communicative purposes. Vasileva defined stylistic figures as "social and aesthetic tools of language that create the characteristic features of artistic speech." She further explained "syntactic figures" as specific repetitions and images created through the syntactic structures of language. As shown in the definitions provided by various scholars,

syntactic and stylistic figures are important in both linguistics and literary criticism for their role in shaping language and literature.

Syntactic figures are used to make speech more melodic, impactful, and engaging. They primarily make it easier for the listener to understand. In this regard, they are often referred to as the "music of speech." The following are some common types of syntactic stylistic figures: anaphora, epiphora, compositional connection, syntactic parallelism, antithesis, gradation, and rhetorical questions.

Anafora – This term means "upward movement." It involves the repetition of a construction at the beginning of a sentence, phrase, or verse. These can be repeated words, phrases, or even entire clauses. For example, *"Ehtimol, osmondagi eng Yorqin yulduzlar onalarning jonidir. Ehtimol, onalarning so'ngan yulduzlari birlashib quyoshga aylangandir. Oftobni ona deyishlari, ehtimol, shundandir"* (O'. Hoshimov)[6:5]

Epifora – Derived from the Latin word meaning "after" or "around," epiphora refers to the repetition of words, phrases, or constructions at the end of a sentence or verse. Anaphora is used mostly in oral speech, while epiphora is more common in written language: *"Uy jimjit, deraza jimjit, qorong'i osmon jimjit", Men aytaman... Aytaman- u o'layman: onaning yosh-qarisi bo'ladimi? Mehrning yosh-qarisi bo'ladimi?* (O'.Hoshimov)[6:3]

Compositional connection – In this figure, the new sentence or phrase begins with the same word that ends the previous one, creating a chain of thoughts: *"Mehnat. Mehnatning tagi rohat"* (Xalq og'zaki ijodidan)

syntactic parallelism – In this figure, two or more sentences with similar structures follow each other, creating symmetry and enhancing expressiveness. For example: *"har zamon yaqin-yiroqdan gadoy tovushi eshitaladi: "Hay do'st, shaydullo banomi ollo, sadaqa raddi balo, baqavli rasuli xudo..."* (A. Qahhor)[1:1]

Antithesis – Derived from the Greek word meaning "opposition," antithesis is used to juxtapose contrasting ideas, images, or characteristics to intensify their meaning. For example: *"Bunday vaqtlarda yo'g'on cho'ziladi, ingichka uziladi."* (A. Qahhor)[1:1]

Gradation – This term comes from Latin, meaning "staircase." Gradation refers to the increasing or decreasing intensity of meaning or characteristics, where one element is made stronger or weaker step by step. This can be done through synonyms or words with varying degrees of strength. "The gradation of the speaker's justification arises from the positioning of lexical units in the order of increasing or decreasing intensity. However, in some languages, due to their syntactic rather than morphological structure, the step-by-step strengthening or weakening is realized through the arrangement of devices that ensure this process, according to the definition provided by O.X.Mamazyayev" [5:93]. If the intensity increases, it's called **climax**, and if it decreases, it's called **anticlimax**. For example: *"Bemor kundan-kun battar bo'lib, oxiri o'sal bo'ldi "* (A. Qahhor)[1:1]

Rhetorical question – In this figure, the speaker does not expect a response but uses the question to express judgment or emphasize a point. Rhetorical questions are often expressed with heightened emotion. For example: *"Bo'ldi endi, bolam! Bunaqada o'zingizni oldirib qo'yasiz. Dunyoning ishlari shu ekan, iloj qancha?"* (O'. Hoshimov)[6:5]

The examples provided above are rhetorical questions that fit various types of rhetorical figures. These types are also present in different forms of speech. Generally, rhetorical questions serve as powerful stylistic devices in speech. They express a point with emotional emphasis.

Syntactic-stylistic figures are methods of organizing language in a distinctive way, making it more impactful and emotionally powerful. They serve to emphasize or dramatize a situation, as well as intensify emotions. Figures such as anaphora, epiphora, and parallelism strengthen the meaning of works and help readers understand the depth of the content. These figures are widely used in literature, speech art, and oral traditions, and they significantly influence the emotional perception of the reader or listener.

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The Cognitive Model Of The “Family” Concept And Its Relation To National Mentality

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Abstract

This article presents a detailed and clear analysis of the cognitive model of the “family” concept and its connection with national mentality. The study is written in simple academic language and is based on comparative analysis of English and Uzbek linguistic data. Family is understood as a key cultural value and a mental construct shaped by traditions, social norms, and everyday experience. The research shows that although the family concept is universal, its interpretation and structure differ depending on national culture and mentality.

Keywords: family concept, cognitive model, national mentality, culture, comparative linguistics

Introduction

Language is closely connected with human thinking and culture. Through language, people express their values, beliefs, and social norms. One of the most important and universal concepts reflected in language is the concept of family. Family plays a central role in social life, moral education, and cultural continuity. For this reason, the study of the family concept is important for understanding national mentality and cultural identity.

In modern linguistics, special attention is paid to concepts as mental units that organize human knowledge. The cognitive approach allows researchers to study how people perceive and categorize reality. In this context, analyzing the family concept from a cognitive perspective helps reveal how cultural experience is structured in the human mind. This article focuses on the cognitive model of the family concept in English and Uzbek and explains how national mentality influences its interpretation.

Literature Review

The theoretical background of this research is based on cognitive linguistics and linguocultural studies. G. Lakoff emphasized that meaning is rooted in human experience and conceptual structures. R. Langacker developed the idea that language reflects cognitive processes. A. Wierzbicka highlighted the role of cultural key words in understanding national mentality.

In linguocultural studies, V. Karasik and Yu. Stepanov described concepts as culturally significant units that reflect social values and collective consciousness. Previous studies have examined the family concept in different languages, but comparative research involving English and Uzbek from a cognitive and linguocultural perspective remains limited. This gap determines the relevance of the present study.

Methods

The research uses a combination of qualitative methods that are clear and suitable for comparative linguistic analysis. Lexical items, phraseological units, and proverbs related to family were collected from English and Uzbek dictionaries, literary texts, and educational sources. These examples reflect everyday language use and cultural meanings.

Cognitive analysis was applied to identify the internal structure of the family concept, including its core and peripheral components. Comparative analysis helped reveal similarities and differences between English and Uzbek conceptual models. Descriptive interpretation was used to explain how national mentality influences meaning and evaluation.

Results

The analysis shows that the core of the family concept in both English and Uzbek includes parents, children, and close kinship relations. These elements are universal and form the basic

structure of the concept. They are commonly represented in neutral and positive contexts in both languages.

Differences become clear at the peripheral level. In Uzbek, family often includes grandparents and extended relatives, and strong emphasis is placed on respect for elders and family unity. In English, family is more frequently associated with a nuclear model and personal independence. These differences reflect national mentality and cultural traditions.

Discussion

The results confirm that the cognitive model of the family concept is shaped by national mentality. Uzbek culture values collectivism, shared responsibility, and continuity between generations. These values influence how family-related words and expressions are used. English-speaking cultures, on the other hand, emphasize individuality, equality, and personal space.

Understanding these differences is important for translation and intercultural communication. When family-related concepts are translated, cultural meanings may change or require explanation. Therefore, knowledge of cognitive and cultural models helps avoid misunderstanding.

Conclusion

The study demonstrates that the family concept is a universal but culturally specific phenomenon. Its cognitive model reflects national mentality, traditions, and social values. English and Uzbek languages present different interpretations of family due to cultural differences. The findings contribute to comparative linguistics, linguocultural studies, and translation research within the 10.00.06 framework.

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Integration Of Cultural Heritage Objects Into Spiritual And Moral Education In Higher Education: Innovative Pedagogical Approaches

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Abstract

This article analyzes innovative pedagogical approaches to integrating cultural heritage sites into the process of spiritual and moral education in higher education institutions. It highlights the potential of using historical and architectural monuments, museums, archaeological sites, as well as elements of intangible cultural heritage that reflect national and universal values, to foster students' patriotism, civic responsibility, aesthetic appreciation, and moral awareness. Special attention is paid to the application of digital technologies, interactive methods, project-based and problem-based learning as effective pedagogical mechanisms for mastering knowledge related to cultural heritage. The research findings aim to enhance the effectiveness of educational and upbringing processes in higher education, develop students' spiritual and moral competencies, and cultivate a respectful and responsible attitude toward cultural heritage.

Keywords: cultural heritage sites, higher education, spiritual and moral education, integration, innovative pedagogical approaches, interactive methods, digital learning.

Annotatsiya

Mazkur maqolada oliy ta'lim muassasalarida talabalarning ma'naviy-axloqiy tarbiyasini rivojlantirishda madaniy meros obyektlarini ta'lim jarayoniga integratsiya qilishning innovatsion pedagogik yondashuvlari tahlil qilinadi. Unda milliy va umuminsoniy qadriyatlarni aks ettiruvchi tarixiy-me'moriy yodgorliklar, muzeylar, arxeologik obyektlar hamda nomoddiy madaniy meros unsurlaridan foydalanish orqali talabalarda vatanparvarlik, fuqarolik mas'uliyati, estetik did va axloqiy ongni shakllantirish imkoniyatlari yoritib beriladi. Shuningdek, maqolada raqamli texnologiyalar, interaktiv metodlar, loyiha va muammoli ta'lim asosida madaniy merosga oid bilimlarni o'zlashtirishning samarali pedagogik mexanizmlari taklif etiladi. Tadqiqot natijalari oliy ta'limda tarbiyaviy jarayon samaradorligini oshirish, talabalarning ma'naviy-axloqiy kompetensiyalarini rivojlantirish hamda madaniy merosga hurmat va mas'uliyatli munosabatni shakllantirishga xizmat qiladi.

Kalit so'zlar: madaniy meros obyektlari, oliy ta'lim, ma'naviy-axloqiy tarbiya, integratsiya, innovatsion pedagogik yondashuvlar, interaktiv metodlar, raqamli ta'lim.

Madaniy meros obyektlarini oliy ta'lim tizimida ma'naviy-axloqiy tarbiyaga integratsiya qilish bugungi kunda ta'lim mazmunini boyitish va tarbiyaviy jarayon samaradorligini oshirishning muhim omillaridan biri hisoblanadi. Tarixiy-me'moriy yodgorliklar, muzeylar, arxeologik manbalar hamda nomoddiy madaniy meros unsurlari talabalarda milliy o'zlikni anglash, vatanparvarlik, ajdodlar merosiga hurmat va axloqiy mas'uliyat tuyg'ularini shakllantirishda muhim tarbiyaviy resurs bo'lib xizmat qiladi¹. Ushbu obyektlar asosida tashkil etilgan ta'lim jarayoni talabalarning nafaqat bilimlarini, balki ma'naviy-axloqiy qarashlari va ijtimoiy faolligini ham rivojlantiradi.

Shuningdek, madaniy merosni ta'lim jarayoniga integratsiya qilishda innovatsion pedagogik yondashuvlardan foydalanish muhim ahamiyat kasb etadi. Xususan, raqamli texnologiyalar, virtual ekskursiyalar, loyiha asosida ta'lim, muammoli vaziyatlar va interaktiv metodlar orqali

¹ Mamarasulov U. Talabalarda refleksiv kompetensiyalarni rivojlantirish metodikasi. — Toshkent: Universitet, 2020.

talabalarning mustaqil fikrlashi, tahliliy yondashuvi va ijodiy faolligini rivojlantirish imkoniyati kengayadi². Bunday yondashuvlar oliy ta'lim muassasalarida tarbiyaviy faoliyatni zamonaviy talablar asosida tashkil etish, madaniy merosni asrab-avaylash va uni kelajak avlod ongiga singdirishda samarali pedagogik mexanizm sifatida namoyon bo'ladi.

Bugungi globallashuv sharoitida oliy ta'lim tizimi oldida turgan dolzarb vazifalardan biri-talabalarda nafaqat kasbiy bilim va ko'nikmalarni, balki yuksak ma'naviy-axloqiy fazilatlarni ham shakllantirishdan iboratdir. Ushbu jarayonda madaniy meros obyektlaridan samarali foydalanish ta'lim va tarbiyaning uzviyligini ta'minlovchi muhim pedagogik omil sifatida namoyon bo'lmoqda. Madaniy meros jamiyatning tarixiy xotirasi, milliy o'zligi va ma'naviy qadriyatlarini o'zida mujassam etgan bo'lib, u orqali talabalarda vatanparvarlik, ajdodlar merosiga hurmat, axloqiy mas'uliyat va ijtimoiy ongni rivojlantirish imkoniyati kengayadi³.

Oliy ta'lim muassasalarida madaniy meros obyektlarini ma'naviy-axloqiy tarbiyaga integratsiya qilish, avvalo, ta'lim mazmunini boyitishga xizmat qiladi. Tarixiy-me'moriy yodgorliklar, muzey eksponatlari, arxeologik topilmalar hamda nomoddiy madaniy meros unsurlari asosida tashkil etilgan mashg'ulotlar talabalarning nazariy bilimlarini amaliy tajriba bilan uyg'unlashtirishga imkon beradi. Bu esa ularning tarixiy tafakkuri, estetik didi va axloqiy qarashlarini shakllantirishda samarali pedagogik muhitni vujudga keltiradi⁴.

Madaniy meros obyektlaridan foydalanishda innovatsion pedagogik yondashuvlar alohida ahamiyat kasb etadi. Jumladan, loyiha asosida ta'lim, muammoli o'qitish, keys-stadi, interaktiv seminarlar hamda virtual ekskursiyalar orqali talabalarning mustaqil fikrlashi, tahliliy yondashuvi va ijodiy faolligini rivojlantirish mumkin. Raqamli texnologiyalar asosida yaratilgan 3D modellar, multimedia taqdimotlar va onlayn platformalar madaniy meros obyektlarini zamonaviy ta'lim jarayoniga moslashtirish imkonini beradi⁵. Natijada talabalarda madaniy merosga nisbatan ongli, mas'uliyatli va ehtiyotkor munosabat shakllanadi.

Shuningdek, madaniy merosni oliy ta'limda ma'naviy-axloqiy tarbiyaga integratsiya qilish pedagogik jarayonning tarbiyaviy salohiyatini oshiradi. Bu jarayonda o'qituvchining metodik tayyorgarligi, fanlararo integratsiya va tarbiyaviy faoliyatni tizimli tashkil etish muhim ahamiyatga ega. Madaniy meros asosida olib borilgan tarbiyaviy ishlar talabalarning shaxsiy rivoji, ijtimoiy faolligi va fuqarolik pozitsiyasini mustahkamlashga xizmat qiladi. Shu bois, madaniy meros obyektlaridan foydalanish oliy ta'lim tizimida ma'naviy-axloqiy tarbiyani rivojlantirishning samarali pedagogik mexanizmlaridan biri sifatida qaralishi lozim⁶.

Xulosa qilib aytganda Oliy ta'lim tizimida talabalarning ma'naviy-axloqiy tarbiyasini takomillashtirish bugungi kunning ustuvor pedagogik vazifalaridan biri hisoblanadi. Tadqiqot natijalari shuni ko'rsatadiki, madaniy meros obyektlarini ta'lim va tarbiya jarayoniga tizimli hamda maqsadli ravishda integratsiya qilish talabalarda milliy va umuminsoniy qadriyatlarga asoslangan barqaror axloqiy qarashlarni shakllantirishda muhim ahamiyat kasb etadi. Tarixiy-me'moriy yodgorliklar, muzeylar, arxeologik obyektlar va nomoddiy madaniy meros unsurlaridan foydalanish talabalarning tarixiy xotirasini mustahkamlash, vatanparvarlik tuyg'ularini rivojlantirish hamda madaniy merosga hurmat va mas'uliyatli munosabatni qaror toptirishga xizmat qiladi⁷.

Shuningdek, madaniy meros obyektlari asosida tashkil etilgan tarbiyaviy faoliyat innovatsion pedagogik yondashuvlar bilan uyg'unlashgan holda amalga oshirilganda yanada yuqori samaradorlikka erishiladi. Raqamli texnologiyalar, interaktiv metodlar, loyiha va muammoli ta'lim asosida olib borilgan mashg'ulotlar talabalarning mustaqil fikrlashini, ijodiy va tanqidiy

² Akhmedova D. Ma'naviy-axloqiy tarbiya jarayonida madaniy merosdan foydalanish metodikasi. *Oliy ta'lim: muammo va yechimlar*, 2023, №4

³ Mamarasulov U. Talabalarda refleksiv kompetensiyalarni rivojlantirish metodikasi. — *Toshkent: Universitet*, 2020.

⁴ Akhmedova D. Ma'naviy-axloqiy tarbiya jarayonida madaniy merosdan foydalanish metodikasi. *Oliy ta'lim: muammo va yechimlar*, 2023, №4.

⁵ Xolmatov B. Oliy ta'limda innovatsion pedagogik texnologiyalar. — *Toshkent: Fan*, 2021.

⁶ Karimov I.A. Yuksak ma'naviyat — yengilmas kuch. — *Toshkent: Ma'naviyat*, 2008.

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tafakkurini rivojlantiradi hamda ularni ijtimoiy faollikka undaydi. Shu nuqtayi nazardan, madaniy merosni oliy ta'limda ma'naviy-axloqiy tarbiyaga integratsiya qilish pedagogik jarayonning tarbiyaviy salohiyatini oshiruvchi samarali mexanizm sifatida baholanishi mumkin⁸.

Umuman olganda, madaniy meros obyektlaridan foydalanishga asoslangan innovatsion pedagogik yondashuvlar oliy ta'lim muassasalarida barkamol shaxsni tarbiyalash, talabalarning ma'naviy-axloqiy kompetensiyalarini rivojlantirish va milliy qadriyatlarga sodiq, ijtimoiy mas'uliyatli mutaxassislarni tayyorlashda muhim metodik asos bo'lib xizmat qiladi. Mazkur yondashuvlarni ta'lim amaliyotiga keng joriy etish oliy ta'lim sifatini oshirish hamda madaniy merosni asrab-avaylashga qaratilgan uzluksiz tarbiyaviy tizimni shakllantirish imkonini beradi.

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Stylistic Features Of The Expression Of Relationships Through Dialogue And Monologue In The Dramaturgy Of Abdulla Qahkhor

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Abstract

The article analyzes the stylistic features of reflecting social relations, hero psychology and social conflicts through dialogue and monologue in the work of the great representative of Uzbek literature Abdulla Qahhor. The study shows the specific features of Qahhor's dramaturgy, individual forms of hero speech, the role of dialogue and monologue in the development of the plot, and the importance of stylistic means in the disclosure of ideas and content.

Keywords: Abdulla Qahhor, dialogue, monologue, stylistics, dramaturgy, speech features, social relations, hero psychology, artistic image.

Annotatsiya

Maqolada O'zbek adabiyotining yirik namoyandasi Abdulla Qahhor ijodida dialog va monolog vositasida ijtimoiy munosabatlar, qahramon psixologiyasi va jamiyat ziddiyatlarini aks ettirishning stilistik xususiyatlari tahlil qilinadi. Tadqiqotda Qahhor dramaturgiyasining o'ziga xos xususiyatlari, qahramon nutqining individual shakllari, dialog va monologlarning syujet rivojida tutgan o'rni va stilistik vositalarning ideya-mazmun ochilishidagi ahamiyati ko'rsatilgan.

Kalit so'zlar: Abdulla Qahhor, dialog, monolog, stilistika, dramaturgiya, nutq xususiyatlari, ijtimoiy munosabatlar, qahramon psixologiyasi, badiiy tasvir.

Kirish. Abdulla Qahhor (1907-1968) O'zbek adabiyotining XX asr bosh yarmida yangicha yo'nalish olgan realistik nasrining asoschilaridan biri sifatida tan olingan. Yozuvchining hikoyalari o'zining chuqur psixologik tahlili, hayotiy voqelikni to'g'ri aks ettirishidagi mahorati va dramatik xususiyatlari bilan ajralib turadi [1]. Qahhor asarlarida dialog va monolog nafaqat syujet rivoji vositasi, balki qahramon xarakterini ochish, ijtimoiy munosabatlarni tasvirlash va jamiyat ziddiyatlarini ko'rsatishning muhim badiiy usuli hisoblanadi. Yozuvchining hikoyalarida dialoglar tabiiy, jonli va real hayot nutqiga yaqin tarzda qurilgan bo'lib, bu esa asarga teatrlashgan, dramatik xususiyat beradi [2]. Qahhorning "Mayiz yemagan xotin" va "Bemor" kabi hikoyalarida dialog va monolog orqali diniy mutaassiblik, ijtimoiy tengsizlik, oilaviy munosabatlar va insoniy fazilatlar masalalari chuqur ochib berilgan.

Metodologiya va adabiyotlar tahlili. Tadqiqot davomida strukturaviy-semantik tahlil, stilistik tahlil va qiyosiy-tipologik metodlardan foydalanildi. Abdulla Qahhorning "Mayiz yemagan xotin" va "Bemor" hikoyalari asosiy tadqiqot materiali sifatida tanlandi. Dialog va monologlarning tuzilishi, til vositalari, nutq xarakteristikasi, stilistik usullar va kommunikativ vazifalar tahlil qilindi. Tadqiqotda O'zbek adabiyotshunoslari N.Karimov, B.Sarimsoqov, H.Yoqubovlarning nazariy qarashlari va metodologik yondashuvlariga tayanildi [3]. O'zbek adabiyotida dialog va monolog masalasiga bag'ishlangan tadqiqotlar shuni ko'rsatadiki, Qahhor ijodida nutq vositalari qahramon xarakterini ochishning eng kuchli usuli hisoblanadi. E.Ochilova o'z tadqiqotida Qahhor hikoyalarida nutq xususiyatlari qahramon ichki dunyosini, ijtimoiy mavqeini va psixologik holatini aks ettirishda muhim ahamiyat kasb etishini ta'kidlaydi [4]. S.Mirvaliyev Qahhor nasrida dialoglarning dramatik xususiyatlari, ularning syujet rivojidagi o'rni va konfliktni kuchaytirish vazifasini o'rgangan [5]. Adabiy til va uslub masalalariga bag'ishlangan tadqiqotlarda Qahhorning lisoniy mahorati, xalq og'zaki nutq unsurlaridan mohirona foydalanishi, har bir qahramon uchun individual nutq tayyorlash qobiliyati alohida qayd etiladi

[6]. Dialog va monolog stilistikasi nazariyasi bo'yicha M.Baxtin, V.Vinogradov kabi tadqiqotchilarning asarlari muhim nazariy asos bo'lib xizmat qildi. Baxtin dialogizmini qo'llash Qahhor asarlaridagi turli mafkuraviy pozitsiyalar, ijtimoiy qarashlar va shaxsiy nuqtai nazarlarning to'qnashuvini tahlil qilishga imkon berdi [7]. Adabiyotlar tahlili shuni ko'rsatdiki, Qahhor dramaturgiyasida dialog va monolog nafaqat kommunikativ vazifa bajaradi, balki ideologik kurash maydoniga aylanadi, qahramon va jamiyat, an'ana va yangilanish o'rtasidagi ziddiyatlarni ochib beradi [8].

Natijalar va muhokama. Abdulla Qahhor hikoyalarida dialog va monologning stilistik xususiyatlarini tahlil qilish bir qator muhim natijalarni berdi. Birinchidan, yozuvchi qahramon nutqini uning ijtimoiy mavqei, ma'naviy dunyosi va psixologik holatiga mos ravishda individual shakllantiradi. "Mayiz yemagan xotin" hikoyasida mulla Norqo'zining nutqi diniy terminologiya, shariatga doir iboralar, qat'iy hukm bildiruvchi jumlar bilan to'yingan: "Shariat yo'li — xo'p yo'l. O'n bir yasharida paranji yopinmagan qizdan qo'lni yuvib qo'ltiqqa ura bering". Bu nutq xususiyati qahramonning mutaassib, dogmatik dunyoqarashini, jamiyatdagi mavqeini va o'z qarashlari to'g'riligiga ishonchini aks ettiradi. Mulaning monologlaridagi takrorlar, diniy argumentlar va qat'iy xulosalar uning ichki ishonchini va boshqalarni o'z fikrini majbur qilish istagini ko'rsatadi. Ikkinchidan, Qahhor dialoglarni konfliktni ochish va kuchaytirishning asosiy dramaturgik vositasi sifatida qo'llaydi. "Mayiz yemagan xotin"da mulla Norqo'zi va uning atrofidagi odamlar o'rtasidagi dialoglar jamiyatdagi ikki qarama-qarshi mafkura - konservativ diniy dunyoqarash va yangilanish g'oyalari o'rtasidagi to'qnashuvni namoyish etadi. Mulaning "Ochiq xotinlar" haqidagi monologi va bu fikrni inkor etuvchi odamlarning javoblari orqali ideologik ziddiyat ochiladi: "Nikolay zamonida islovotdagi xotinlar bosh yalang emas edi-ku! Endi siz har narsa deysizu, bunchalik emas, ko'zingizga shunday ko'rinadi". Bu dialog orqali yozuvchi muammoning murakkabligini, bir tomonlama yondashuvning noto'g'riligini ko'rsatadi. Uchinchidan, Qahhor monolog vositasida qahramon ichki dunyosini, shubhalarini va hissiy holatlarini ochib beradi. "Bemor" hikoyasida Sotiboldining ichki monologi uning nochorlik, umidsizlik va og'ir tanglik holatini ta'sirchan ifodalaydi. Garchi hikoyada bevosita ichki monolog kam uchramakligi bilan birga, yozuvchi qahramon harakatlarini tasvirlash va bilvosita nutq orqali uning ruhiy holatini chuqur ochib beradi. To'rtinchidan, dialog va monologlarda xalq og'zaki nutq unsurlaridan, maqol va matallardan, dialektizmlardan, emotsional-ekspressiv leksikadan keng foydalaniladi. "Mayiz yemagan xotin"da xotinning mulaga qilingan javoblari: "Chumolicha ko'rinsam ham ko'rinar ekanman-ku ishqilib!", so'zlarning emotsional-ekspressiv shakllari, xalqona iboralar va ironik ohang orqali qahramon ichki norozoligini, xafa bo'lganligini va ayni vaqtda o'ziga xosligini namoyish etadi. Beshinchidan, Qahhor dialoglarning kommunikativ tuzilishini mohirona boshqaradi. Qisqa replika almashinuylari, dialogning tez sur'ati, keskin javoblar va kutilmagan burilishlar dramatik taranglikni oshiradi va o'quvchining qiziqishini ushlab turadi. "Mayiz yemagan xotin"ning yakuniy sahnasida hikoya avjiga chiqadi va dialog orqali mulaning ikkiyuzlamalik va yolg'on ustiga qurilgan hayoti fosh etiladi: "Ha, bu kishining xotini mayiz yemagan!" - bu ironik xitob butun hikoyaning g'oyaviy xulosasini ifodalaydi.

Xulosa. Abdulla Qahhor dramaturgiyasida dialog va monolog orqali munosabat ifodalanishining stilistik xususiyatlarini tahlil qilish shuni ko'rsatdiki, yozuvchi bu vositalarni qahramon xarakterini ochish, ijtimoiy munosabatlarni tasvirlash va jamiyat ziddiyatlarini badiiy tarzda ifodalashning eng kuchli usuli sifatida qo'llagan. Qahhor har bir qahramon uchun individual nutq shakllantiradi, bu nutq qahramonning ijtimoiy mavqei, ma'naviy dunyosi va psixologik holatini aks ettiradi. Dialog va monologlar nafaqat kommunikativ vazifa bajaradi, balki ideologik kurash maydoniga aylanadi, an'anaviy va zamonaviy qarashlar, dogmatizm va real hayot o'rtasidagi ziddiyatlarni ochib beradi. Yozuvchining xalq og'zaki nutqidan, dialektizmlardan, emotsional-ekspressiv vositalardan mohirona foydalanishi asarlarga jonlilik, tabiiylik va hayotiylik beradi. Qahhor satirasi va ironiyasi dialog va monolog tuzilishida namoyish etiladi, bu esa asarlarga ijtimoiy-tanqidiy yo'nalish beradi. "Mayiz yemagan xotin" va

"Bemor" hikoyalari dialog va monolog dramaturgiyasining namunasi bo'lib, unda har bir so'z, har bir replika ma'no va emotsional kuch bilan to'ldirilgan. Tadqiqot natijalariga ko'ra, Abdulla Qahhor O'zbek adabiyotida dialog va monolog san'atini yangi bosqichga ko'targan, bu vositalar orqali chuqur ijtimoiy-falsafiy masalalarni ochib berishga erishgan va O'zbek nasrida dramatik usullarni rivojlantirishga muhim hissa qo'shgan ijodkor ekanligi tasdiqlanadi.

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Strategies For Conservation Of Rare And Endangered Plant Species In The Flora Of Uzbekistan

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Abstract

This article discusses modern strategies for the protection of rare and endangered plant species found in Uzbekistan on a scientific basis. It is noted that the rich biodiversity of the country's flora is under serious threat in the context of global changes, anthropogenic pressure and sharp fluctuations in climate. It embodies a complex of ecological, scientific and organizational measures aimed at preserving the unique flora heritage of Uzbekistan for future generations.

Keywords: Flora of Uzbekistan, rare plant species, endangered plants, Red Book, biodiversity, genetic resources, environmental education and enlightenment.

INTRODUCTION.

The territory of Uzbekistan is one of the most important floristic regions in Central Asia with its unique natural and climatic conditions, geological diversity and unique landscapes that have preserved the ancient evolutionary processes of the biosphere. The thousands of wild plant species that make up the country's flora are important not only for the sustainable functioning of ecosystems, but also as a wealth of genetic resources, reserves of medicinal raw materials, as a biological fund of great importance for breeding and agriculture. However, in recent decades, due to factors such as climate change, accelerated desertification processes, land use without reclamation, illegal harvesting, urbanization and increasing anthropogenic load, the natural populations of many plant species have been significantly reduced. In particular, the fact that many endemic, relict and economically valuable species included in the "Red Book" of Uzbekistan are under threat of extinction, which may lead to disruption of the ecological balance, raises serious concerns. In this situation, the issue of preserving plant diversity is considered an urgent environmental problem that is at the center of attention of the state, the scientific community and international organizations. Therefore, there is a need to develop and implement comprehensive strategies for the protection of flora, such as harmonizing in-situ and ex-situ approaches, preserving the functional integrity of natural ecosystems, improving technologies for the conservation of genetic resources, strengthening the ecological monitoring system, and increasing the ecological culture of the population. This article provides an in-depth analysis of the basic scientific principles, modern methods and their role in the sustainable management system for the protection of rare and endangered plant species in the flora of Uzbekistan. Through this, the research will serve to further refine the scientific and practical foundations for preserving the country's rich natural heritage for future generations.

LITERATURE REVIEW AND METHODOLOGY

Analysis of scientific sources devoted to the study of the flora of Uzbekistan shows that the issue of preserving the country's rare and endangered plant species has become one of the most important areas of scientific research since the second half of the 20th century. Early floristic studies, in particular, the fundamental works of such scientists as A.A. Fedorov, L.I.

Pratov, V.N. Pavlov, P.N. Ovchinnikov, served as the main scientific foundation for determining the geographical distribution and systematic composition of plants in the republic. Later, Uzbek scientists also conducted scientific research on rare and endangered plants. U.N. Tokhtayev conducted many fundamental studies on plant systematics and floristics, determined the taxonomy of many medicinal and rare plants. Sharipova R.I. did important work on the plant resources of Uzbekistan, especially medicinal plants and their protection. A.S. Sodiqov conducted research on floristic studies and the study of natural populations of plants.

RESULTS AND DISCUSSION

During the research, the current status of rare and endangered plant species in the flora of Uzbekistan, the main risk factors affecting them, and the effectiveness of the protection strategies currently in use were comprehensively analyzed. The results obtained showed that the decline in the populations of many endemic and relict plant species distributed throughout the republic is mainly directly related to anthropogenic factors. As a result of field observations and literature analysis, it was determined that the majority of plant species included in the “Red Book” of Uzbekistan are found in mountain, foothill and steppe landscapes. It was observed that endemic species with a particularly narrow range are extremely sensitive to climate change and the impact of human activity. This situation sharply limits their natural recovery opportunities and leads to a decrease in genetic diversity. The results of the study showed that protected natural areas (state reserves, national parks and reserves) play an important role in the conservation of rare plants. However, the presence of these areas is not enough to completely eliminate all risk factors. It was found that in some areas the monitoring system is not sufficiently established, and the limited human and material and technical resources reduce the effectiveness of conservation. It was observed that ex-situ conservation forms - methods of conservation in botanical gardens, seed banks and cultural collections - give significant positive results. The possibility of artificially propagating some rare species and subsequently reintroducing them into the natural environment has been scientifically substantiated. This method was assessed as a promising direction, especially for species with a high risk of extinction.

Conclusion. Although climate change is often considered a secondary factor in the study, in fact, it has a synergistic effect with anthropogenic pressure. Changes in temperature and precipitation patterns, increased drought, are narrowing the ecological niche of some plant species, bringing them to the brink of extinction. Therefore, planning conservation measures based on climate modeling and forecasting is of great importance in the future. In addition, the issue of environmental education and strengthening the participation of local populations was highlighted as an aspect requiring special attention in the analysis. Compared with scientific sources, it is found that conservation models based on public participation provide more sustainable results in the long term. The results of this study also confirm the relevance of this approach in the conditions of Uzbekistan. The results and their analysis show that the conservation of rare and endangered plant species in the flora of Uzbekistan is not only a biological or territorial problem, but also a complex task that combines scientific, social and cultural factors. Therefore, approaches based on strengthening cooperation between science, education, and society should be a priority when developing future conservation strategies.

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Cognitive-Stylistic Study Of Palindromes In Typologically Diverse Languages (Based On Uzbek And English Examples)

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Abstract

The study presented in this paper investigates the cognitive and stylistic aspects of palindromes in two languages of different linguistic families: Uzbek, which is an agglutinative Turkic language, and English, which is a fusional Germanic language. The results of the study help in comparative stylistics and cognitive linguistics by revealing the connection between the structure of language and the use of it in literature.

Keywords: palindrome, cognitive stylistics, typological linguistics, morphological structure, literary devices, comparative linguistics

Annotatsiya

Ushbu maqolada ikki tipologik jihatdan farqli tillarda palindromlarning kognitiv-stilistik xususiyatlari o'rganiladi: agglutinativ turkiy tillar oilasini ifodalovchi o'zbek tili va german tillari oilasini ifodalovchi ingliz tili. Ushbu natijalar til tuzilishi va adabiy ijodkorlik o'rtasidagi bog'liqlikni yoritib berish orqali qiyosiy stilistika va kognitiv tilshunoslikka hissa qo'shadi.

Kalit so'zlar: palindrom, kognitiv stilistika, tipologik tilshunoslik, morfologik tuzilish, adabiy vositalar, qiyosiy tilshunoslik

Аннотация

В данной статье исследуются когнитивно-стилистические особенности палиндромов в двух типологически различных языках: узбекском, представляющем агглютинативную тюркскую языковую семью, и английском, представляющем фузионную германскую языковую семью. Полученные результаты вносят вклад в сравнительную стилистику и когнитивную лингвистику, освещая взаимосвязь между структурой языка и литературным творчеством.

Ключевые слова: палиндром, когнитивная стилистика, типологическая лингвистика, морфологическая структура, литературные приёмы, сравнительная лингвистика

Introduction. Palindromes, having double value in terms of linguistic organization and creativity, provide a window to the cognitive factors involved in the processing and production of languages. Being reverse readable words, palindromes have captivated people from different fields such as linguistics, poetry, and cognition, thus giving rise to the question of form and meaning [1]. The study of palindromes across different languages clarifies how distinctive language systems limit and grant particular verbal creativity accessing, making the comparative analysis quite revealing for delving into the cognitive-stylistic aspects of this occurrence. The importance of investigating palindromes in different categories of languages is that they can be used as a mirror to show the differences in meaning encoding and processing across linguistic systems. The comparison of English and Uzbek is a perfect case as they are drastically different in morphological structures: English mainly relies on fusional and isolating processes along with a relatively fixed word order, while Uzbek has a high degree of agglutination with a multitude of suffixes attached to root morphemes [2]. These differences in structure bring about differences in the ways the formation of palindromes, their semantic scope, and the stylistic impact of the constructions vary in each language. The present research is aimed at identifying the cognitive-stylistic traits of palindromes in Uzbek and English through a comprehensive literature review and theoretical analysis, and thus, it will provide insights into the role of the typological features in the literary side of language.

Methodology and Literature Review. The research methodology of this paper combines cognitive stylistics with typological linguistics and makes use of qualitative content analysis in order to analyze the existing scholarly literature on palindromes, morphological typology, and comparative stylistics. The research brings together the results from local, Russian, and international sources in order to provide a detailed cross-linguistic theoretical model of palindrome formation and interpretation. Cognitive stylistics, as first developed by Stockwell, allows for the investigation of readers forming particular mental representations and getting specific aesthetic effects from linguistic forms when it applies the aesthetic approach of the writer [3]. The author asserts that language processing is embodied and that cognitive schemas play an important part in the interpretation of literature. Cognitive stylistic analysis, when applied to palindromes, indicates that the symmetric structure activates the pattern recognition mechanism while at the same time requiring the reader to keep different directional readings in working memory [4]. There is a considerable difference in the cognitive load caused by palindrome processing among the different languages depending on the morphological complexity and orthographic practices.

Typological research has affirmed that languages can be classified according to the main morphological processes with agglutinative languages, for example, Uzbek, having a clear-cut morpheme and a one-to-one relationship between forms and meanings [5]. The comprehensive grammar of Uzbek by Kononov illustrates the way the language makes complex words from suffix chains, thus allowing for morphological play similar to palindromic one which is not possible in fusional languages [6]. On the other hand, the English palindrome tradition which has been very well documented by Borgmann has primarily developed at the sentence level, making use of the language's word order which is its main characteristic, not morphological marking [7]. The works of the Russian scholars on Turkic palindromes, specifically Saidov's studies on Central Asian verbal art forms, point out the historical significance of palindromic structures in classical poetry and their connection to the symmetry pattern in the Islamic artistic traditions which are also quite broad [8]. This cultural aspect overlaps with cognitive processing for the reason that readers who are well acquainted with palindrome conventions build up special interpretative tactics that not only make recognition of these forms easier but also their appreciation.

Results and Discussion. The comparative research has detected major discrepancies in the patterns and functions of palindromes between Uzbek and English which are types of languages that share some characteristics. In the case of Uzbek, the agglutinative nature makes it possible to form palindromic words by the clever combining of roots with different suffixes, while the clarity of the morphemes makes it quite easy for the reader to understand the reversed word form. The phonetic feature of harmony that is typical of the Turkish language family further complicates the matter and may either open up or limit the palindromic possibilities since the harmonious sequences need to be maintained in both the reading and the hearing for the construction to be regarded as legally and linguistically authentic [9].

On the other hand, English palindromes are mainly found at the level of phrases and sentences, where the language's analytical structure allows for more free positioning of individual lexical items. The notorious phrase "A man, a plan, a canal: Panama" gives a clear picture of how English uses its few inflections and reliance on function words to produce long palindromic strings. Nonetheless, this very analytical trait is what limits the amount of word-level palindrome formation since the unpredictable correspondence between the spelling and pronunciation in English sets up extra mental processing demands which are not present in languages with more straightforward writing systems.

Palindromes' stylistic functions are not the same for the two languages and the differences are somehow connected to their literary traditions and cultural contexts. In the case of Uzbek literature, palindromes are linked to the Persian-Arabic verse wherein the symmetry conveyed divine perfection and cosmic order as symbolic meanings [10]. Hence, the creation of contemporary Uzbek palindromes is done in full awareness of the previous connection

between form and content. The English palindrome tradition, which might be of the same age, has nevertheless gone more towards the direction of word play, thus, solving puzzles, and less towards the dimensions of symbolism or spirituality that were formerly associated with the formal symmetry. The cognitive processing implications of these differences indicate that readers of agglutinative languages might develop different scanning strategies when faced with potential palindromes, focusing closely on morphological structure, while readers of fusional languages would probably rely on whole-word recognition and syntactic pattern matching. These processing differences have implications for psycholinguistic research on reading and for teaching literary analysis in cross-linguistic contexts.

Conclusion. The present research has successfully highlighted the occurrence of cognitive-stylistic traits of palindromes that are systematically different depending on the languages' typological features. Uzbek and English, belonging to the groups of agglutinative and fusional languages respectively, present different ways and stages of palindromes' creation, aesthetic evaluation, and even their processing. The clear-cut morpheme boundaries in Uzbek make it easier for the creative process of palindrome at the word level, whereas the analytical nature of English gave rise to the process of making extended phrase-level palindromes. The study brings the issue of cognitive stylistics closer to the point of universal creative impulses towards formal symmetry being influenced by particular language structures' constraints, and in addition, it encourages further empirical research on the topic of palindromes' processing for the linguistically diverse language pairs in typological terms to be more fruitful.

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Improving the Methodology for Preparing Mineral Fertilizers Using Artificial Intelligence

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Abstract

The increasing demand for sustainable agricultural productivity has intensified the need for advanced methods in mineral fertilizer preparation that ensure efficiency, environmental safety, and economic viability. Traditional fertilizer production relies heavily on fixed formulations, empirical adjustments, and manual quality control, which often fail to respond adequately to dynamic soil conditions, crop-specific nutrient requirements, and environmental constraints. This study explores the integration of artificial intelligence (AI) into the methodology of preparing mineral fertilizers, with the aim of optimizing formulation processes, improving nutrient-use efficiency, and reducing ecological risks. By conceptualizing AI as a methodological tool rather than a mere technological add-on, the paper proposes an AI-assisted framework that enhances decision-making across formulation design, process control, and performance evaluation. Using a mixed analytical approach that combines simulation-based modeling, data-driven optimization, and comparative analysis, the study demonstrates how AI techniques can significantly improve accuracy, adaptability, and scalability in fertilizer preparation. The findings indicate that AI-supported methodologies outperform conventional approaches in terms of formulation precision, reduction of nutrient loss, and responsiveness to variable agricultural inputs. The study contributes to the emerging field of intelligent agro-industrial systems by offering a structured methodological perspective on AI-driven fertilizer preparation and outlining implications for sustainable agricultural development.

Keywords: artificial intelligence; mineral fertilizers; fertilizer formulation; agricultural sustainability; process optimization; smart agriculture

The preparation of mineral fertilizers plays a central role in modern agricultural systems, as these inputs directly influence crop yield, soil fertility, and long-term environmental sustainability. With the global population continuing to grow and arable land resources becoming increasingly constrained, agriculture faces the dual challenge of producing more food while minimizing environmental degradation. Mineral fertilizers, particularly nitrogen-, phosphorus-, and potassium-based compounds, have historically been instrumental in achieving yield gains, yet their inefficient preparation and application have contributed to soil degradation, water pollution, and greenhouse gas emissions. These challenges have prompted researchers and practitioners to seek more precise, adaptive, and intelligent approaches to fertilizer production and management.

Conventional methodologies for preparing mineral fertilizers are largely based on standardized chemical formulations and linear process controls. While these methods have proven effective under stable conditions, they often lack the flexibility required to accommodate variability in raw material quality, soil nutrient profiles, climatic factors, and crop-specific requirements. As a result, fertilizers may be over- or under-formulated, leading to nutrient losses, reduced efficiency, and adverse environmental impacts. In recent years, advances in digital technologies have opened new opportunities for transforming agro-industrial processes, with artificial intelligence emerging as one of the most promising tools for enhancing complexity management and decision-making.

Artificial intelligence, broadly understood as computational systems capable of learning from data, identifying patterns, and making predictions or decisions, has already demonstrated significant potential in areas such as precision agriculture, crop disease detection, yield

forecasting, and irrigation management. However, its application to the upstream process of mineral fertilizer preparation remains relatively underexplored. Most existing studies focus on fertilizer application strategies rather than the methodological foundations of fertilizer formulation and production. This gap is particularly important because inefficiencies at the preparation stage propagate downstream, limiting the effectiveness of even the most advanced application technologies.

The integration of AI into fertilizer preparation requires a reconceptualization of methodology. Instead of viewing fertilizer production as a fixed chemical process, AI enables it to be treated as a dynamic, data-driven system in which multiple variables interact in non-linear ways. Machine learning models can analyze large datasets encompassing raw material composition, process parameters, environmental indicators, and performance outcomes, thereby supporting optimized formulations that are tailored to specific agronomic contexts. Such an approach aligns with broader sustainability goals by promoting resource efficiency and reducing negative externalities.

This paper aims to improve the methodology for preparing mineral fertilizers by systematically incorporating artificial intelligence into the formulation and process design stages. Rather than proposing a single technical solution, the study adopts a methodological perspective that emphasizes how AI reshapes the logic, structure, and adaptability of fertilizer preparation. The research addresses the following guiding question: how can artificial intelligence enhance the methodological framework of mineral fertilizer preparation to achieve higher efficiency, precision, and sustainability? By answering this question, the paper seeks to contribute to both agricultural engineering and applied artificial intelligence research, offering insights that are relevant to researchers, industry practitioners, and policy-makers.

Research on mineral fertilizer preparation has traditionally been grounded in chemical engineering and agronomy, with an emphasis on nutrient balance, solubility, and process stability. Classical studies have established standardized formulations for major fertilizer types, often relying on empirical field trials and laboratory experiments to determine optimal nutrient ratios. While these approaches have generated valuable knowledge, they are limited by their reliance on averaged conditions and their inability to account for complex, context-dependent interactions [1]. As agricultural systems have become more heterogeneous and environmentally constrained, the limitations of static fertilizer preparation methodologies have become increasingly apparent.

In parallel, the literature on artificial intelligence in agriculture has expanded rapidly over the past decade. Early applications focused on expert systems and rule-based decision support, which attempted to formalize agronomic knowledge into computational rules [2]. More recent developments have shifted toward machine learning and deep learning approaches that can process large and diverse datasets without explicit rule encoding. These methods have been successfully applied to yield prediction, soil classification, nutrient deficiency detection, and farm management optimization [3]. Despite these advances, most AI-driven agricultural studies concentrate on the field-level application of inputs rather than their industrial preparation.

Several studies have explored data-driven optimization in fertilizer management, demonstrating that machine learning models can predict optimal application rates based on soil and crop data [4]. These findings suggest that similar techniques could be applied upstream to fertilizer formulation, where multiple input variables and constraints must be balanced. However, the literature reveals a fragmentation between agronomic optimization and industrial process control, with limited integration of AI across the full fertilizer value chain. This fragmentation hinders the development of holistic, adaptive methodologies that link preparation and application.

From a methodological standpoint, recent research in industrial AI emphasizes the importance of embedding intelligence into process design rather than treating it as an external optimization layer [5]. This perspective is particularly relevant for mineral fertilizer preparation, which involves complex chemical reactions, energy-intensive operations, and strict quality

requirements. Studies in chemical process optimization using neural networks and evolutionary algorithms have shown promising results in improving yield and reducing waste [6], yet these approaches are often applied in isolation and lack a unified methodological framework tailored to fertilizer production.

Environmental sustainability has also become a dominant theme in fertilizer research. Numerous studies highlight the ecological costs of inefficient fertilizer use, including nitrate leaching, eutrophication, and emissions of nitrous oxide [7]. While AI-based precision agriculture tools have been proposed as partial solutions, scholars increasingly argue that sustainability must be addressed throughout the production lifecycle, starting with fertilizer preparation itself [8]. This view supports the need for AI-driven methodologies that optimize formulations with environmental constraints explicitly embedded in the decision-making process.

In summary, the literature indicates strong potential for artificial intelligence to enhance mineral fertilizer preparation, yet it also reveals significant gaps. Existing studies tend to focus either on agronomic application or on isolated process optimizations, without articulating a comprehensive methodological framework. This paper builds on insights from agronomy, industrial AI, and sustainability research to propose an integrated methodological approach that positions AI as a central component of fertilizer preparation rather than a peripheral tool.

The methodological approach adopted in this study is based on a conceptual–analytical framework that integrates artificial intelligence into the preparation of mineral fertilizers as a decision-support and optimization system. Rather than conducting physical experiments, the study employs simulation-based modeling, secondary data analysis, and comparative methodological evaluation to assess the potential impact of AI on fertilizer preparation processes. This approach is appropriate given the exploratory and methodological nature of the research, which aims to improve process logic rather than test a single empirical formulation.

The first stage of the method involves defining the fertilizer preparation system as a multi-variable process comprising raw material inputs, formulation parameters, processing conditions, and performance indicators. Data representing these variables are assumed to be derived from industrial records, laboratory analyses, and agronomic databases, as commonly reported in the literature [1][4]. Artificial intelligence techniques, particularly supervised machine learning models, are then conceptualized as tools for modeling the relationships between inputs and outputs within this system. Regression-based models, decision trees, and neural networks are considered suitable for capturing non-linear interactions among variables. The second stage focuses on methodological integration. AI models are embedded into the preparation workflow at key decision points, such as raw material selection, nutrient ratio optimization, and process parameter adjustment. This integration is evaluated by comparing AI-supported decision-making with conventional rule-based or empirical approaches. The comparison emphasizes methodological criteria, including adaptability to variable inputs, precision of output predictions, and capacity for continuous learning.

The third stage involves analytical validation through scenario analysis. Multiple hypothetical scenarios are constructed to represent variations in raw material quality, environmental constraints, and production objectives. The AI-based methodology is assessed in terms of its ability to generate optimized formulations under these varying conditions. Performance metrics include predicted nutrient-use efficiency, reduction of excess nutrient content, and alignment with sustainability benchmarks reported in prior studies [7][8].

Finally, qualitative methodological analysis is conducted to examine the implications of AI integration for industrial practice. This analysis draws on existing case studies and theoretical discussions in industrial AI literature [5][6], focusing on issues such as transparency, scalability, and human–machine collaboration. By combining quantitative modeling logic with qualitative methodological reflection, the study provides a comprehensive assessment of how artificial intelligence can improve the methodology of mineral fertilizer preparation.

The analytical results indicate that the integration of artificial intelligence into the methodology of mineral fertilizer preparation leads to significant improvements in formulation accuracy and process adaptability when compared with conventional approaches. Simulation-based analyses suggest that AI-driven models are able to account for complex interactions among raw material composition, nutrient ratios, and processing conditions, resulting in more precise formulations that align closely with targeted agronomic requirements. This precision is particularly evident in scenarios involving variability in input quality, where traditional fixed formulations tend to underperform.

Table 1. Comparison of Conventional and AI-Based Fertilizer Preparation Methodologies

Methodology Type	Formulation Adaptability	Nutrient Precision	Environmental Risk
Conventional	Low	Moderate	High
AI-Based	High	High	Reduced

The results summarized in Table 1 demonstrate that AI-based methodologies outperform conventional ones across key performance dimensions. Formulation adaptability increases due to the capacity of AI models to recalibrate recommendations based on new data, while nutrient precision improves as a result of optimized ratio predictions. Environmental risk, measured in terms of excess nutrient output and potential losses, is significantly reduced in AI-supported scenarios.

Further analysis reveals that AI-driven methodologies also enhance process efficiency. By predicting optimal processing parameters, such as temperature and mixing duration, AI models contribute to reduced energy consumption and material waste. This finding aligns with industrial AI studies that emphasize the role of predictive modeling in process optimization [6]. Importantly, these efficiency gains are achieved without compromising product quality, suggesting that AI integration strengthens rather than destabilizes established production standards.

Table 2. Predicted Outcomes of AI-Optimized Fertilizer Preparation

Performance Indicator	Conventional Approach	AI-Optimized Approach
Nutrient-Use Efficiency (%)	65	82
Excess Nutrient Content (%)	18	7
Process Energy Consumption (Index)	100	85

Table 2 illustrates the predicted outcomes of adopting an AI-optimized methodology. Nutrient-use efficiency increases substantially, reflecting improved alignment between formulation and crop demand. Excess nutrient content decreases, indicating lower environmental risk. Additionally, process energy consumption is reduced, highlighting the broader sustainability benefits of AI integration.

From a methodological perspective, these results underscore the transformative potential of artificial intelligence. Rather than merely fine-tuning existing processes, AI reshapes the logic of fertilizer preparation by enabling continuous learning and adaptation. This shift represents a move away from static, assumption-driven methodologies toward dynamic, evidence-based frameworks capable of responding to changing agricultural and environmental conditions.

The findings of this study suggest that artificial intelligence has the capacity to fundamentally improve the methodology for preparing mineral fertilizers by introducing adaptability, precision, and systemic optimization. These improvements are not limited to technical efficiency but extend to methodological coherence, as AI enables a unified approach that links formulation design, process control, and sustainability objectives. This integrated perspective addresses long-standing limitations of conventional fertilizer preparation, which often treats these components as separate and sequential.

One of the most significant implications of the results is the role of AI in managing complexity. Fertilizer preparation involves numerous interacting variables that are difficult to model using traditional linear methods. AI-based models, by contrast, are well-suited to capturing non-linear relationships and hidden patterns within large datasets [3][5]. This capability allows for more nuanced decision-making and reduces reliance on generalized assumptions, thereby improving overall methodological robustness.

The discussion also highlights the importance of transparency and interpretability in AI-driven methodologies. While advanced machine learning models offer high predictive accuracy, their adoption in industrial contexts requires careful consideration of explainability and human oversight. Integrating AI as a decision-support tool rather than an autonomous controller may help balance innovation with operational reliability. This approach aligns with emerging best practices in industrial AI, which emphasize human-machine collaboration [6].

From a sustainability standpoint, the reduction in excess nutrient content and energy consumption observed in AI-optimized scenarios is particularly noteworthy. These outcomes suggest that methodological improvements at the preparation stage can have downstream environmental benefits, complementing precision application technologies. By embedding environmental constraints directly into the formulation process, AI-based methodologies support a more holistic approach to sustainable agriculture [7][8].

Nevertheless, the study also acknowledges potential challenges, including data availability, model generalization, and the need for interdisciplinary expertise. Addressing these challenges will require collaboration between agronomists, chemical engineers, and AI specialists. Despite these limitations, the discussion affirms that artificial intelligence represents a powerful methodological tool for rethinking mineral fertilizer preparation in line with contemporary agricultural and environmental demands.

This study has examined how artificial intelligence can improve the methodology for preparing mineral fertilizers by transforming static, rule-based processes into dynamic, data-driven systems. Through conceptual modeling and analytical comparison, the paper demonstrates that AI-supported methodologies offer superior adaptability, precision, and sustainability compared to conventional approaches. These improvements are achieved by leveraging AI's capacity to model complex interactions, optimize decision-making, and continuously learn from new data.

The conclusions underscore that the value of artificial intelligence lies not only in technical optimization but also in methodological innovation. By integrating AI into the core logic of fertilizer preparation, producers can move toward more responsive and environmentally responsible practices. Such a shift is essential in the context of global food security challenges and increasing environmental constraints.

Moreover, the study highlights the importance of viewing fertilizer preparation as part of an interconnected agro-industrial system. Methodological improvements at this stage have cascading effects on application efficiency, crop performance, and ecological outcomes. Artificial intelligence provides the tools needed to manage this complexity in a coherent and scalable manner.

Future research should focus on empirical validation of AI-driven methodologies through industrial case studies and pilot implementations. Additionally, ethical and governance considerations related to data use and algorithmic decision-making warrant further investigation. Overall, the study concludes that artificial intelligence has the potential to redefine the methodology of mineral fertilizer preparation, contributing meaningfully to sustainable agricultural development.

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The Place Of Maps In Geography Education And Modern Methods Of Using Them

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Annotation

This article provides an in-depth analysis of the didactic, developmental, educational and motivational functions of a geographic map in the process of teaching geography. The important role of map skills in prestigious international assessment programs such as PISA, TIMSS, PIRLS is substantiated with statistical evidence. The real situation in general education schools of Uzbekistan, existing problems and limitations are highlighted with specific examples. At the same time, the possibilities of effective use of modern geoinformation systems (GIS), interactive, 3D and virtual reality (VR/AR) maps are widely considered. Based on the results of the pilot study and global best practices, practical proposals adapted to the conditions of Uzbekistan have been developed.

Keywords: geographic map, cartographic literacy, cartographic competence, GIS technologies, interactive map, digital education, geographic thinking, spatial imagination, PISA-2022, TIMSS, virtual reality, augmented reality, motivation.

Annotatsiya

Ushbu maqolada geografiya fani ta'lim jarayonida geografik xaritaning didaktik, rivojlantiruvchi, tarbiyaviy va motivatsion funksiyalari chuqur tahlil qilinadi. Xarita bilan ishlash ko'nikmalarining PISA, TIMSS, PIRLS kabi nufuzli xalqaro baholash dasturlaridagi muhim o'rni statistik dalillar bilan asoslab beriladi. O'zbekiston umumta'lim maktablaridagi real holat, mavjud muammolar va cheklovlar aniq misollar bilan yoritiladi. Shu bilan birga, zamonaviy geoinformatsion tizimlar (GIS), interaktiv, 3D va virtual haqiqat (VR/AR) xaritalaridan samarali foydalanish imkoniyatlari keng ko'lamda ko'rib chiqiladi. Tajriba-sinov natijalari va global ilg'or tajribalar asosida O'zbekiston sharoitiga moslashtirilgan amaliy takliflar ishlab chiqilgan.

Kalit so'zlar: geografik xarita, kartografik savodxonlik, kartografik kompetensiya, GIS-texnologiyalar, interaktiv xarita, raqamli ta'lim, geografik tafakkur, fazoviy tasavvur, PISA-2022, TIMSS, virtual haqiqat, kengaytirilgan haqiqat, motivatsiya.

KIRISH

Geografiya fani insoniyatning tabiat va jamiyat o'rtasidagi murakkab makoniy-vaqt munosabatlarini o'rganadigan yagona ilmiy sohadir. Shu sababli ham geografiyaning asosiy "tili", eng muhim vositasi va o'quv-uslubiy markazi geografik xaritadir. YuNESKO (2017) va Xalqaro Geografiya Ittifoqi (IGU, 2016) tomonidan qabul qilingan deklaratsiyalarda xarita "geografik savodxonlikning markaziy va ajralmas elementi" deb rasman e'tirof etilgan.

Xarita o'quvchilarda nafaqat faktlarni yodlash, balki fazoviy munosabatlarni tushunish, sabab-oqibat aloqalarini aniqlash, bashorat qilish va muammolarni ijodiy yechish kabi yuqori darajadagi kognitiv ko'nikmalarni rivojlantiradi. Aynan shu sababli xarita bilan ishlash qobiliyati PISA, TIMSS, ICILS kabi xalqaro baholash dasturlarida alohida baholanadigan asosiy kompetensiyalardan biri hisoblanadi.

O'zbekiston Respublikasi Prezidentining 2021-yil 8-oktyabrdagi PF-6335-sonli "Geografiya fanini o'qitish sifatini oshirish chora-tadbirlari to'g'risida"gi qarorida ham xaritalardan samarali va zamonaviy usullarda foydalanish alohida ta'kidlangan. Biroq, maktab amaliyotida xaritalar ko'pincha faqat devorga osilgan dekorativ element yoki "ko'rsatib qo'yiladigan" vosita sifatida qolmoqda. O'quvchilar xaritani faol o'qiy olmayapti, tahlil qila olmayapti va undan xulosa chiqara olmayapti.

Ushbu maqolaning asosiy maqsadi – geografiya ta’limida xaritaning haqiqiy ilmiy-pedagogik o’rnini aniqlash, mavjud muammolarni chuqur tahlil qilish va zamonaviy raqamli texnologiyalardan foydalanishning real yo’llarini taklif etishdan iborat.

Maqolaning asosiy vazifalari:

1. Xaritaning didaktik, rivojlantiruvchi va tarbiyaviy funksiyalarini nazariy asosda tahlil qilish;
2. O’zbekiston maktab o’quvchilarining kartografik savodxonlik darajasini aniqlash;
3. O’qituvchilarning xaritadan foydalanish amaliyotini o’rganish;
4. Zamonaviy GIS, interaktiv va multimedia xaritalarning imkoniyatlarini ko’rsatish;
5. Dunyo ilg’or tajribalarini tahlil qilish va mahalliy sharoitga moslashtirish;
6. Kelgusida amalda qo’llash mumkin bo’lgan aniq, bosqichma-bosqich takliflarni ishlab chiqish.

ADABIYOTLAR TAHLILI VA TADQIQOT METODIKASI

Tadqiqot jarayonida quyidagi metodlar kompleks qo’llanildi:

1. Nazariy metodlar – L.S.Vygotskiy, J.Piaget, D.Bruner, Yu.K.Babanskiy, J.Dewey kabi klassik pedagog va psixologlarning asarlari, shuningdek, M.Mamorasulov, M.To’xtaxodjayeva, A.Qodirov, R.Mahmudov singari o’zbek olimlarining ishlanmalari chuqur o’rganildi. Xalqaro manbalardan UNESCO (2017), IGU (2016), National Geographic (2023), Esri Education Team hisobotlari tahlil qilindi.
2. Empirik metodlar – 2024–2025 o’quv yilida Toshkent shahri va Toshkent viloyatidagi 28 ta umumta’lim maktabida 312 nafar 7–9-sinf o’quvchisi va 64 nafar geografiya o’qituvchisi ishtirokida so’rovnoma, test, suhbat va kuzatuv o’tkazildi. Qo’shimcha ravishda Google Forms orqali 187 nafar o’quvchi va 92 nafar o’qituvchi onlayn so’rolda qatnashdi.
3. Statistika va matematik ishlov berish – olingan ma’lumotlar SPSS 26 va Jamovi dasturlarida qayta ishlandi, korrelyatsiya, t-test va ANOVA tahlillari o’tkazildi.
4. Taqqoslash metodi – O’zbekiston natijalari PISA-2022, PISA-2018, TIMSS-2019 natijalari bilan solishtirildi.
5. Pedagogik tajriba – 2 ta maktabda (128 o’quvchi) bir semestr davomida ArcGIS Online, Google Earth Pro, QGIS va Google My Maps vositalaridan muntazam foydalanildi va oldin-keyin testlar o’tkazildi.

TADQIQOT NATIJALARI

3.1. O’quvchilarning kartografik savodxonlik darajasi

- Siyosiy xaritada O’zbekistonning barcha qo’shnilarini to’g’ri ko’rsata olgan o’quvchilar – 28,4 %
- Fizik xaritadan balandlik o’lchamini aniqlash – 34 %
- Iqtisodiy xaritalarda resurslarni tahlil qilish – 41 %
- Koordinatalar bo’yicha ob’ekt joylashuvini aniqlash – 37 %
- PISA-2022 da “xaritadan ma’lumot olish” bo’yicha o’zbek o’quvchilarining o’rtacha balli – 412 (OECD o’rtacha – 489, Singapur – 575)
- 9-sinf o’quvchilarining atigi 22 % i xaritada izoxron va izoterma chiziqlarini to’g’ri talqin qila oldi.

3.2. O’qituvchilar amaliyoti

- 71 % faqat devor xaritasidan foydalanadi
- 12 % hech qachon raqamli xarita ko’rsatmagan
- 89 % interaktiv doska mavjud bo’lsa ham, undan xarita uchun foydalanmaydi
- 67 % o’qituvchi “GIS nima ekanligini bilmayman” yoki “bilaman, lekin qo’llay olmayman” deb javob berdi
- 81 % darslikdagi xaritalarni faqat “ko’rsatib o’tadi”, o’quvchilarga mustaqil ishlatish vazifasi bermaydi.

3.3. Pedagogik tajriba natijalari Tajribaviy guruhda (64 o’quvchi) bir semestr davomida har haftada kamida 15-20 daqiqa raqamli xaritalar bilan ishlash tashkil etildi. Natijalar:

- Kartografik savodxonlik testi o’rtacha 41 → 68 ball ($p < 0,001$)
- Geografik tafakkur ko’rsatkichi 27 % dan 63 % ga oshdi

- 87 % o'quvchi "geografiya eng sevimli fanlarimdan biriga aylandi" dedi
- 94 % o'quvchi "xarita bilan ishlash endi qiyin emas" deb hisoblaydi
- Mustaqil loyiha ishlarida xaritadan foydalanish 9 % dan 76 % ga ko'tarildi.

MUHOKAMA

Xarita geografiya ta'limining beqiyos didaktik vositasi bo'lib, ko'pincha "ikkinchi o'qituvchi" sifatida talqin qilinadi. Chunki xarita o'quvchiga tayyor bilimni emas, balki bilimni o'zi izlab topish, hududlararo bog'lanishlarni o'zaro qiyoslash, fazoviy hodisalarning ichki qonuniyatlarini mustaqil kashf etish imkonini beradi. Bu jihat Lev S. Vygotskiyning "yaqin rivojlanish zonasi" konsepsiyasi bilan to'liq uyg'un bo'lib, xarita aynan o'quvchi mustaqil bajara olmagan, biroq pedagogik yo'l-yo'riq bilan muvaffaqiyatli uddalashi mumkin bo'lgan kognitiv vazifalarni bajarishga xizmat qiladi.

Jean Piagetning kognitiv rivojlanish nazariyasiga ko'ra, 11–15 yosh oraliq'i o'quvchilarda makoniy abstraksiyalarni yaratish, fazoviy tasavvurlarni tizimlashtirish va hodisalarning sabab–oqibat mexanizmlarini anglash eng faol shakllanadigan bosqichdir. Shu sababli interaktiv xaritalar, raqamli atlaslar, 3D modellashtirish va GIS-platformalar bilan ishlash aynan shu davrda miya faoliyatining rivojlanishiga eng kuchli ta'sir ko'rsatadi. Tadqiqotlar shuni ko'rsatadiki, makoniy ko'nikmalarni erta rivojlantirish keyinchalik matematika, fizika, geoinformatsion tizimlar, muhandislik va hatto iqtisodiy modellashtirish fanlaridagi muvaffaqiyatlar bilan to'g'ridan to'g'ri bog'liq.

O'zbekistonda past geografik savodxonlikning asosiy omillari:

Xarita fondining eskirganligi (1990–2010-yillar) – ko'plab maktablarda yangilangan, aniq, tematik jihatdan boy raqamli kartografik materiallar mavjud emas. Natijada o'quvchi fazoviy jarayonlarning zamonaviy ko'rinishini tasavvur qila olmaydi.

Pedagoglarning raqamli savodxonligi pastligi – ko'pchilik o'qituvchilar interaktiv xaritalar, GIS vositalari, raqamli vizualizatsiya platformalaridan foydalanish ko'nikmasiga ega emas.

Darsliklarda interaktiv komponentlarning yo'qligi – QR-kodlar, raqamli xaritalar, videoxaritalar, havolalar, qidiruv topshiriqlari deyarli mavjud emas.

Maktablardagi texnik infratuzilmaning zaifligi – barqaror internet, zamonaviy kompyuter sinflari, elektron doskalar, raqamli globuslar yetarli emas.

Davlat ta'lim standartlarida "kartografik kompetensiya"ning alohida baholanmasligi – natijada o'quvchilarning fazoviy tahlil, xaritani o'qish, landshaftni modellashtirish bo'yicha real ko'nikmalari shakllanmaydi.

Xarita bilan ishlashga ajratiladigan vaqtning kamligi (4–6 daqiqa) – bu vaqt ichida o'quvchi na tematik bog'lanishni anglay oladi, na mustaqil tahlilga kirisha oladi.

XULOSA

1. Geografik xarita geografiya ta'limining yuragi va ruhidir. Undan voz kechgan holda sifatli geografiya ta'limi haqida gapirib bo'lmaydi.
2. Hozirgi kunda O'zbekiston maktab o'quvchilarining kartografik savodxonligi xalqaro o'rtacha ko'rsatkichdan ancha orqada qolmoqda.
3. Zamonaviy raqamli va interaktiv xaritalar o'quvchilarning motivatsiyasini, qiziqishini va o'quv natijalarini keskin oshirishi tajriba orqali isbotlandi.
4. GIS-texnologiyalar nafaqat ta'lim sifatini oshiradi, balki o'quvchilarda zamonaviy kasblar uchun zarur bo'lgan raqamli ko'nikmalarni ham shakllantiradi.
5. Virtual va kengaytirilgan haqiqat (VR/AR) xaritalari yaqin 5–7 yil ichida geografiya ta'limida inqilob yasashi kutilmoqda.
6. Xarita bilan faol ishlash orqali o'quvchilarda ekologik ong, global fuqarolik, tanqidiy fikrlash va muammolarni yechish ko'nikmalari rivojlanadi.

AMALIY TAKLIFLAR

1. 2026-yil 1-yanvarga qadar barcha maktablarni 2020-yildan keyin chop etilgan zamonaviy fizik, siyosiy va iqtisodiy xaritalar bilan to'liq ta'minlash.
2. 2025–2030-yillarda har yili kamida 1000 nafar geografiya o'qituvchisini "Raqamli kartografiya va GIS" bo'yicha 72–108 soatlik malaka oshirish kurslaridan o'tkazish.

3. 2026-yildan boshlab barcha 6–11-sinf geografiya darsliklariga har bir mavzuga mos QR-kodli interaktiv xarita va GIS loyihalarni kiritish.
4. Har yili “Eng yaxshi raqamli xarita”, “Eng yaxshi StoryMap” respublika tanlovlarini o‘tkazish va g‘oliblarga grantlar berish.
5. Har bir viloyatda kamida bitta “Geografik raqamli markaz” tashkil etib, bepul GIS dasturlari va o‘quv materiallari bilan ta‘minlash.
6. O‘zbekiston Respublikasi Xalq ta‘limi vazirligi huzurida “Kartografik kompetensiyalarni rivojlantirish” bo‘yicha maxsus komissiya tuzish va milliy monitoring tizimini yo‘lga qo‘yish.
7. 2027-yilgacha kamida 500 ta maktabda “GIS sinfi” tashkil etish va ularni bepul ArcGIS Online maktab litsenziyasi bilan ta‘minlash.
8. Geografiya fanidan davlat attestatsiyasiga “xarita bilan ishlash” bo‘limini majburiy kiritish. Ushbu takliflar amalda to‘liq bajarilganda, 5–7 yil ichida O‘zbekiston maktab o‘quvchilarining kartografik savodxonligi xalqaro yetakchi davlatlar darajasiga yaqinlashishi va geografiya fanining o‘quvchilar orasida eng sevimli fanlardan biriga aylanishiga ishonchimiz komil.

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Development Of Historical Films In Modern Karakalpak Cinema

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Abstract

The article discusses the development of historical films in modern Karakalpak cinema and issues that need to be addressed in the future. One of the pressing issues in Karakalpak cinema is the creation of historical films for children based on the childhood lives of great people.

Keywords: Modern cinema, historical films, national content, value, national education, film language, image.

Annotatsiya

Maqolada Qoraqalpoq zamonaviy kino san'atida tarixiy filmlar rivoji va kelajakda qilinishi kerak bo'lgan masalalar haqida fikr yuritiladi. Qoraqalpoq kino san'atida dolzarb masalalardan biri - ulug'lar bolaligi hayotidan olib bolalar uchun tarixiy filmlar yaratishdagi dolzarb masalalarga taklif va echimlari ko'rsatib beriladi

Tayanch so'zlar: Zamonaviy kino, tarixiy filmlar, milliy kontent, qadriyat, milliy tarbiya, kino tili, tasvir.

Qoraqalpoq kino san'atida zamonaviy badiiy jarayonda tarixiy filmlar yaratish masalalariga e'tibor qaratish zarurati mavjud. So'nggi ikki yil ichida mamlakatimizda tarixiy filmlar yaratish uchun maxsus qarorlar qabul qilinmoqda. Tarixiy filmlar yaratish borasida hukumat qarorlari kinoijodkorlar uchun yangi vazifalar belgilab berdi. O'zbek kinematografiyasida so'nggi yillarda suratga olingan Z.Musoqov "Qo'rg'oshin", J.Ahmedov "Islomxo'ja", A.G'aniev "Elparvar", D.Masaidov "Qo'qon shamoli", M.Erkinov "Avloniy" kabi tarixiy filmlari tasvirga olindi.

Qoraqalpoq milliy kinosi ham shu an'analarni davom ettirishi kerak, chunki kino sohasida buyuk shaxslar hayoti asosida tarbiyaviy ahamiyati yuqori filmlarni yaratmas ekan, unda milliy kontent yaratish masalalarida orqada qolib ketadi.

O'tgan ajdodlarimiz haqida tarixiy asarlar yozish, ularning xalq uchun qilgan xizmatlarini shuqur tahlil etib, badiiy filmlar yaratish ajdodlarimiz ruhini shod etish bilan birga ularni kelajak avlodga tanishtira boruvchi o'chmas yodgorlikdir.

Bobomiz Ajiniyoz Qo'siboy o'g'lining 200 yilligi sharafiga Prezident qarori bilan yaratilgan film ayni shu talabning bajarilganiga misol bo'la oladi. Biroq, klassik shoirimiz Ajiniyoz Qo'siboy o'g'lining ulug'vorligini kinoda yanada ochib berganda film ta'sirchanligi yuqori bo'lar edi. Axir tarixchi va adabiyotshunos olimlarimizning ilmiy ishlariga e'tibor qaratsak Ajiniyoz butun bir millatning milliy g'ururi ekanligini isbotlab bera olganligini ko'ramiz. Mana badiiy publitsistik filmda shu jihatlariga e'tibor berilmay qoladi. Natijada bu ulug' shaxs haqidagi tarixiy filmning muvaffaqiyatsizligini keltirib chiqargan.

Qoraqalpoq kino san'atida dolzarb masalalardan biri ulug'lar bolaligi hayotidan olib bolalar uchun tarixiy filmlar yaratish kun talabidagi vazifa bo'lib turganligi ma'lum. Bunda kinoijodkorlar e'tibor berishi kerak bo'lgan jihatlar Buyuk ajdodlarimizning bolalik hayoti, ularga tarbiya bergan ota-onalari, saboq bergan ustozlari haqida hikoya qiluvchi tarixiy filmlar yaratilsa, kelajak farzandlarimiz tarbiyasi uchun salmoqli hissa bo'lib qo'shiladi. "Buyuklar bolaligi" nomi bilan qoraqalpoq xalqining shonli farzandlarining hayot yo'li ilmiy manbalar asosida o'rganilib, adabiyotshunos olimlarimizning fikrlari asosida kinossenariylar tayyorlanishi kerak. Bunda kino ssenariylar qo'yiladigan talab va qoidalar asosida yozilishi lozim.

"Qoraqalpoqfilm" kinostudiyasi tomonidan 2016-2024-yillar oralig'ida hujjatli tarixiy filmlar ko'plab suratga olingan. Shu davrda Qoraqalpoq milliy kinosida mashhur shaxslar siymosi aks etgan filmlardan "Oqsoqol," "Mevali daraxt," "Amudaryo sohili kuychisi," "Ochiq Ayoq," "Qora uydan keng dunyoga," "Xalqning mard farzandi," "Xalqiga bag'ishlangan umr," "Qalbida keng

dunyo," "Xalq qadrlagan iste'dod" hujjatli filmlarida qoraqalpoq xalqining shonli farzandlarining hayot yo'li aks etadi. Tarixiy hujjatli filmlar buyuk insonlar qiyofasini mahorat bilan ochib bera olgan. Tarixiy filmlarda rassom ichki kiyim va liboslar yechimi ustida mahorat bilan ishlay olgan. Masalan, "Xalqiga bag'ishlangan umr" 2 qismli hujjatli filmi (2022-y.) Qoraqalpoq xalqining buyuk farzandi, taniqli siyosatchi Allayar Dosnazarovning hayoti va faoliyati haqida so'z yuritiladi. Filmda tarixiy davrlar bilan liboslar uyg'unligi bu davr haqiqatini ko'rsatib turibdi.

Hujjatli kinoning o'ziga xosligi haqida Sergey Borisov yaxshi gapirgan:..."Hujjatli kinoning barcha turlari, ko'rinishlari va janrlari apriori quriladi va shunga mos ravishda haqiqiy, sahnalashtirilmaydigan voqelik kadrlaridan iborat bo'lib, bu unga alohida ishonchlilik darajasini beradi. Hujjatli kinoning materiali dastlab badiiy kinoda bo'lgani kabi qayta yaratilgan (ikkilamchi) voqelikning emas, balki haqiqiy hayotiy (birlamchi) voqelikning izidir. Boshqacha aytganda, hujjatli filmning har bir alohida kadri yoki birligi haqiqiy faktografik hayotiy voqelikning qolipiga, hujjatga aylanadi, unda nafaqat real mavjud obyektlar, predmetlar, ranglar, omillar va makonlar, balki bu obyektlar, predmetlar, ranglar, fakturalar va makonlarning o'zi muallif tomonidan maxsus qayta yaratilmagan, balki mustaqil, oddiy, maishiy yoki dastlab badiiy bo'lmagan hayot bilan "yashaydi." Hayot qanday bo'lsa, shundayligicha bizga hujjatli ekrandan qarab turadi va hujjatli kinoning asosiy fenomeni ana shunda."¹

Qoraqalpoq milliy kino san'atida bolalar uchun milliy kontent yaratish dolzarb masala bo'lib qolmoqda. Bu yo'nalishda qoraqalpoq kino ijodkorlariga maktab kerak. Ma'lumki, bu masala so'nggi davrda o'zbek milliy kinosida yaxshi yo'lga qo'yilmoqda. Bolalar kontentini rivojlantirish markazi direktori Jahongir Ahmedov "TIMS Productions" kompaniyasi asoschisi, dunyoga mashhur "Muhtasham yuz yil" seriali prodyuseri, "Oltin palma" xalqaro mukofoti sohibi Timur Savji bilan ushbu masala yuzasidan uchrashdi.

Timur Savji nafaqat Turkiya, balki xalqaro kinoindustriyada ham o'z o'rniga ega mashhur prodyuser sanaladi. Uning filmografiyasidan bugungi kungacha 40 dan ziyod turli janr va yo'nalishlardagi kinofilmlar hamda seriallar o'rin olgan bo'lib, ularning orasida eng mashhuri "Muhtasham yuz yil" serialidir. Mazkur serial 70 dan ortiq mamlakatga eksport qilingan. U Sharqiy Osiyodan G'arbiy Yevropagacha, Yaqin Sharqdan Lotin Amerikasigacha bo'lgan ulkan auditoriyani qamrab oldi. Bu esa Turkiya serial sanoatining dunyo miqyosida keng tan olinishi bo'ldi va bunda Timur Savjining hissasi katta. 50 dan ortiq xalqaro tanlovlarda sovrin olgan ushbu serial Turkiyaga sayyohlar oqimining keskin oshishiga ham xizmat qilgan. "TIMS Productions" kompaniyasini Bolalar kontentini rivojlantirish markazi tarixiy filmlar yaratish yo'nalishida ssenariy mualliflari, libos rassomlari hamda dekorator rassomlarning malakasini oshirish bo'yicha hamkorlik qilishiga shaqirdi. Bu tashabbus tarixiy filmlar yaratilishi uchun yaxshi maktab bo'lib xizmat qiladi. Qoraqalpoq kino san'atida ham shunday an'analar davom ettirilsa, "Buyuklar bolaligi" nomi bilan qoraqalpoq xalqining shonli farzandlarining hayot yo'li kino lentalariga ko'chadi va bolalarimiz uchun milliy kontent yaratiladi.

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Quality Of Life In Women During The Menopausal Transition

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Abstract

The menopausal transition is associated with hormonal fluctuations that lead to vasomotor, psychological, and somatic symptoms, significantly impairing quality of life in women. Assessment of quality of life has become a key indicator for evaluating the severity of climacteric syndrome and the effectiveness of therapeutic interventions. Objective: To assess quality of life in peri- and postmenopausal women and to evaluate the effectiveness of a non-hormonal therapy based on a fixed combination of magnesium citrate and pyridoxine.

Materials and Methods: A large multicenter clinical study was conducted in the Republic of Uzbekistan and included over 11,000 participants. A subgroup of 3,808 women with climacteric syndrome was analyzed, including patients receiving and not receiving menopausal hormone therapy. Quality of life indicators and serum magnesium levels were assessed before and after four weeks of therapy with magnesium citrate combined with pyridoxine. Results: A high prevalence of magnesium deficiency was identified among peri- and postmenopausal women (55.0% in patients receiving menopausal hormone therapy and 63.9% in those not receiving hormone therapy). Four-week administration of magnesium citrate with pyridoxine led to a significant increase in serum magnesium levels, a reduction in the severity of climacteric symptoms, and a marked improvement in quality of life parameters. The treatment demonstrated a favorable safety and tolerability profile.

Conclusion: The menopausal transition is accompanied by a significant decline in quality of life. Non-hormonal therapy with a fixed combination of magnesium citrate and pyridoxine is an effective and safe approach for reducing climacteric symptoms and improving quality of life in peri- and postmenopausal women. Clinical data obtained in Uzbekistan support the use of this therapy as part of an individualized management strategy.

Keywords: menopausal transition; quality of life; climacteric syndrome; magnesium deficiency; pyridoxine; non-hormonal therapy; Uzbekistan

INTRODUCTION

According to the World Health Organization, quality of life is defined as an individual's perception of their position in life within the context of culture, value systems, personal goals, expectations, and concerns. Quality of life is influenced by physical, emotional, and social factors, with health being the most significant among them. Health represents an integrated measure of physical, psychological, and social functioning based on subjective perception.

In modern medicine, quality of life has become a fundamental component in understanding disease and evaluating the effectiveness of therapeutic interventions. Since patients are the primary recipients of healthcare services, their subjective assessment provides the most reliable evaluation of treatment outcomes. The assessment of quality of life is considered a

sensitive, informative, and cost-effective tool for evaluating both health status and therapeutic efficacy.

MATERIALS AND METHODS OF RESEARCH

Women experiencing climacteric syndrome often demonstrate a significant decline in quality of life due to estrogen deficiency, increased anxiety, and manifestations of autonomic dysfunction.

The menopausal transition, or perimenopause, typically begins approximately four years before the final menstrual period. This stage is characterized by menstrual cycle irregularities, vasomotor symptoms, sleep disturbances, mood fluctuations, and vaginal dryness. Nearly all women in perimenopause report changes in menstrual bleeding patterns, and up to 80% experience hot flashes; however, only 20–30% seek medical assistance.

Chronological age is not a reliable indicator of reproductive aging. Therefore, the STRAW +10 (Stages of Reproductive Aging Workshop) criteria were developed to assess age-related changes in the hypothalamic–pituitary–ovarian axis.

Initial changes in quality of life may already appear during the late reproductive stage, often associated with shortened menstrual cycles. During the menopausal transition, estradiol levels may remain relatively stable, while progesterone deficiency becomes more pronounced. Although ovulatory cycles may persist, their duration is shortened due to a reduced follicular phase. With prolonged menstrual delays, vasomotor, psychological, and urogenital symptoms become more prominent. Only 5–10% of women experience this period without symptoms.

Postmenopause begins after the final menstrual period. Vasomotor symptoms most commonly develop during early postmenopause, lasting 5–8 years, followed by a late postmenopausal stage.

THE RESULTS AND THEIR DISCUSSION

The hallmark symptoms of the menopausal transition and early postmenopause include hot flashes, vaginal dryness, breast tenderness, sleep disturbances, and depressive symptoms. The prevalence of depression during the menopausal transition is approximately 2.5 times higher than in postmenopausal women.

Hot flashes are the most frequent symptom, affecting up to 80% of women. Nighttime hot flashes, known as night sweats, often lead to sleep disruption and complete awakenings. Sleep deprivation, particularly loss of deep and REM sleep, contributes to fatigue, irritability, impaired concentration, and mood instability. The prevalence of insomnia during early menopausal transition reaches 46%, and coexisting anxiety or depression further exacerbates sleep disorders.

Additional symptoms include paresthesia, nocturnal limb pain or numbness, musculoskeletal pain, headaches, weight gain, reduced muscle tone, and skin aging. These changes negatively affect emotional well-being and self-perception.

Breast pain and tenderness are relatively common during early menopausal transition and tend to decrease toward menopause. These symptoms are often associated with fluctuations in estradiol levels and relative progesterone deficiency.

Collectively, these manifestations significantly impair quality of life and may contribute to anxiety, health-related fears, and, in some cases, persistent depressive disorders.

Management Strategies

Management of women during the menopausal transition should be individualized and based on symptom severity and patient priorities.

For women with vasomotor and other climacteric symptoms, the appropriateness of menopausal hormone therapy (MHT) should be considered. The goal of MHT is to partially compensate for hormone deficiency using the lowest effective doses to improve overall well-being.

Current indications for MHT include:

- Vasomotor symptoms associated with mood changes and sleep disturbances
- Symptoms of urogenital atrophy and sexual dysfunction

- Reduced quality of life related to climacteric symptoms, including joint and muscle pain
- Premature or early menopause, whether natural or surgical

According to the International Menopause Society, the choice of therapy, dosage, duration, and route of administration should be individualized, taking into account medical history and contraindications. MHT is recommended for moderate to severe climacteric syndrome using minimal effective doses, with regular monitoring. Continuous use should generally not exceed ten years.

Lifestyle modifications are often sufficient for women with mild vasomotor symptoms. These include temperature regulation, layered clothing, avoidance of triggers such as hot beverages, spicy foods, alcohol, and stress. Non-hormonal therapies and adaptogens may also be effective in this group.

Women with moderate symptoms may require MHT, while those with contraindications may benefit from non-hormonal treatments.

Mastodynia and Supportive Therapy

Breast pain is a frequent complaint during the menopausal transition and may increase anxiety related to oncological concerns. However, the association between mastodynia and breast cancer is very low.

Symptomatic treatment typically includes acetaminophen or nonsteroidal anti-inflammatory drugs, administered either topically or systemically. In cases where mastodynia develops during MHT, the need for continued hormone therapy should be reassessed. Local progesterone therapy may reduce cyclic breast pain.

Non-hormonal agents and adaptogens have also demonstrated efficacy. Notably, prolonged use of a fixed combination of magnesium citrate and pyridoxine (vitamin B6) has shown favorable results. Magnesium and pyridoxine enhance each other's absorption and contribute to neuromodulation and anxiolytic effects through serotonin synthesis.

CONCLUSION

The menopausal transition is associated with hormonal fluctuations, vasomotor symptoms, sleep disturbances, and psychosocial changes that substantially reduce quality of life.

Assessment of quality of life based on subjective criteria has become a key clinical marker guiding individualized management strategies. While menopausal hormone therapy remains effective for many women, non-hormonal approaches may provide substantial benefits in selected cases.

Clinical evidence from Uzbekistan confirms that magnesium citrate combined with pyridoxine is an effective and safe option for reducing climacteric symptoms and improving quality of life in peri- and postmenopausal women.

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Impact Of Obesity And Metabolic Comorbidities On Functional Capacity And Quality Of Life In Heart Failure With Preserved Ejection Fraction

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Abstract

Heart failure with preserved left ventricular ejection fraction is a common clinical form of chronic heart failure and is frequently associated with arterial hypertension, ischemic heart disease, obesity, and diabetes mellitus. These comorbidities significantly affect symptom severity, myocardial remodeling, and quality of life. Objective. To evaluate clinical manifestations, anthropometric obesity indicators, quality of life, physical performance, and echocardiographic characteristics in patients with heart failure with preserved ejection fraction. Materials and Methods. The study included 72 patients aged 47–77 years (mean age 59.6 ± 7.8 years). Clinical status and New York Heart Association functional class were assessed. Quality of life was evaluated using the Minnesota Living with Heart Failure Questionnaire. Physical performance was assessed by the six-minute walk test. Anthropometric parameters included body mass index calculated by the Quetelet formula and waist circumference. Transthoracic echocardiography and serum N-terminal pro-brain natriuretic peptide measurement were performed. Results. Excess body weight or obesity was detected in 59 patients (81.9%), and abdominal obesity was present in 49 patients (68.1%). Dyspnea on exertion was reported by 69 patients (95.8%). Increasing functional class was associated with higher body mass index, larger waist circumference, greater left ventricular myocardial mass, shorter walking distance in the six-minute test, and worse quality-of-life scores.

Conclusion. Heart failure with preserved ejection fraction is characterized by universal diastolic dysfunction, high prevalence of obesity, reduced exercise tolerance, and impaired quality of life. Metabolic comorbidities significantly worsen the clinical course of the disease.

Keywords: heart failure with preserved ejection fraction, diastolic dysfunction, obesity, body mass index, waist circumference, quality of life.

INTRODUCTION

To identify independent predictors of reduced exercise tolerance and impaired quality of life, multivariate linear regression analysis was performed. The dependent variables included six-minute walk distance and total Minnesota Living with Heart Failure Questionnaire score. Independent variables entered into the regression model were age, sex, body mass index, waist circumference, presence of diabetes mellitus, severity of arterial hypertension, left ventricular mass index, and left atrial diameter.

The total questionnaire score was significantly higher in women compared with men (48.5 [36.0; 59.0] versus 21.5 [14.5; 40.0], $p < 0.001$). Exercise tolerance correlated inversely with quality of life ($r = -0.39$, $p = 0.002$). Diabetes mellitus and ischemic heart disease were associated with reduced physical performance and more severe clinical symptoms.

Statistical analysis was performed using Statistica software version 6.1. Quantitative variables were initially assessed for distribution normality using the Shapiro–Wilk test. Variables demonstrating a normal distribution were expressed as mean values with standard deviation, while non-normally distributed variables were presented as median values with interquartile ranges.

For comparison of two independent groups with normally distributed data, the Student's t-test was applied. In cases of non-normal distribution, the Mann–Whitney U test was used. Comparisons among three or more independent groups were conducted using one-way analysis of variance with post hoc multiple comparison testing for normally distributed variables, and the Kruskal–Wallis test for non-parametric data.

Categorical variables were expressed as absolute numbers and percentages. Group differences in categorical data were evaluated using the chi-square test. Correlation analysis was performed using Spearman's rank correlation coefficient to assess relationships between clinical, anthropometric, functional, and echocardiographic parameters.

Multicollinearity was assessed prior to model construction using variance inflation factor values, with a threshold of less than 5.0 considered acceptable. Model goodness-of-fit was evaluated using the coefficient of determination. A two-sided p-value less than 0.05 was considered statistically significant.

MATERIALS AND METHODS

The study included seventy-two patients aged forty-seven to seventy-seven years (mean age 59.6 ± 7.8 years) diagnosed with heart failure with preserved left ventricular ejection fraction. Among them, thirty-five patients (48.6%) had arterial hypertension as the primary cause, while thirty-seven patients (51.4%) had both arterial hypertension and coronary artery disease. All patients provided written informed consent prior to participation. Inclusion criteria were age between forty and eighty years, New York Heart Association functional class I to III, and left ventricular ejection fraction of forty-five percent or higher. Exclusion criteria included left ventricular ejection fraction below forty-five percent, myocardial infarction or unstable angina within the last three months, significant valvular heart disease, decompensated heart failure class IV, secondary hypertension, clinically significant arrhythmias, severe pulmonary, hepatic, or renal disease, and oncologic disorders.

All clinical evaluation. Heart failure symptoms were assessed using the Clinical State Assessment Scale, and functional capacity was determined by the six-minute walk test. Physical examination included measurement of blood pressure, heart rate, body weight, height, and waist circumference. Body mass index was calculated using the Quetelet formula. Patients were classified according to obesity status based on standard body mass index thresholds: normal weight ($18.5\text{--}24.9 \text{ kg/m}^2$), overweight ($25.0\text{--}29.9 \text{ kg/m}^2$), obesity class I ($30.0\text{--}34.9 \text{ kg/m}^2$), obesity class II ($35.0\text{--}39.9 \text{ kg/m}^2$), and obesity class III ($\geq 40.0 \text{ kg/m}^2$). Abdominal obesity was defined as waist circumference greater than ninety centimeters in women and greater than one hundred centimeters in men. Health-related quality of life was evaluated using the Minnesota Living with Heart Failure Questionnaire, which includes physical, emotional, and socioeconomic domains. Higher total scores indicated greater impairment of quality of life. Transthoracic echocardiography was performed using SonoScape 8000 and VIVID 3 systems in M-mode, B-mode, and Doppler mode. Structural parameters assessed included left ventricular end-diastolic and end-systolic diameters, interventricular septal thickness, posterior wall thickness, left atrial diameter, right atrial and ventricular dimensions, and left ventricular mass index. Systolic function was evaluated by left ventricular ejection fraction, while diastolic function was assessed using early diastolic filling velocity (E), late atrial filling velocity (A), E/A ratio, deceleration time, and isovolumic relaxation time. Left ventricular remodeling patterns were classified according to the Ganau classification.

Correlation analysis demonstrated significant associations between anthropometric obesity indicators and functional capacity. Body mass index showed a moderate inverse correlation with six-minute walk distance ($r = -0.41$, $p < 0.001$), while waist circumference demonstrated

a similar inverse relationship ($r = -0.43$, $p < 0.001$). Both parameters correlated positively with total quality-of-life score, indicating worse perceived health status with increasing obesity (body mass index $r = 0.44$, $p < 0.001$; waist circumference $r = 0.47$, $p < 0.001$).

Exercise tolerance exhibited a significant inverse correlation with symptom severity and quality of life. The six-minute walk distance correlated negatively with the total Minnesota questionnaire score ($r = -0.39$, $p = 0.002$) and positively with left ventricular diastolic relaxation parameters.

Age demonstrated a positive correlation with left ventricular mass index ($r = 0.42$, $p < 0.001$) and left atrial diameter ($r = 0.35$, $p = 0.008$), indicating progressive myocardial remodeling with increasing age.

The presence of diabetes mellitus was associated with significantly reduced exercise tolerance and worse clinical status. Patients with diabetes mellitus walked a shorter distance during the six-minute test (365.9 ± 58.4 m) compared with patients without diabetes mellitus (414.6 ± 76.2 m, $p = 0.03$). Total quality-of-life scores were also higher in patients with diabetes mellitus (52.1 ± 13.7 versus 38.6 ± 14.2 , $p = 0.01$).

Multivariate linear regression analysis identified waist circumference, presence of diabetes mellitus, left ventricular mass index, and female sex as independent predictors of reduced exercise tolerance. The final regression model explained 46.2% of the variability in six-minute walk distance.

A separate regression model for quality of life demonstrated that waist circumference, New York Heart Association functional class, diabetes mellitus, and left atrial diameter were independent determinants of higher total questionnaire scores. This model accounted for 49.7% of the variance in quality-of-life outcomes.

Severity of arterial hypertension showed significant positive associations with left ventricular mass ($r = 0.26$, $p = 0.03$), left ventricular mass index ($r = 0.32$, $p = 0.01$), and right ventricular diameter ($r = 0.30$, $p = 0.01$). Inverse correlations were observed between hypertension severity and six-minute walk distance ($r = -0.40$, $p < 0.001$), as well as overall quality-of-life measures.

RESULTS

Clinical evaluation revealed that 69 patients (95.8%) complained of dyspnea during physical exertion, while 3 patients (4.2%) experienced dyspnea at rest. Peripheral edema of varying severity was observed in 54 patients (75.0%). Signs of pulmonary congestion were detected in 10 patients (13.9%), and hepatomegaly was present in 12 patients (16.7%).

Anthropometric assessment demonstrated a high prevalence of obesity. The mean body mass index was 31.2 ± 4.6 kg/m². Normal body weight was observed in 13 patients (18.1%), overweight in 21 patients (29.2%), obesity class I in 26 patients (36.1%), obesity class II in 10 patients (13.9%), and obesity class III in 2 patients (2.7%). The mean waist circumference was 101.4 ± 11.8 cm. Abdominal obesity was identified in 68.1% of patients.

Exercise tolerance decreased progressively with worsening functional class. The mean six-minute walk distance was 462 ± 54 m in functional class I, 398 ± 62 m in functional class II, and 332 ± 58 m in functional class III ($p < 0.001$).

Quality-of-life assessment demonstrated a significant deterioration with increasing disease severity. The total Minnesota questionnaire score was 22.3 ± 8.6 in functional class I, 39.7 ± 12.4 in functional class II, and 58.9 ± 14.1 in functional class III ($p < 0.001$). Women demonstrated significantly higher total scores compared with men (48.5 [36.0; 59.0] versus 21.5 [14.5; 40.0], $p < 0.001$).

Echocardiographic examination revealed diastolic dysfunction of the left ventricle in all patients. Concentric hypertrophy was observed in 76.2% of cases. Increasing functional class was associated with progressive thickening of the interventricular septum, increased posterior wall thickness, and enlargement of the left atrium.

Patients with diabetes mellitus demonstrated lower exercise tolerance (365.9 ± 58.4 m versus 414.6 ± 76.2 m) and higher symptom severity scores (4.2 ± 1.4 versus 3.4 ± 1.25). The

presence of ischemic heart disease was associated with more pronounced myocardial remodeling and reduced functional capacity.

CONCLUSION

1. Diastolic dysfunction of the left ventricle was detected in 100% of patients with heart failure with preserved ejection fraction.
2. Obesity and abdominal fat accumulation were present in more than 80% of patients and were associated with worse clinical outcomes.
3. Increasing functional class was accompanied by reduced exercise tolerance, deterioration of quality of life, and progression of myocardial hypertrophy.
4. Women reported significantly poorer quality of life compared with men.
5. Diabetes mellitus and ischemic heart disease negatively influenced physical performance and clinical status.

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Rheumatoid Arthritis Activity During Pregnancy And Postpartum: Clinical Observations

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Abstract

Rheumatoid arthritis (RA) frequently affects women of reproductive age, which underscores the importance of studying the interplay between pregnancy and RA. Historically, early observations noted a decrease in RA activity in the majority of pregnant women. More recent prospective studies report that only 48–66% of pregnant women experience clinical improvement during gestation, while postpartum exacerbations occur in approximately 70% of patients, often necessitating pharmacological intervention.

The aim of this study was to evaluate RA activity dynamics using DAS28–CRP during pregnancy and up to 12 months postpartum, to assess the impact of disease activity at conception on subsequent RA course, and to determine the necessity and effect of anti-inflammatory therapy during gestation.

In a prospective follow-up, 32 pregnancies in 29 women with confirmed RA (ACR 1987 criteria) were monitored. During pregnancy, 46% of patients demonstrated a decrease in disease activity. Postpartum, 75% experienced RA exacerbations, typically 1.5 months after delivery. Patients with remission or low disease activity at conception maintained significantly lower disease activity throughout gestation and in the early postpartum period compared with patients presenting moderate or high activity in the first trimester ($p = 0.0008–0.04$). Similarly, women without arthritis at conception showed lower RA activity during pregnancy.

In 23 patients (71.9%) who exhibited disease activity during gestation, intensification of anti-inflammatory therapy resulted in a significant decrease in DAS28–CRP ($p = 0.008$). Conversely, 9 patients (28.1%) with low activity who did not receive intervention showed a tendency toward increased disease activity. Postpartum, patients with moderate or high activity resumed therapy earlier, which facilitated quicker improvement ($p = 0.008$), while those with low activity during pregnancy experienced a delayed increase in RA activity lasting up to three months. In 12 patients (37.5%) who discontinued basic anti-inflammatory (HDL) or genetically engineered biological therapy (GIBP) due to unplanned pregnancy, disease activity during the first to third trimesters was significantly higher than in 20 patients (62.5%) who either did not use these drugs or discontinued them prior to conception ($p < 0.04$).

Remission or low RA activity at conception predicts lower disease activity and allows for minimal or no pharmacological therapy during pregnancy. Without medical intervention, RA activity may increase. Postpartum exacerbations are common, even in patients with prior low activity, emphasizing the need for careful monitoring. Abrupt discontinuation of HDL or GIBP in unplanned pregnancies is associated with early gestational increases in RA activity. Planned pregnancy with stable anti-inflammatory therapy is recommended to optimize maternal disease control.

Keywords: rheumatoid arthritis, pregnancy, DAS28-CRP, anti-inflammatory therapy, disease activity

INTRODUCTION

Rheumatoid arthritis (RA) predominantly affects women of childbearing age, and pregnancy can influence the clinical course of the disease. The first formal observation of RA during pregnancy, conducted in 1935, indicated a reduction in disease activity in most cases. Modern literature reports variable outcomes, with 48–91% of women experiencing improvement during gestation and 60–91% facing postpartum exacerbations. Disease activity during pregnancy is also impacted by ongoing treatment, underscoring the importance of careful management.

This study was designed to track RA activity throughout pregnancy and the first year postpartum using the DAS28–CRP index, examine the effect of baseline disease activity at conception, and assess the need for anti-inflammatory therapy in pregnant women with RA. Rheumatoid arthritis (RA) frequently affects women of reproductive age, making the interaction between pregnancy and RA an area of ongoing clinical interest. Historically, early observations suggested that pregnancy induces a reduction in RA activity in the majority of patients. Contemporary prospective studies, however, demonstrate that only 48–66% of pregnant women experience clinical improvement during gestation, while exacerbations are observed postpartum in approximately 70% of cases, often necessitating pharmacological intervention. This study aimed to evaluate RA activity dynamics using DAS28–CRP throughout pregnancy and the first year postpartum, examine the impact of disease activity at conception on subsequent RA course, and assess the need for anti-inflammatory therapy in pregnant patients.

A prospective cohort of 32 pregnancies in 29 women with confirmed RA (1987 ACR criteria) was followed throughout pregnancy and for twelve months postpartum. RA activity decreased during pregnancy in 46% of patients, while 75% experienced exacerbation within an average of 1.5 months after delivery. Patients with remission or low disease activity at conception maintained lower RA activity throughout gestation and one month postpartum compared to those with moderate or high initial activity ($p=0.0008$ – 0.04). Among patients receiving intensified therapy during pregnancy, DAS28–CRP significantly decreased ($p=0.008$), whereas patients with low activity without intervention showed a trend toward increasing disease activity. Abrupt discontinuation of disease-modifying therapy (HDL or GIBP) due to unplanned pregnancy was associated with significantly higher RA activity throughout gestation ($p<0.04$). Low RA activity at conception predicts a more favorable course during pregnancy and may minimize pharmacologic requirements. Postpartum exacerbation is common, including in patients with prior low disease activity. Planned pregnancy with stable anti-inflammatory therapy is recommended to reduce disease flares.

MATERIALS AND METHODS

A total of 29 women with confirmed RA (32 pregnancies) were followed prospectively. Eleven patients (38%) had juvenile RA (JURA). Clinical evaluations occurred at 10–12, 20–22, and 30–32 weeks of gestation, and at 1, 3, 6, and 12 months postpartum. Most patients (78.1%) were enrolled in the first trimester, while 9.4% and 12.5% were enrolled in the second and third trimesters, respectively. Recurrent pregnancies during the follow-up period were treated as new cases.

The median patient age was 29 years [27–31], disease duration 8 years [4–16], and age at onset 19 years [13–25]. Seropositive rheumatoid factor (RF) was present in 62.1% of patients, and antibodies to cyclic citrullinated peptide in 58.6%. Radiological stages II–III were observed in 72.4% of patients, and functional classes I–II in 86.2%. Extra-articular manifestations included pericarditis ($n=4$), rheumatoid nodules ($n=2$), polyneuropathy ($n=1$), and one case of organ amyloidosis. Fifteen patients (51.7%) were pre-pregnant, while 18 (62.1%) were primigravida.

Prior to conception, 93.1% of patients had used nonsteroidal anti-inflammatory drugs (NSAIDs) and 89.7% had received basic anti-inflammatory therapy (HDL). In 75% of cases, HDL was

discontinued before pregnancy (median withdrawal-to-conception interval 18 months [10–30]); in the remaining 25%, therapy was stopped immediately after pregnancy confirmation. NSAIDs were discontinued no later than 30–32 weeks of gestation.

RA activity was evaluated using the DAS28–CRP index at all study visits. Remission was defined as DAS28–CRP <2.6, low activity 2.6–3.2, moderate activity 3.2–5.1, and high activity >5.1. Patients were grouped based on disease activity at conception to assess the impact on subsequent RA course.

Descriptive statistics were expressed as median [interquartile range] for non-normally distributed data. Between-group comparisons were performed using the Mann–Whitney U test or chi-square test, and longitudinal changes were assessed using Friedman’s ANOVA for repeated measures. Statistical significance was set at $p < 0.05$.

RESULTS

During pregnancy, 46% of patients experienced a decrease in DAS28–CRP, with 25% showing a marked reduction. Moderate exacerbation was observed in 10.7% of cases. By the third trimester, remission or low activity increased to 62.6%, while moderate or high activity decreased to 37.4%.

Within 12 months postpartum, 75% of patients experienced RA exacerbation, with a median onset of 1.5 months [0.75–2.5]. Remission or low activity was observed in 57.7% at 12 months postpartum. Patients with low or remission activity at conception maintained lower DAS28–CRP values throughout gestation and one month postpartum ($p = 0.0008–0.04$) compared to those with moderate or high activity. Among patients with active disease during pregnancy, anti-inflammatory therapy was intensified in 71.9%, resulting in a significant reduction in DAS28–CRP ($p = 0.008$). Patients with low activity who did not receive therapy tended to have increasing RA activity. Abrupt discontinuation of HDL or GIBP due to unplanned pregnancy was associated with significantly higher RA activity in the first to third trimesters compared with patients who had planned therapy withdrawal ($p < 0.04$).

DISCUSSION

During pregnancy, 46% of patients experienced a decrease in RA activity according to DAS28–CRP, while 10.7% had a moderate increase. By the third trimester, the number of patients with remission or low activity increased to 20 (62.6%), whereas those with moderate or high activity decreased to 12 (37.4%). Within the first month postpartum, 18 patients (56.3%) experienced exacerbation, with 10 (31.3%) showing moderate and 2 (6.3%) severe activity, occurring on average 1.5 months [range 0.75–2.5] after delivery. By the twelfth month postpartum, the number of patients with remission or low RA activity increased to 15 (57.7%), while moderate activity persisted in 11 patients (42.3%), and no cases of high activity were recorded.

Patients with remission or low RA activity at conception maintained significantly lower disease activity throughout pregnancy and one month postpartum compared to those with moderate or high activity in the first trimester ($p = 0.0008–0.04$). Similarly, patients without arthritis at conception (15, 46.9%) had lower DAS28–CRP values during gestation and early postpartum ($p = 0.0007–0.04$).

During pregnancy, anti-inflammatory therapy was intensified in 23 patients (71.9%) with active disease, resulting in a significant reduction of DAS28–CRP ($p = 0.008$). In contrast, the remaining 9 patients (28.1%) with low disease activity who did not receive therapy tended to experience a slight increase in activity. Postpartum, patients with moderate or high disease activity resumed therapy earlier with HDL and/or GIBP, which contributed to faster improvement ($p = 0.008$), whereas those with low activity during pregnancy exhibited a delayed increase in activity until three months postpartum.

Among 12 patients (37.5%) who became pregnant while taking HDL or GIBP and discontinued therapy abruptly due to unplanned pregnancy, RA activity was significantly higher during the first to third trimesters compared with 20 patients (62.5%) who either were not on such drugs or discontinued them before conception ($p < 0.04$). These patients required higher doses of anti-inflammatory drugs during pregnancy ($p = 0.04$).

Overall, the median DAS28–CRP significantly decreased during pregnancy ($p = 0.005$) and increased after childbirth ($p = 0.05$), with a subsequent trend toward reduction by the 12th month postpartum without statistical significance. Only 8 patients (25%) did not experience postpartum exacerbation within 12 months, while 24 patients (75%) experienced at least one episode.

Therapeutic interventions during gestation primarily included NSAIDs (20 patients, 62.5%) and glucocorticoids (23 patients, 71.9%). Dosage adjustments were required in 9 patients (28.1%), and 4 patients (12.5%) received therapy for the first time. Intra-articular injections were administered to 16 patients (50%) and intravenous therapy to 6 patients (18.8%). During delivery, 20 patients (62.5%) with active RA received additional parenteral GC. Postpartum therapy increased, with 24 patients (75%) resuming HDL and 27 patients (84.4%) taking NSAIDs; 8 patients (25%) received GIBP.

Comparison of patients with unchanged therapy ($n = 9$, 28.1%) versus those with intensified therapy ($n = 23$, 71.9%) during pregnancy demonstrated that RA activity decreased in the latter group, whereas in the non-intervention group, activity tended to rise, indicating the efficacy of anti-inflammatory therapy.

CONCLUSIONS

1. Forty-six percent of patients had reduced RA activity during pregnancy, whereas 75% experienced postpartum exacerbations, typically 1.5 months after delivery.
2. Anti-inflammatory therapy during pregnancy significantly reduces RA activity; without intervention, disease activity may rise.
3. Remission or low activity at conception predicts a more favorable course and may allow minimization of therapy.
4. Postpartum flares occur even in previously low-activity patients; close monitoring is required.
5. Unplanned discontinuation of HDL or GIBP leads to increased RA activity early in pregnancy, highlighting the importance of therapy planning.

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Metaphorical Use Of Flower Names In Contemporary Poetry

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Abstract

This article reviews and analyses literature to find out the metaphorical use of flower names in modern poetry. The results indicate that today's poets keep the classical tradition of floral symbolism and at the same time invent new metaphorical associations that are more in tune with contemporary sensibilities and existential issues.

Keywords: metaphor, flower names, contemporary poetry, floral imagery, poetic symbolism, linguistic analysis, figurative language, literary criticism.

Introduction. The use of flower names as metaphors in poetry can be considered one of the longest-standing traditions in literature all over the world. This use has continued from ancient pastoral poems to today's experimental writings. Poets are able to develop images that appeal to the senses and can be easily recognized through the properties of flowers, the latter being a part of nature that has a visual, olfactory, and tactile aspect [1]. Furthermore, the importance of the present study completely depends on the understanding of the process how modern poets are able to create their own unique floral symbolism and thus claim their part in the evolution of poetic language and at the same time map out the limits of the metaphorical expressiveness. The different styles and themes in contemporary poetry have made it one of the main sources of inspiration for poets; their names have been very frequently used in modern poets' metaphors [2]. The study of this issue needs careful and methodical analyses on the one hand of the metaphorical attributes that particular flower names come to possess and on the other hand of how the meanings are carried out through the methods of communication between poet and reader that are taking place in the modern literary culture's framework.

Methodology and Literature Review. In the methodological approach taken, qualitative content analysis is combined with comparative literary criticism, while simultaneously relying on cognitive linguistics and metaphor theory - as articulated by Lakoff and Johnson - as the theoretical frameworks from which the study derives its metaphors. The research corpus is made up of the works of scholars who discuss the use of imagery in poetry, the symbolism of plants in literature, and the poetic practices of today, plus the texts of poets that are directly analyzed for the metaphorical use of flower names.

The grasp of floral metaphors in poetry is theoretically based on the modernist literary theory's concept of the objective correlative, which asserts that emotion can be indirectly expressed through concrete images or, in this case, flowers [4]. The literature of scholars indicates that flowers are what the researchers call "metaphorical versatility," which means that the flowers are allowed to be represented by different concepts e.g. - transient beauty as well as mortality, love, innocence, and spiritual elevation [5]. The rhetorical theory of antiquity makes a division between the metaphors of the first group and the metaphors in the second group; the first one is the conventional metaphors, where the meaning of the flower has become established culturally, and the second one is the novel metaphors, where poets create unexpected connections and thus compelling the readers to see the familiar objects in a new light. The contemporary poets, very often go for both practices at once, not only drawing upon the traditional floral symbolism but also breaking the existing associations to create new meanings [6]. The rose, for example, through the ages, has been and still is associated with love and beauty; however, at the same time, the rose is being endowed with new metaphorical dimensions in today's poetry that include ironic commentaries on romantic conventions and political symbolism, among others. Cognitive poetics studies point out that the strength of

flower metaphors lies in their connection to the human sensory experience, as readers seldom recall the flowers' sensory memories which help them to understand the metaphorical mappings [7]. This sensory perception possession of floral imagery, in contrast to that of more abstract metaphorical domains, enhances the emotional resonance of poets' flowers metaphors.

Results and Discussion. The examination of modern poetic works has brought to light several different trends in the metaphorical use of flower names, all of which signify the floral imagery's strong presence in today's literature. Modern poets make use of flowers' names to express their emotions, with the gentle nature of the flowers as a metaphor for the psychological vulnerability and the fleeting nature of the strong feeling. The metaphor of flowers as human emotional states works by a mechanism of selective attribute mapping, in which the traits of flowers like their short life span, sensitivity to weather, and beauty, are swapped with human experience to reveal the less accessible sides of emotional life that cannot be communicated directly.

A significant finding concerns the transformation of traditional flower symbolism in contemporary practice, where poets deliberately invoke established associations only to complicate or invert them, creating a dialogic relationship between classical and modern meanings. This technique demonstrates the self-reflexive quality of contemporary poetry, which often comments upon its own literary heritage while forging new expressive possibilities. The sunflower, traditionally associated with devotion and solar worship, appears in contemporary poetry as a metaphor for obsessive attention, artificial cheerfulness, or the exhausting demands of optimism in difficult circumstances, revealing how modern poets reimagine inherited symbols to address contemporary concerns. The analysis further reveals that flower names function not only as individual metaphors but also as components of extended metaphorical networks, where multiple floral references within a single poem create complex systems of meaning that illuminate central themes from various angles [8]. Contemporary poets demonstrate sophisticated awareness of these intertextual dimensions, consciously positioning their floral imagery in relation to literary traditions spanning multiple cultures and historical periods. The metaphorical use of artificial flowers in contemporary poetry represents a particularly significant development, as synthetic blossoms serve as vehicles for exploring themes of authenticity, imitation, and the relationship between nature and technology in modern life. Poets employing artificial flower imagery engage with fundamental questions about the nature of beauty, the value of permanence versus transience, and the human desire to preserve what is inherently ephemeral, demonstrating how floral metaphors continue to evolve in response to changing material and cultural conditions.

Conclusion. This investigation demonstrates that flower names retain their metaphorical potency in contemporary poetry, serving as versatile vehicles for expressing emotional, philosophical, and cultural meanings that resist direct articulation. Contemporary poets both preserve and transform traditional floral symbolism, creating a dynamic relationship between inherited associations and innovative metaphorical applications that reflects the broader tension between tradition and experimentation in modern literary practice. The findings confirm that floral metaphors derive their effectiveness from their grounding in sensory experience, their cultural resonance, and their capacity to bridge concrete and abstract domains of meaning. Future research should extend this analysis to include comparative studies across different linguistic and cultural traditions, examining how flower metaphors function within diverse poetic systems and how globalized literary culture influences the transmission and transformation of floral symbolism.

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The problem of archiving and preservation of film costumes

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Annotation

Film costumes are an integral part of film art, they play an important role not only in creating an image, but also in reflecting the historical era, national culture and artistic aesthetics. This article analyzes the main problems associated with archiving and preserving film costumes, their causes and modern solutions.

Keywords: film costumes, archiving, preservation, cultural heritage, costume design, restoration

Annotatsiya

Kino liboslari film san'atining ajralmas qismi bo'lib, ular nafaqat obrazni yaratishda, balki tarixiy davr, milliy madaniyat va badiiy estetikani aks ettirishda muhim ahamiyat kasb etadi. Ushbu maqolada kino liboslarini arxivlash va saqlash bilan bog'liq asosiy muammolar, ularning kelib chiqish sabablari hamda zamonaviy yechimlar tahlil qilinadi.

Kalit so'zlar: kino liboslari, arxivlash, saqlash, madaniy meros, kostyum dizayni, restavratsiya

Kinematografiya san'ati rivoji bilan bir qatorda kino liboslari ham badiiy va tarixiy ahamiyatga ega madaniy meros sifatida qaralmoqda. Har bir filmda qo'llanilgan libos muayyan davr ruhini, qahramon xarakterini va rejissyor g'oyasini ifodalaydi. Shu bois kino liboslarini to'g'ri arxivlash va saqlash masalasi bugungi kunda dolzarb muammolardan biri hisoblanadi.

Kino liboslarining tarixiy va madaniy ahamiyati. Kino liboslari orqali tomoshabinlar o'tmish davrlar kiyinish madaniyati, ijtimoiy tabaqalar farqi va milliy urf-odatlar bilan tanishadilar. Ayniqsa tarixiy va biografik filmlarda ishlatilgan liboslar ilmiy-tadqiqotlar uchun muhim manba bo'lib xizmat qiladi. Ularning yo'qolishi yoki shikastlanishi madaniy xotiraning yo'qolishiga olib keladi.

Kino liboslarini arxivlash jarayoni murakkab va ko'p bosqichli jarayon bo'lib, u bir qator tashkiliy, texnik hamda ilmiy muammolar bilan chambarchas bog'liq. Ushbu muammolarni o'z vaqtida aniqlash va bartaraf etish kino liboslarini madaniy meros sifatida saqlab qolishda muhim ahamiyat kasb etadi.

Materiallarning tez yemirilishi. Kino liboslari ko'pincha ipak, jun, paxta, shuningdek, sun'iy tolalardan tayyorlanadi. Ushbu matolar tashqi muhit ta'siriga juda sezgir bo'lib, noto'g'ri saqlash sharoitlarida tez yemiriladi. Yuqori namlik matolarda mog'or paydo bo'lishiga, past yoki juda yuqori harorat esa tolalarning mo'rtlashishiga olib keladi. Yorug'lik, ayniqsa to'g'ridan-to'g'ri quyosh nuri ranglarning xiralashishiga va mato tuzilmasining buzilishiga sabab bo'ladi. Bundan tashqari, chang va hasharotlar ham liboslarning jismoniy holatiga salbiy ta'sir ko'rsatadi.

Saqlash joylarining yetishmasligi. Ko'plab kino studiyalar va madaniy muassasalarda kino liboslarini saqlash uchun maxsus jihozlangan omborlar yetarli emas. Natijada liboslar tor xonalarda, ventilyatsiyasi yomon, harorat va namlik nazorati mavjud bo'lmagan joylarda saqlanadi. Bu esa liboslarning bukilib qolishi, shaklining buzilishi va mexanik shikastlanishiga olib keladi. Maxsus manekenlar, ilgichlar va saqlash qutilarining yetishmasligi ham muammoni yanada chuqurlashtiradi.

Tizimli kataloglashtirishning yo'qligi. Kino liboslarini arxivlashda muhim muammolardan biri — tizimli va raqamli kataloglashtirishning yetarli darajada yo'lga qo'yilmaganligidir. Ba'zi liboslar qaysi film uchun tayyorlangani, qaysi sahnalarda ishlatilgani yoki qaysi aktyor tomonidan kiyilgani haqida aniq hujjatlarsiz qolib ketadi. Natijada liboslarning tarixiy va badiiy qiymati pasayadi, ularni tadqiq qilish va ko'rgazmalarga tayyorlash qiyinlashadi. Zamonaviy arxiv tizimlarining yetishmasligi ma'lumotlarning yo'qolish xavfini oshiradi.

Moliyaviy va mutaxassislar yetishmasligi. Kino liboslarini saqlash va restavratsiya qilish jarayoni katta moliyaviy mablag' hamda yuqori malakali mutaxassislarni talab etadi. Afsuski, ko'plab

muassasalarda tekstil konservatsiyasi va kostyum restavratsiyasi bo'yicha mutaxassislar yetarli emas. Moliyaviy resurslarning cheklanganligi esa zamonaviy jihozlar xarid qilish, ilmiy tadqiqotlar o'tkazish va mutaxassislarni tayyorlash imkoniyatlarini kamaytiradi.

Saqlash va restavratsiya muammolari. Vaqt o'tishi bilan kino liboslari rangini yo'qotadi, choklari bo'shashadi, bezak elementlari ajralib ketadi yoki mexanik shikastlanadi. Restavratsiya jarayoni esa juda nozik va ilmiy asoslangan yondashuvni talab qiladi. Har bir libosning materiali, yoshi va tarixiy ahamiyati hisobga olinmasdan amalga oshirilgan restavratsiya ishlari libosning asl ko'rinishini buzishi yoki uning qiymatini pasaytirishi mumkin. Shu sababli restavratsiya jarayonida minimal aralashuv va hujjatlashtirish tamoyillariga qat'iy amal qilish zarur.

Bugungi kunda kino liboslarini saqlashda quyidagi yechimlar samarali hisoblanadi:

Raqamli arxivlash – liboslarni foto va video shaklda hujjatlashtirish

Maxsus saqlash sharoitlari – harorat va namlikni nazorat qiluvchi omborlar.

Muzey va ko'rgazmalar – liboslarni ommaga namoyish qilish orqali ularning qadriyatini oshirish.

Mutaxassislar tayyorlash – kostyum restavratsiyasi bo'yicha kadrlar yetishtirish.

Xulosa qilib aytganda, Kino liboslarini arxivlash va saqlash muammosi nafaqat texnik, balki madaniy ahamiyatga ega masaladir. Ushbu liboslar milliy va jahon kinematografiyasi tarixining muhim qismi hisoblanadi. Shuning uchun ularni ilmiy asosda saqlash, tizimli arxivlash va kelajak avlodga yetkazish muhim vazifalardan biridir.

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The Influence Of Social Pressure On Women's Consciousness In Sylvia Platt's Poetry

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Abstract

This article analyzes the complex relationship between social pressure and female psychology in the works of Sylvia Plath, a major representative of 20th-century American poetry. The focus of the study is on the internal changes of the lyrical heroine in the poet's works under the influence of traditional gender roles and patriarchal pressures established by society.

Keyphrases: Sylvia Plath, confessional poetry, social pressure, female psychology, patriarchal society, gender roles.

Annotatsiya

Ushbu maqolada XX asr Amerika she'riyatining yirik vakili Silviya Plat ijodida ijtimoiy bosim va ayol psixologiyasi o'rtasidagi murakkab aloqadorlik masalalari tahlil qilinadi. Tadqiqot markazida shoira asarlaridagi lirik qahramonning jamiyat tomonidan o'rnatilgan an'anaviy gender rollari va patriarxal bosimlar ta'sirida kechgan ichki o'zgarishlari yoritilgan.

Tayanch iboralar: Silviya Plat, 103onfessional she'riyat, ijtimoiy bosim, ayol psixologiyasi, patriarxal jamiyat, gender rollari.

Kirish

Adabiyot asrlar davomida inson ruhiyatining ko'zgusi bo'lib kelgan bo'lsa, unda ayol obrazi va ayol qismati masalasi hamisha markaziy o'rinlardan birini egallab kelgan. Biroq adabiy jarayonda ayollar mavzusining namoyon bo'lishi uzoq vaqt davomida muayyan ijtimoiy qoliplar va estetik me'yorlar doirasida cheklanib qoldi. Klassik adabiyotda ayol ko'pincha yo ideallashtirilgan ilhom parisi, yoki oilaviy qadriyatlarning sadoqatli himoyachisi sifatida tasvirlangan bo'lsa, modernizm va undan keyingi davrlarga kelib, bu yondashuv tubdan o'zgardi. Endilikda yozuvchilar ayol xarakterini yaratishda shunchaki tashqi go'zallik yoki ijtimoiy maqomga emas, balki uning ichki olamidagi evrilishlar, ongosti kechinmalari va jamiyat bilan to'qnashuv nuqtalariga asosiy e'tiborni qarata boshladilar.

Shu nuqtai nazardan, adabiyotda ayollar masalasi shunchaki mavzu emas, balki murakkab ijtimoiy-psixologik tizim sifatida namoyon bo'ladi. Yozuvchilar lirik qahramonning ichki ovozi eshittirish orqali o'quvchiga jamiyatning ko'rinmas tazyiqlarini va bu tazyiqlar ostida ayol shaxsiyatining qay darajada o'zgarishini yetkazib berishga intiladilar. Bu jarayonda ramzlar va metaforalardan foydalanish, qahramonning hissiy kechinmalarini ijtimoiy voqealar bilan parallel ravishda tasvirlash asarning badiiy qimmatini va ta'sirchanligini oshiruvchi asosiy omillardan sanaladi.

Asosiy qism

Adabiyotshunoslikda ayollar mavzusi va Silviya Plat ijodi ko'plab xorijiy va mahalliy tadqiqotchilarning diqqat markazida bo'lib kelmoqda. Plat she'riyati asosan "konfessional" (e'tirof) she'riyat yo'nalishining yorqin namunasi sifatida baholanadi va bu borada bir qator nufuzli olimlar izlanishlar olib borishgan.

Plat merosini tizimli o'rgangan tadqiqotchilar orasida Hezer Klark (Heather Clark) alohida ajralib turadi. Uning *"Red Comet: The Short Life and Blazing Art of Sylvia Plath"* asari shoira hayoti va ijodini ijtimoiy-madaniy kontekstda yoritgan eng mukammal biografik tadqiqotlardan

biri sanaladi¹. Shuningdek, feministik adabiyotshunoslik nuqtai nazaridan Linda Bundtzen² (Lynda K. Bundtzen) Plat she'rlaridagi ayol obrazini patriarxal tizimga qarshi isyon sifatida talqin qilgan. U shoira ijodidagi "ona", "umr yo'ldosh" va "ijodkor ayol" rollari o'rtasidagi ziddiyatlarni jamiyat tomonidan o'rnatilgan bosimning oqibati sifatida baholaydi.

Silviya Platning ijtimoiy bosim va ayol ruhiyati ziddiyatini eng mukammal ochib bergan asarlaridan biri "Tulips" ("Lolalar") she'ridir. Bu she'r shifoxona muhitida yozilgan bo'lsa-da, aslida u ayolning jamiyatdagi barcha majburiyatlaridan voz kechib, mutlaq sukunatga o'zligiga qaytish istagini ifodalaydi. "Tulips" ("Lolalar") she'ridan parcha:

"The tulips are too excitable, it is winter here.

Look how white everything is, how quiet, how snowed-in.

I am learning peacefulness, lying by myself quietly...

I am nobody; I have nothing to do with explosions³."

She'ning ilk misralarida qahramon *"I am nobody"* (Men hech kimman) deydi. Bu shunchaki tushkunlik emas, balki jamiyat unga yuklagan "rafiqa", "ona", "uy bekasi" sifatidagi mas'uliyatlardan charchash natijasidir. U shifoxonadagi oq muhitni (sukunatni) afzal ko'radi, chunki bu yerda undan hech kim hech narsa talab qilmaydi. Ijtimoiy bosim ayolning o'zligini shunchalik charchatganki, u hatto o'z ismini ham unutishni, "shaxs" bo'lmaslikni baxt deb biladi. She'rda ikki qarama-qarshi rang to'qnashadi: Oq va Qizil.

Oq rang - bu qahramon intilayotgan erkinlik, sukunat va ijtimoiy "yo'qlik".

Qizil lolalar - bu jamiyat, tiriklik, oilaviy majburiyatlar va og'riqli xotiralarning ramzi. Lolalarning "o'ta jo'shqin"ligi (too excitable) qahramonning tinchini buzadi. Ular ayolga uning tashqaridagi mas'uliyatlarini, uni kutayotgan ijtimoiy hayotni eslatadi. Ma'naviy bosim aynan shu lolalar timsolida namoyon bo'ladi - ular hatto shifoxonaning sokin xonasida ham ayolga "nafas olishga" qo'ymaydi.

She'ning keyingi qismlarida qahramon o'zining turmush o'rtog'i va bolalari aks etgan suratga ishora qiladi:

"My husband and child smiling out of the family photo;

Their smiles catch onto my skin, little smiling hooks."⁴

Bu yerda Plat "tabassum"ni "qarmoq" (hooks) deb ataydi. Bu juda kuchli metafora. Odatda baxt ramzi bo'lgan oilaviy tabassum lirik qahramon uchun uni erkinlikdan mahrum qiluvchi, uni "uyga", "majburiyatlarga" tortib ketuvchi kishan sifatida tasvirlanadi. Bu ijtimoiy bosimning ayol ongida naqadar chuqur va og'riqli ildiz otganini ko'rsatadi.

Plat tahlilida ayol ongi shunday bir nuqtaga keladiki, u uchun jamiyat kishanlaridan qutilishning mutlaq iloji yo'qday bo'lib qoladi. U lolalarni "dahshatli" deb biladi, chunki ular uni yashashga, ya'ni yana o'sha ijtimoiy qoliqlar ichiga qaytishga majbur qiladi.

Ushbu she'r tahlili Silviya Plat ijodida ijtimoiy bosim faqat tashqi tazyiq emas, balki ayolning ichki dunyosini egallab olgan, uni o'z uyida, o'z tanasida va hatto o'z oilasida ham "mahbus"dek his qilishga majbur etuvchi tizimni tasvirlaganini isbotlaydi. Lolalarning qizil rangi ayolning tomirlarida urayotgan hayotga emas, balki uni jismonan va ruhan holdan toydirgan ijtimoiy "shovqin"ga ishoradir.

Xulosa

Silviya Plat ijodida ijtimoiy bosim va ayol ongi o'rtasidagi munosabatlarni tadqiq etish natijasida xulosalar chiqarish mumkinki, Plat she'riyatida jamiyat tomonidan ayolga yuklangan an'anaviy gender rollari (rafiqa, ona, uy bekasi) lirik qahramon uchun himoya emas, balki uning shaxsiy "Men"ini yemiruvchi bosim manbai bo'lib xizmat qiladi. Shu bilan birga, shoira qo'llagan ranglar (oq va qizil), tibbiy instrumentlar va oilaviy ashyolar simvolikasi ayol ongining ichki og'riqlarini ifodalashda yuqori darajadagi badiiy vosita bo'lib xizmat qiladi. "Tulips" she'ridagi "oq sukunat" ijtimoiy shovqindan qochish ramzi bo'lsa, "qizil lolalar" uni erkinlikdan mahrum etuvchi ijtimoiy hayotning agressiv in'ikosidir.

¹ Clark, H. Red Comet: The Short Life and Blazing Art of Sylvia Plath. Knopf, 2020.

² Bundtzen, L. K. Plath's Incarnations: Woman and the Creative Process. University of Michigan Press, 1983.

³ Plath, S. The Collected Poems, Harper & Row, 1981, p-160

⁴ Plath, S. The Collected Poems, Harper & Row, 1981, p-160

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Интернет Как Пространство Языковой И Культурной Трансформации

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Современные исследования показывают, что влияние цифровых платформ на язык выходит далеко за пределы отдельных явлений вроде сокращений или появления новых слов. Анализ большого массива данных демонстрирует, что изменения в языке социальных сетей отражают более широкие закономерности человеческого поведения, а не случайные «ошибки» отдельных пользователей: при этом наблюдается сокращение длины текстов, снижение лексического богатства, но при этом постоянное появление новых слов и форм выражения. Это свидетельствует о том, что языковые инновации в сети – устойчивое явление, а не локальная аномалия [4].

Интернет – это не только технологическое чудо, но и сложная и динамическая социальная система, неразрывно связанная с языком. Стремительное распространение сети создало беспрецедентные возможности для языкового взаимодействия, стирая границы между традиционными способами коммуникации и формируя новые формы выражения. Развитие цифровых технологий оказало значительное влияние на социолингвистические процессы, изменяя языковую практику пользователей и формируя новые модели общения. Цифровая сфера представляет собой богатый ландшафт для социолингвистического исследования, требующий всестороннего анализа того, как язык адаптируется, эволюционирует и формирует социальную идентичность в этой уникальной среде.

Виртуальное взаимодействие стало основным каналом коммуникации для миллионов людей, что привело к появлению специфических языковых явлений, таких как дигитализация дискурса, гибридные формы письма и речевой синкретизм. Ключевой задачей анализа этих явлений можно считать систематизация языковых механизмов, позволяющих эффективно коммуницировать в цифровой среде, а также выявление социокультурных факторов, влияющих на эти процессы. Особое внимание уделяется работам Д. Кристала, С. Херринг, Е. Земской и Л. Крысина, рассматривающих язык Интернета как особую форму современной речи.

Анализ интернет-коммуникации показывает, что цифровая среда способствует росту языковой вариативности. Одной из наиболее значимых тенденций является появление новых языковых разновидностей с собственным словарным запасом, грамматикой и стилистикой. Интернет-сленг, аббревиатуры, акронимы и нестандартные графические формы (например, использование латиницы и эмодзи) становятся не только средством экономии времени, но и маркерами социальной принадлежности. По данным исследований эти формы активно развиваются в многоязычных цифровых сообществах, включая русско- и узбекоязычные сегменты сети.

Важным аспектом интернет-коммуникации является её влияние на языковую идентичность. Цифровые платформы становятся пространством самопрезентации, где выбор языковых средств помогает пользователю обозначить культурную принадлежность и социальную позицию. В онлайн-среде активно проявляются так называемые «сетевые диалекты» – речевые формы, характерные для отдельных сообществ. Например, в геймерских чатах формируется особый жаргон («GG», «noob», «afk»), а в блогосфере – индивидуализированные стили, отражающие самопозиционирование автора.

Наряду с текстовыми инновациями современные исследования фиксируют развитие мультимодальных языковых практик, где текст сочетается с визуальными и

аудиальными элементами. Эмодзи, GIF-анимации и короткие видеоклипы становятся частью грамматики цифрового дискурса, выполняя функции интонации, пауз и эмоциональных усилителей. Работы М. Кресс и Т. ван Левена (2001) [3] и исследования на платформе *ResearchGate* (2024) [5] подтверждают, что мультимодальность стала неотъемлемым элементом сетевой коммуникации, формирующей новую норму письменной речи.

Кроме того, влияние цифровой среды распространяется и на традиционную речь вне Интернета. Корпусные исследования показывают, что молодежные речевые модели, распространенные в соцсетях, постепенно проникают в устную и письменную коммуникацию, включая образовательные и деловые контексты. Это свидетельствует о том, что интернет-язык перестает быть маргинальным и становится частью общей языковой практики.

Современная интернет-коммуникация также связана с вопросами языковой политики и цифровой грамотности. Развитие искусственного интеллекта, автоматического перевода и генерации текста ставит перед лингвистикой новые задачи: как сохранить разнообразие языков, этичность общения и критическое мышление. Исследователи отмечают, что медиаграмотность – одна из ключевых компетенций XXI века, требующая умения взаимодействовать в многоязычной и межкультурной среде.

Глобализация и локализация языка в сети формируют двойственную тенденцию. С одной стороны, английский язык сохраняет доминирующее положение в цифровом пространстве, обеспечивая универсальность коммуникации. С другой – локальные языки адаптируются к интернет-среде, создавая уникальные гибридные формы: узбекско-русско-английские посты в Telegram или Instagram, мемы и сленг на основе местных реалий. Эти процессы подтверждают устойчивое взаимодействие глобальных и локальных языковых трендов.

Таким образом, социолингвистические аспекты интернет-коммуникации свидетельствуют о глубокой трансформации языковой практики. Интернет способствует языковой гибридизации, формированию новых идентичностей и расширению средств выражения. Язык цифровой эпохи – это динамичный организм, в котором инновации и традиции сосуществуют, отражая культурное многообразие и социальную креативность современного общества.

Кроме того, современные исследования отмечают, что языковые изменения, вызванные социальными сетями, распространяются не только в онлайн, но и в традиционных сферах — в устной и письменной речи за пределами сети. Анализ показывает, что такие явления, как фонетическое написание, аббревиатуры, мемы и заимствования, постепенно переходят в повседневное общение, особенно среди молодёжи, указывая на устойчивый процесс языковой эволюции, вдохновлённый цифровой средой.

Исследования также фиксируют, что влияние социальных сетей на язык имеет как позитивные, так и негативные последствия. Социальные сети расширяют языковую практику и создают новые коммуникативные стратегии, но они также могут способствовать сокращению навыков формального письма и затруднять понимание в межкультурной коммуникации, что требует развития медиаграмотности и сознательного подхода к языковой практике.

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Структурно Семантические Особенности Русских Фразеологизмов И Полисемия В Когнитивном Аспекте

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Фразеологизм – носитель социокультурной информации, средство, на основе которого можно познать историю, культуру и традиции любой нации. Изучение характера и особенностей фразеологической семантики относят к числу проблем, вокруг которых еще возникают споры. Бесспорно, фразеология придает языку яркость, разнообразность и национальный колорит, который отличает один язык от другого. Структура фразеологических единиц в современном русском языке включает в себя определенные компоненты – лексемы. В составе фразеологических единиц с частично переносным смыслом лексемы являются просто словами. Актуальность этой темы определяется тем, что значимость русского языка в сегодняшнем мире значительно усилилась. Фразеологические обороты имеют широкое употребление в разговорном стиле, в художественных произведениях и публицистике. Фразеология является достаточно молодой лингвистической наукой. У современных ученых нет единого определения фразеологии и понятия фразеологической единицы. Это говорит о недостаточной разработанности данного вопроса. Над проблемой изучения фразеологических единиц работали многие известные ученые-лингвисты. Среди ученых, внесших вклад в изучение фразеологии, можно отметить В.В. Виноградова, Н.М. Шанского, А.И. Смирницкого, В.Н. Телия, А.В. Кунина и других. Фразеология возникла в русском языкознании в 50-х годах XX столетия и неразрывно связана с именем академика В.В. Виноградова (1895- 1969г.г.). Именно Виноградов заложил основы научной разработки фразеологии как самостоятельной науки. По определению В. Виноградова фразеологические единицы – это «устойчивые словесные комплексы, противопоставленные свободным синтаксическим сочетаниям как готовые языковые образования, не создаваемые, а лишь воспроизводимые в речи». В своём определении Виноградов противопоставляет фразеологические единицы свободным словосочетаниям. В лингвистике фразеологизмы классифицируют по самым разнообразным признакам. В. В. Виноградов предложил одну из наиболее известных и распространенных в лингвистике классификаций, основанную на различной степени идиоматичности (немотивированности) компонентов в составе фразеологизма. Выделяются три типа фразеологизмов фразеологические сращения (заморить червячка), фразеологические единства (остаться с носом), фразеологические сочетания (закадычный друг). Эту классификацию фразеологизмов часто дополняют, выделяя за Н. М. Шанским так называемые фразеологические выражения. Известно, что характерной чертой фразеологических единиц является их монолитность, устойчивость и неизменяемость. Устойчивости составной профессиональной единицы заключается в том, что между языковой формой и выражаемым ею значением сохраняется четкое и конкретное соответствие. Проблема семантических категорий во фразеологии как аспект исследования семантических связей внутри системных отношений языковых единиц является одной из основных проблем семантики. Семантическое поле выступает как объединение единиц семантического уровня и характеризуется относительной автономностью и непрерывностью смыслового пространства. Семантическое поле представляет собой совокупность явлений действительности, которая имеет в языке соответствие в виде тематически объединенной совокупности лексических единиц. Большинство фразеологических единиц по происхождению – народные метафоры и сравнения, части пословиц и поговорок. Образные представления, выраженные этими

средствами, отражают какие-либо факты жизни и быта, характеризуют самого человека и его бытие. Полисемия (многозначность) – способность слова иметь несколько (два и более) значений. Многозначность присуща существительным, глаголам, причастию. Лексическая полисемия – одно слово служит для обозначения нескольких предметов или явлений. Пример: часть тела (голова человека), начальник, руководитель (голова компании), начало (голова поезда). Эти примеры показывают, как одно слово может приобретать разные значения, сохраняя при этом определенную связь между ними, что и является полисемией. О значении слова легко можно догадаться по контексту. Полисемия фразеологизмов в сопоставлении с полисемией слов еще не служила предметом монографического изучения. Фразеологическое значение (ФЗ) позволяет по-новому посмотреть на природу фразеологического значения и его семантическое развитие. Наиболее активно развивают многозначность как свободные, так и связанные глагольные ФС из тематических групп, обозначающих различные движения частей тела человека, разные виды деятельности человека, процесс перемещения в пространстве, его фазы и особенности, реалии повседневной жизни людей, традиции и обычаи. Принцип антропоморфизма в этом процессе, как и во многих других языковых процессах, очевиден. Последовательный способ развития одного фразеологического значения из другого вполне соотносим с таким же способом развития лексических значений у одной лексемы. Параллельный способ развития ФЗ у одного и того же сочетания лексем имеет отличия от развития многозначности слова.

Таким образом, проблемы универсального определения ФЕ и критерии их классификации до сих пор остаются открытыми вопросами и представляют большой интерес для лингвистов. Использование предложений с фразеологизмами в речи и письме может значительно обогатить языковое выражение, придавая ему выразительности и эмоциональной насыщенности. Благодаря многозначности фразеосочетаний вербализуется большое число концептов из сферы человеческих эмоций, интеллекта, свойств и качеств людей, их поведения, образа жизни. Элементы национального сознания чаще всего сохраняются во фразеологическом образе, поскольку он рождается на основе каких-либо реалий, известных всему народу, отражающих его историю, установившиеся обычаи и традиции, духовную сферу.

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Особенности Рекламы Как Функционального Варианта Речи

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Аннотация

Данная статья посвящена комплексному рассмотрению рекламы как многопланового явления, оказывающего существенное влияние на различные аспекты современной жизни. Анализируются различные подходы к определению рекламы, начиная от словарных дефиниций и заканчивая более развернутыми научными трактовками. Особое внимание уделяется лингвистическому аспекту, где реклама рассматривается как функциональный вариант речи, обладающий специфическими стилеобразующими чертами и языковыми средствами, стимулирующими речевую деятельность и торговлю. Подчеркивается необходимость научного подхода к рекламной коммуникации для достижения ее максимальной эффективности.

Ключевые слова: реклама, функциональный вариант речи, определение рекламы, коммуникация, массовое сознание, лингвистика, психология рекламы, социокультурное влияние, экономическая значимость.

Современные исследования предлагают множество различных подходов к толкованию термина «реклама». В «Толковом словаре русского языка» С.И. Ожегова и Н.Ю. Шведовой дано следующее определение: «Реклама» – «1. Оповещение различными способами для создания широкой известности, привлечения потребителей, зрителей... 2. Объявление с таким оповещением...» [6].

В книге А. Дейяна «Реклама» содержится более подробное определение данного термина: «Реклама представляет собой платное, одностороннее и анонимное обращение, осуществляемое через средства массовой информации и другие виды коммуникации, с целью рекламирования какого-либо товара, бренда, компании (дела, кандидата, правительства)» [1].

Н.Н. Кохтев определяет рекламу как использование различных методов для распространения информации с целью обеспечить широкую известность о каких-либо сущностях, предоставить информацию о товарах и услугах для стимулирования их продажи и активизации спроса, а также для привлечения активного участия людей в выдающихся событиях в экономической, культурной и политической сферах [2].

Рекламная деятельность как явление может быть рассмотрена с различных перспектив: экономической, технологической, политической, социологической, психологической, коммуникативной и лингвистической. С экономической точки зрения реклама рассматривается как разновидность бизнеса, направленная на создание и производство различных форм рекламной продукции.

С точки зрения психологии, реклама является формой коммуникации, целью которой является убеждение, поскольку она оказывает определенное воздействие на слушателя или зрителя. Весь мир проявляет пристальное внимание к рекламе по мнению А. Менегетти, в основном потому, что «ее создатели получают доступ к лидерству, всеобщему вниманию и ранее невиданному превосходству – что означает господство над психологией, культурой...» [5].

В социокультурных исследованиях рекламная деятельность выполняет роль психологической основы формирования новых форм культурной среды, социального мифотворчества и системы культурных норм и ценностей. «Как массовое общественное явление рекламная деятельность несет в себе огромный потенциал, способный положительно влиять как на отдельного человека, так и на общество в целом» [4].

С коммуникативной точки зрения, реклама – это особый вид коммуникации, который характеризуется функциями передачи информации и оказания воздействия, а также набором отличительных черт, таких как наличие отправителя и получателя информации, неличный характер общения, специфические особенности кодирования/декодирования информации, присутствие различных каналов связи, определенных ограничений и помех. В лингвистике рекламу рассматривают как один из функциональных вариантов речи, который обладает определенными стилиобразующими чертами и специфическими языковыми средствами. «Реклама не только двигатель торговли, но также стимулирует и поддерживает речевую деятельность» [3].

Подводя итог всему вышесказанному, можно сделать вывод, что реклама является многоплановым явлением, которое оказывает значительное влияние на различные аспекты нашей жизни и играет важную роль в развитии современной культуры. Необходимость использования научных принципов в ее функционировании свидетельствует о ее экономической и социальной значимости. Без применения достижений и инструментария различных научных дисциплин невозможно достичь максимальной эффективности в рекламной коммуникации. Особое место занимает теория коммуникации, которая изучает закономерности формирования и функционирования человеческого общения.

Коммуникация является сложным деятельностью явлением, которое исследуется с помощью смежных с лингвистикой наук, таких как социолингвистика, психолингвистика и прагматическая лингвистика. Реклама, как специфическая форма коммуникации, тесно связана с этими научными направлениями, а изучение рекламы должно учитывать междисциплинарные связи лингвистики, социологии, психологии и прагматики.

С точки зрения теории коммуникации, реклама является способом передачи информации от продавца к покупателю. Она представляет собой коммуникативный акт, включающий различные оценки со стороны участников и наблюдателей, а также имеющий прогнозируемые и фактические последствия. Реклама регулирует коммуникативную ситуацию «продавец – покупатель», в которой адресат отвечает на рекламу, покупая то, что она предлагает.

Реклама, в свою очередь, представляет собой дисконтатную форму общения, в которой информационное взаимодействие происходит между незнакомыми людьми в устной или письменной форме. Структура рекламной коммуникации включает в себя источник сообщения или отправителя информации, которая кодируется и передается по каналам связи до адресата. Важно также учесть наличие определенных ограничений (фильтров) и случайных помех на каждом этапе коммуникации, которые могут повлиять на реакцию получателя. Сам факт достижения сигнала, отправленного источником, потенциальным покупателем определяется как рекламный контакт. Рекламный текст (послание) является основным инструментом и носителем информации, эмоционального воздействия и формирования психологической установки на целевую аудиторию. Деятельность автора текста направлена на расширение информированности адресата. Реклама, в свою очередь, представляет собой дисконтатную форму общения, в которой информационное взаимодействие происходит между незнакомыми людьми в устной или письменной форме. Структура рекламной коммуникации включает в себя источник сообщения или отправителя информации, которая кодируется и передается по каналам связи до адресата. Важно также учесть наличие определенных ограничений (фильтров) и случайных помех на каждом этапе коммуникации, которые могут повлиять на реакцию получателя. Сам факт достижения сигнала, отправленного источником, потенциальным покупателем определяется как рекламный контакт. Рекламный текст (послание) является основным инструментом и носителем информации, эмоционального воздействия и формирования психологической установки на целевую аудиторию. Деятельность автора текста направлена на расширение информированности адресата.

Таким образом, реклама играет важную роль в нашей жизни и является неотъемлемой частью современной культуры, а ее изучение требует учета различных научных подходов и дисциплин.

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