INTERNATIONAL SCIENTIFIC ONLINE CONFERENCE

Global Conference Hub



INTERNATIONAL MULTIDISCIPLINARY SCIENCE CONFERENCE

ITALY

http://globalconferencehub.org

INTERNATIONAL MULTIDISCIPLINARY SCIENCE CONFERENCE: a collection scientific works of the International scientific conference (October, 2026) – Italy: 2026. Volume-01, Issue 10, 2026

Languages of publication: English, Russian, and Uzbek

This collection includes research papers presented by scientists, graduate students, and students at the International Scientific Online Conference "**INTERNATIONAL MULTIDISCIPLINARY SCIENCE CONFERENCE**" held in Italy on October, 2026.

The conference proceedings are intended for researchers and academic staff of higher education institutions. They may be used for teaching and research purposes, including postgraduate education and preparation for bachelor's and master's degree programs.

All submitted articles underwent peer review by qualified experts. The materials are published in accordance with copyright regulations. The authors are fully responsible for the accuracy of the content, research findings, and any errors.

Quantumqill Research Press PVT LTD, 2026

TYPOLOGICAL SIMILARITIES IN THE PLOT AND CHARACTER SYSTEMS OF THE EPICS "RAMAYANA" AND "GILGAMESH"

Shamsiddinova Sitora Badriddinovna

Doctor of Philosophy (PhD) in Philological Sciences, Chief Specialist of the Education Quality Assurance Sector, "Juybori Kalon" Women's Secondary Specialized Islamic Educational Institution

Abstract

This thesis provides a comparative analysis of the typological similarities in the plot structure and character systems of the epics "Ramayana" and "Gilgamesh." The aim of the study is to identify common features in the artistic representation of the motifs of heroism, journey, trial, separation, and human responsibility in these works, which developed in different historical and cultural environments. Based on a comparative-typological approach, the study examines the actions of the main heroes, their relationships with supporting and opposing characters, and the role of trials in the development of the plot.

The characters of Rama and Gilgamesh are compared in terms of their status as rulers, extraordinary abilities, and encounters with complex trials. In both epics, journey and separation are interpreted as important plot factors that direct the heroes' actions and reveal their moral character. In the "Ramayana," Rama's exile, separation from Sita, and his efforts to bring her back are associated with issues of duty, loyalty, and justice. In the "Gilgamesh," friendship with Enkidu and the search following his death give rise to reflections on the limitations of human life, loss, and the meaning of existence. On this basis, the study demonstrates how similar motifs perform different ideological functions in each work.

The comparison of the character systems focuses on the role of companions and helpers in the heroes' destinies, conflicts with opponents, and relationships between human and divine forces. Typological similarities are interpreted not as evidence of direct historical influence between the epics, but as manifestations of common artistic principles characteristic of epic thought. The thesis emphasizes the need to examine these commonalities together with the differences in the religious and philosophical content, cultural environment, and heroic ideals of the works.

Keywords

"Ramayana", "Gilgamesh", comparative-typological analysis, plot, character system, epic hero, journey motif, separation motif, heroic trial.

"RAMAYANA" VA "GILGAMISH" DOSTONLARINING SYUJET VA OBRAZLAR TIZIMIDAGI TIPOLOGIK O'XSHASHLIKLAR

Shamsiddinova Sitora Badriddinovna

Filologiya fanlari böyicha falsafa doktori (PhD) "Jo'ybori Kalon" ayol-qizlar örta maxsus islom ta'lim muassasasi ta'lim sifatini ta'minlash sektori bosh mutaxassisi

Annotatsiya

Ushbu tezisda "Ramayana" va "Gilgamish" dostonlarining syujet qurilishi hamda obrazlar tizimidagi tipologik o'xshashliklar qiyosiy tahlil qilinadi. Tadqiqotning maqsadi turli tarixiy-madaniy muhitlarda shakllangan mazkur asarlarda qahramonlik, safar, sinov, ayriliq va insoniy mas'uliyat motivlarining badiiy ifodalanishidagi umumiy jihatlarni aniqlashdan iborat. Tahlilda qiyosiy-tipologik yondashuv asosida bosh qahramonlarning faoliyati, yordamchi va qarama-qarshi obrazlar bilan munosabatlari hamda syujet rivojida sinovlarning o'rni ko'rib chiqiladi.

Rama va Gilgamish obrazlari hukmdorlik mavqeyi, favqulodda imkoniyatlari va murakkab sinovlarga duch kelishi jihatidan qiyoslanadi. Safar va ayriliq har ikki dostonda qahramonning harakatlarini yo'naltiruvchi hamda uning ma'naviy qiyofasini

ochuvchi muhim syujet omillari sifatida talqin etiladi. “Ramayana”da Ramaning surguni, Sitadan ayrilishi va uni qaytarishga intilishi burch, sadoqat hamda adolat masalalari bilan bog‘lanadi. “Gilgamish”da esa Enkidu bilan do‘stlik va uning o‘limidan keyingi izlanishlar inson hayotining cheklanganligi, yo‘qotish va umr mazmuni haqidagi mushohadalarni yuzaga chiqaradi. Shu asosda o‘xshash motivlarning har bir asarda turlicha g‘oyaviy vazifa bajarishi yoritiladi.

Obrazlar tizimini qiyoslashda hamrohlar va yordamchilarning qahramon taqdiridagi ishtiroki, raqiblar bilan to‘qnashuv hamda insoniy va ilohiy kuchlar o‘rtasidagi munosabatlarga e’tibor qaratiladi. Tipologik o‘xshashliklar dostonlar o‘rtasidagi bevosita tarixiy ta’sirning isboti sifatida emas, balki epik tafakkurga xos umumiy badiiy tamoyillarning namoyon bo‘lishi sifatida baholanadi. Tezisda ushbu umumiyliklarni asarlarning diniy-falsafiy mazmuni, madaniy muhiti va qahramonlik idealidagi farqlar bilan birgalikda o‘rganish zarurligi ta’kidlanadi.

Kalit so‘zlar: “Ramayana”, “Gilgamish”, qiyosiy-tipologik tahlil, syujet, obrazlar tizimi, epik qahramon, safar motivi, ayriliq motivi, qahramonlik sinovi.

Kirish

Jahon adabiyotida qahramonlik dostonlari xalqning tarixiy xotirasi, axloqiy qarashlari va inson haqidagi tasavvurlarini ifodalovchi muhim badiiy manbalardir. Ularda qahramonning jasorati bilan birga uning jamiyat oldidagi burchi, yaqinlari bilan munosabati va sinovlarga munosabati ham tasvirlanadi. Turli madaniy muhitlarda yaratilgan dostonlarni qiyoslash epik tafakkurga xos umumiy tamoyillarni aniqlash, o‘xshash syujet motivlarining turlicha badiiy vazifalarini tushuntirish imkonini beradi. Shu jihatdan “Ramayana” va “Gilgamish” dostonlarining syujet hamda obrazlar tizimini o‘rganish qiyosiy adabiyotshunoslik uchun ahamiyatlidir.

“Ramayana”da Ramaning hayot yo‘li surgun, ayriliq, kurash va qaytish voqealari orqali yoritiladi. Qahramonning xatti-harakatlari burchga sodiqlik, oilaviy munosabatlar

va hukmdorlik mas’uliyati bilan bog‘lanadi. “Gilgamish” dostonida esa bosh qahramonning Enkidu bilan do‘stligi, birgalikdagi jasoratlari va do‘stining o‘limidan keyingi izlanishlari syujetning asosiy yo‘nalishlarini tashkil etadi. Bu voqealar Gilgamishning kuch-qudratga munosabatini o‘zgartirib, uni o‘lim, hayotning cheklanganligi va inson imkoniyatlari haqida o‘ylashga undaydi. Har ikki asarda tashqi voqealar qahramonning ichki kechinmalari va qarashlarini ochishga xizmat qiladi.

Dostonlar o‘rtasidagi tipologik yaqinlik, avvalo, qahramonning odatiy hayot doirasidan chiqishi, murakkab sinovlardan o‘tishi va boshqa obrazlar bilan munosabatlari orqali namoyon bo‘ladi. Bosh qahramonlar atrofida hamrohlar, yordamchilar, raqiblar va ilohiy kuchlar ishtirok etadi. Biroq obrazlarning syujetdagi vazifasi o‘xshash bo‘lishi ularning mazmunan tengligini anglatmaydi. Masalan, Ramaning Sitadan ayrilishi bilan Gilgamishning Enkiduni yo‘qotishi qahramon harakatini kuchaytiruvchi omillar bo‘lsa-da, birinchisi yorini qaytarish va sadoqat masalalarini, ikkinchisi esa qaytarib bo‘lmaydigan yo‘qotish hamda o‘limni anglash muammosini yuzaga chiqaradi.

Mazkur mavzuni o‘rganishda tashqi syujet o‘xshashliklarini qayd etish bilan cheklanmasdan, ularning sababini va badiiy vazifasini aniqlash zarur. Safar, kurash yoki ayriliq kabi motivlar qaysi voqeadan kelib chiqishi, qahramonning qarorlariga qanday ta’sir qilishi va syujet yakunida qanday mazmun kasb etishi asosida qiyoslanishi lozim. Shuningdek, har bir dostonning madaniy muhiti va qahramonlik haqidagi tasavvurlari hisobga olinishi kerak. Bunday yondashuv umumiy epik belgilarni asarlarning o‘ziga xos xususiyatlari bilan uyg‘un holda talqin qilishga yordam beradi.

Tezisning maqsadi — “Ramayana” va “Gilgamish” dostonlarida syujet rivoji hamda obrazlar tizimini tashkil etuvchi tipologik o‘xshashliklarni aniqlash va ularning badiiy vazifalarini qiyosiy yoritishdir. Ushbu maqsad asosida safar, sinov va ayriliq motivlari, bosh qahramonning hamrohlar va raqiblar bilan munosabatlari hamda

kechinmalarining syujetdagi o‘rni tahlil qilinadi. Tadqiqotda qiyosiy-tipologik va matniy tahlil usullariga tayaniladi; aniqlangan o‘xshashliklar bevosita tarixiy ta’sir haqidagi xulosa uchun emas, epik tasvirning umumiy tamoyillarini tushuntirish uchun qo‘llanadi.

Asosiy qism

“Ramayana” va “Gilgamish” dostonlarining tipologik o‘xshashliklari qahramonning safarga chiqishi, sinovlardan o‘tishi, yaqin insonidan ayrilishi va hayotiy tajriba orttirishi orqali namoyon bo‘ladi. Ushbu motivlar har ikki asarda voqealarni bog‘lovchi vosita bo‘lish bilan birga, bosh qahramonning maqsadi va ma’naviy qiyofasini ochishga xizmat qiladi. Biroq ularning syujetdagi o‘rni va mazmuni bir xil emas. Qiyosiy tahlilda umumiy motivning mavjudligidan tashqari, uning qanday sharoitda yuzaga kelishi va qanday yakun topishi ham hisobga olinishi lozim.

Safar va sinov motivlarining syujetdagi o‘rni

Har ikki dostonda safar qahramonni odatiy hayot muhitidan uzoqlashtirib, yangi munosabatlar va murakkab tanlovlar bilan yuzlashtiradi. “Ramayana”da Ramaning surgunga ketishi uning hukmdorlik mavqeyidan vaqtincha ayrilishi bilan bog‘liq. O‘rmondagi hayot qahramonning burchga sodiqligi, sabr-toqati va yaqinlari oldidagi mas’uliyatini namoyon etadi. Sitaning olib qochilishi esa syujetga yangi yo‘nalish berib, uni izlash, ittifoqchilar topish va Ravana bilan kurashish voqealarini yuzaga chiqaradi. Shu tariqa safar dastlab burchni bajarish, keyinchalik esa ayriliqni bartaraf etish maqsadi bilan davom etadi.

“Gilgamish” dostonida safar motivi qahramonning maqsadlari o‘zgarishiga muvofiq rivojlanadi. Gilgamish va Enkiduning Humbabaga qarshi yurishi jasorat ko‘rsatish va shuhrat qozonishga intilish bilan bog‘liq. Enkiduning o‘limidan keyingi safar esa boshqa mazmun kasb etadi: Gilgamish o‘zining ham o‘limga mahkum ekanini anglab, abadiy hayot imkoniyatini izlay boshlaydi. Demak, bir dostonda safar burch va

sadoqatni amalga oshirish vositasi bo‘lsa, ikkinchisida qahramonning o‘z mavjudligini tushunishga intilishi bilan bog‘lanadi.

Tipologik jihatdan ikkala asarda ham safar sinovlar ketma-ketligini tashkil etadi. Qahramon yo‘l davomida to‘siqlarni yengadi, yordam oladi va o‘z imkoniyatlari chegarasini anglaydi. Bunda sinov faqat jangovar kuchni tekshirish bilan cheklanmaydi. U qahramonning qaror qabul qilishi, hamkorlikka tayyorligi, sadoqati va yo‘qotishga munosabatini ham ochib beradi.

Bosh qahramonlarning hukmdorlik va mas’uliyat xususiyatlari

Rama va Gilgamish obrazlarini yaqinlashtiruvchi belgilaridan biri ularning hukmdorlik bilan bog‘liq mavqeyidir. Har ikki qahramonning shaxsiy hayoti jamoa manfaatlari va hokimiyat mas’uliyatidan ajralgan holda tasvirlanmaydi. Ularning qarorlari yaqinlari taqdiriga ham, kengroq ijtimoiy muhitga ham ta’sir ko‘rsatadi. Shu sababli bu obrazlarni faqat kuchli jangchi sifatida talqin qilish yetarli emas.

Rama obrazida burchga sodiqlik yetakchi o‘rin tutadi. Uning surgunni qabul qilishi shaxsiy manfaatdan tashqari oilaviy va axloqiy majburiyatlarni ham hisobga olish bilan bog‘liq. Qahramonning jasorati ushbu mas’uliyat doirasida namoyon bo‘ladi. Ayni paytda Ramaning shaxsiy tuyg‘ulari va hukmdorlik vazifalari o‘rtasidagi murakkab munosabatlar obrazning ichki ziddiyatlarini yuzaga chiqaradi.

Gilgamish obrazida esa hukmdorlik mas’uliyatini anglash jarayoni qahramonning o‘zgarishi orqali ochiladi. Doston boshida uning kuchi va hokimiyati Uruk aholisi bilan ziddiyatga sabab bo‘ladi. Enkidu bilan uchrashuv, do‘stlik va ayriliq Gilgamishning hayotga munosabatini o‘zgartiradi. Shu jihatdan Rama ko‘proq burchni bajarish jarayonida sinalsa, Gilgamish o‘z kuchi va insoniy cheklanganligini anglash orqali tajriba orttiradi. Bu farq ularning tipologik yaqinligini inkor etmaydi, balki qahramonlikning turli badiiy talqinlarini ko‘rsatadi.

Hamroh va yordamchi obrazlarning vazifasi

Har ikki dostonda bosh qahramonning faoliyati boshqa obrazlar bilan munosabatlari orqali rivojlanadi. Hamrohlar va yordamchilar voqealarda ishtirok etish bilan birga, qahramonning muayyan fazilatlarini yuzaga chiqaradi. Ular orqali sadoqat, do‘stlik, ishonch va hamkorlikning ahamiyati ochiladi.

“Ramayana”da Lakshmananing Rama bilan surgunga borishi birodarlik sadoqatini ifodalaydi. Hanumanning Sitani izlash va unga xabar yetkazishdagi faoliyati esa syujetning keyingi rivoji uchun muhim ahamiyatga ega. Sugriva bilan ittifoq qahramon maqsadiga erishishda jamoaviy harakatning o‘rnini ko‘rsatadi. Bunda yordamchi obrazlarning vazifalari bir-biridan farqlanadi: ayrimlari doimiy hamrohlik qilsa, boshqalari izlash, axborot yetkazish va kurashni tashkil etishda qatnashadi.

“Gilgamish”da Enkidu bosh qahramonning do‘sti va hamrohi sifatida alohida mavqega ega. Uning Gilgamish bilan munosabati dastlab qarama-qarshilikdan boshlanib, keyinchalik yaqin do‘stlikka aylanadi. Enkidu Gilgamishning kuchiga munosib sherik bo‘lish bilan birga, uning hissiy dunyosini ham ochadi. Do‘stining o‘limi bosh qahramonning keyingi izlanishlariga sabab bo‘ladi. Shu bois Enkiduni “Ramayana”dagi biror yordamchi obrazning to‘liq muqobili sifatida ko‘rsatish to‘g‘ri emas. Ular umumiy syujet vazifalari bo‘yicha qiyoslanishi mumkin, biroq har birining badiiy o‘rni mustaqildir.

Ayriliq motivi va qahramonning ichki kechinmalari

Ayriliq har ikki dostonda voqealar rivojini keskin o‘zgartiruvchi motivdir. “Ramayana”da Sitaning olib qochilishi Rama uchun shaxsiy iztirob va faol harakatning boshlanishiga aylanadi. Uni izlash jarayonida qahramonning sadoqati, qat’iyati va kurashga tayyorligi namoyon bo‘ladi. Ayriliqni bartaraf etishga intilish syujetning muhim harakatlantiruvchi kuchidir.

“Gilgamish”da Enkiduning o‘limi qaytarib bo‘lmaydigan yo‘qotishni ifodalaydi. Gilgamishning qayg‘usi asta-sekin o‘z o‘limidan qo‘rqish va abadiy hayotni izlashga

aylanadi. Bu holatda ayriliq do‘stni qaytarish maqsadidan ko‘ra inson umrining mohiyatini anglash muammosini yuzaga chiqaradi. Qahramon tashqi raqibga qarshi kurashdan hayotning muqarrar chegaralari haqida mushohada qilishga o‘tadi.

Demak, ayriliq motivining tipologik umumiyligi uning qahramonni yangi harakatga undashi va ichki kechinmalarini chuqurlashtirishida namoyon bo‘ladi. Farq esa yo‘qotishning tabiatidadir: Sitadan ayrilish uni izlash va qaytarish imkoniyati bilan bog‘liq, Enkiduning o‘limi esa insonning qaytarib bo‘lmaydigan yo‘qotishga munosabatini ochadi.

Raqib obrazlar va kurashning badiiy mazmuni

Dostonlarda raqib obrazlar qahramonning jasoratini namoyon etish uchun muhim sharoit yaratadi. “Ramayana”da Ravana bilan to‘qnashuv Sitaning olib qochilishi va uni qaytarish voqealari bilan bevosita bog‘liq. Shu sababli kurash shaxsiy ayriliqni bartaraf etish bilan birga axloqiy tartibni tiklash mazmunini ham kasb etadi.

“Gilgamish”da Humbaba bilan kurash qahramonlarning shon-shuhratga intilishi va favqulodda jasorat ko‘rsatishi bilan bog‘lanadi. Biroq bu g‘alabani faqat ezgulikning yovuzlik ustidan g‘alabasi sifatida soddalashtirish asardagi murakkablikni kamaytiradi. Gilgamish va Enkiduning harakatlari keyingi voqealar hamda ilohiy kuchlar bilan munosabatlar doirasida baholanadi. Shunday qilib, ikki dostonda raqibga qarshi kurash umumiy epik belgi bo‘lsa-da, uning sababi va oqibatlari turlicha badiiy mazmun yaratadi.

Umuman, “Ramayana” va “Gilgamish”ning tipologik o‘xshashliklari safar, sinov, ayriliq, hamrohlik va kurash motivlarining o‘zaro bog‘lanishida ko‘rinadi. Mazkur umumiyliklarni obrazlarning individual xususiyatlari va voqealarning g‘oyaviy mazmuni bilan birgalikda tahlil qilish dostonlarni bir xil syujet qolipiga keltirmasdan qiyoslash imkonini beradi.

Xulosa

“Ramayana” va “Gilgamish” dostonlarining qiyosiy tahlili ularning syujet va obrazlar tizimida safar, sinov, ayriliq, hamrohlik hamda kurash bilan bog‘liq tipologik o‘xshashliklar mavjudligini ko‘rsatadi. Ushbu motivlar voqealar izchilligini ta’minlash bilan birga, bosh qahramonning maqsadlari, axloqiy tanlovlari va ichki kechinmalarini ochishga xizmat qiladi. Har ikki dostonda qahramonning favqulodda kuchi uning barcha muammolarni mustaqil hal etishini anglatmaydi: hamrohlar bilan munosabatlar, yordam olish va yo‘qotish tajribasi uning badiiy qiyofasini shakllantiradi.

Syujetdagi umumiy motivlar asarlarda turlicha mazmun kasb etadi. Ramaning safarlari va sinovlari burch, sadoqat hamda yaqinlari oldidagi mas’uliyat bilan bog‘liq bo‘lsa, Gilgamishning izlanishlari do‘stlik, o‘lim va inson umrining chegaralarini anglashga yo‘naltiriladi. Sitaning olib qochilishi Ramaning uni izlash va qaytarish harakatlarini yuzaga chiqaradi. Enkiduning o‘limi esa Gilgamishni qaytarib bo‘lmaydigan yo‘qotish bilan yuzlashtirib, uning hayot haqidagi qarashlarini o‘zgartiradi. Demak, ayriliq motivining umumiyligi qahramonni yangi harakatga undashida, farqi esa ushbu harakatning maqsadi va natijasida namoyon bo‘ladi.

Obrazlar tizimidagi tipologik yaqinlik bosh qahramon, hamroh, yordamchi va raqiblarning o‘zaro munosabatlarida kuzatiladi. Biroq ularning o‘xshash syujet vazifalarini bajarishi mazmunan tengligini bildirmaydi. Lakshmana, Hanuman va Enkiduning bosh qahramon taqdiridagi ishtiroki turlicha badiiy vazifalarga ega. Xuddi shuningdek, Ravana va Humbaba bilan kurashning sabablari hamda oqibatlari bir-biridan farqlanadi. Shu bois obrazlarni qiyoslashda ularning voqealardagi o‘rni bilan birga asarning umumiy g‘oyaviy yo‘nalishi ham hisobga olinishi zarur.

Aniqlangan o‘xshashliklar dostonlar o‘rtasidagi bevosita tarixiy ta’sir yoki yagona kelib chiqishni tasdiqlamaydi. Bunday xulosalar alohida tarixiy va matniy dalillarni talab qiladi. Mazkur tezis doirasida ular epik tafakkurga xos umumiy badiiy tamoyillar sifatida talqin etiladi. Qiyosiy-tipologik yondashuvning ahamiyati ham umumiy

belgilarni aniqlash bilan birga, har bir dostonning madaniy mazmuni va qahramonlik idealini saqlagan holda tushuntirishidadir.

Foydalanilgan adabiyotlar

1. Vālmīki. *The Rāmāyaṇa of Vālmīki: The Complete English Translation* / Edited by Robert P. Goldman and Sally J. Sutherland Goldman. — Princeton: Princeton University Press, 2021. www.jstor.org

2. *The Epic of Gilgamesh* / Translated with an introduction by Andrew George. — London: Penguin Books, 2003. www.penguinrandomhouse.com

3. George A. R. *The Babylonian Gilgamesh Epic: Introduction, Critical Edition and Cuneiform Texts*. — 2 vols. — Oxford: Oxford University Press, 2003. soas-repository.worktribe.com

4. Brockington J. L. *Righteous Rāma: The Evolution of an Epic*. — Delhi: Oxford University Press, 1984. opac.braou.ac.in

5. Richman P., ed. *Many Rāmāyaṇas: The Diversity of a Narrative Tradition in South Asia*. — Berkeley: University of California Press, 1991. University of California Press

6. *The Epic of Gilgamesh: A Norton Critical Edition* / Translated and edited by Benjamin R. Foster. — 2nd ed. — New York: W. W. Norton & Company, 2019. wwnorton.co.uk

THE LANGUAGE AND ARTISTRY OF "DEVONI SAYQALIY"

Ikromova Xumora Ilich qizi

ANNOTATION

In this article, copies of the work of Sobir Saikaliy "Qissayi Saikaliy" were studied, one of which was selected as the basis and cross-referenced. In addition, excerpts from the copy were cited and subjected to analysis.

KEYWORDS

Sobir Saikaliy, Ghazal, copy, manuscript, "Qissayi Saikaliy", epic, chahoriyor, Prophet.

DEVONI SAYQALIY ASARINING TILI VA BADIIYATI

Ikromova Xumora Ilich qizi

ANNOTATSIYA: *Ushbu maqolada Sobir Sayqaliyning "Qissayi Sayqaliy" asari nusxalari o'rganilib, ulardan biri asos sifatida tanlangan va o'zaro qiyoslangan. Bundan tashqari, nusxadan parchalar keltirilib, tahlilga tortilgan.*

АННОТАЦИЯ: *В этой статье рассматриваются копии произведения Сабира Сайкали "Хиссайи Сайкали", один из которых был выбран за основу и сопоставлен между собой. Кроме того, отрывки из копии цитируются и подвергаются анализу.*

KALIT SO'ZLAR: *Sobir Sayqaliy, g'azal, nusxa, qo'lyozma, "Qissayi Sayqaliy", doston, chahoriyor, Payg'ambar.*

КЛЮЧЕВЫЕ СЛОВА: *Сабир Сайкали, газель, копия, рукопись, "Хиссайи Сайкали", эпос, чахориер, Пророк.*

Sobir Sayqaliy 1730-yili Hisorda tug'ilib, 1798-yili vafot etgan. Boy she'riy merosi mavjud. U yashagan davr O'rta Osiyo xonliklarining o'zaro kurashlari avj olgan davrda yashagan. Shuning uchun ham Sayqaliy ijodida ma'rifat g'oyasi yetakchilik qiladi. Sayqaliyni eng ko'p tarqalgan asari "Qissayi Sayqaliy" asaridir.

Sobir Sayqaliy “Qissayi Sayqaliy” asarining Buxoro adabiyot va san’at muzey-qo‘riqxonasida o‘ndan ortiq nusxalari mavjud. Bulardan inventar raqamlari 27633 va 22346 bo‘lgan nusxalari nisbatan to‘liq deb olinib, o‘rganildi. Nusxalarning to‘liq deb olinishiga sabab shuki, qolgan qo‘lyozmalarning to‘liq emasligi ularning holatidan yaqqol sezilib turadi.

“Qissayi Sayqaliy” ning tilini o’rganmasdan turib, u haqida gapirib bo‘lmaydi. Binobarin, san’atkorning tildan, uning ifoda imkoniyatidan qanchalik mahorat bilan foydalangani asarning badiiy qimmatini oshiradi. Sobir Sayqaliyning “Qissayi Sayqaliy” dostonida turkiy adabiy til butun jozibasi, keng ifoda imkoniyati, badiiy-estetik quvvati bilan namoyon bo‘ladi. Masalan, asarda choryorlarning Islom diniga qo‘shgan hissalarini tasvirlashda, hikoya mazmuniga mos o‘xshatishni qo‘llaydi.Choryorlarning birini ahboblar bazmi chirog‘iga, ikkinchisini ilm koniga, yana birini din-u dunyo chirog‘iga va to‘rtinchisini ikki daryo g‘avvosiga va mazhab quyoshiga o‘xshatadi:

Bayoni alqori chahoriyor Kerom

Ki etdiy emdi yoronig‘a alqob,
Alar erdi ravoniqi yaxshi as’hob.

Abu Bakr erdi ul ibn Kajjof,
Aning sha’ninda erdi sidqi insof.

Ki andin so’ngra Umar ibn Xattob.
Adolatni chirog’i biz kim ahbob.

Ki andin so’ngra Usmon ibn Affon,
Viqori ilm, hilmki ul edi kom.

Ali Ibn Abu Tolib kim andin,
So‘ng erdi el aro g‘olib kim andin.

Payg‘ambarg‘a ikkisi erdi dommot,
Payg‘ambarg‘a ikkisi bil muniyot.

Alar erdi chirog’i dini dunyo,
Alar erdi sanoyi ikki daryo.

Alar erdi safo afzoyi mazhab.
Saodat bir chindin ul to‘rt Kavkab.

Chiqib qilg‘on bu ummatlar hidoyat.
Qilib dohalqayi bobi diyonat,

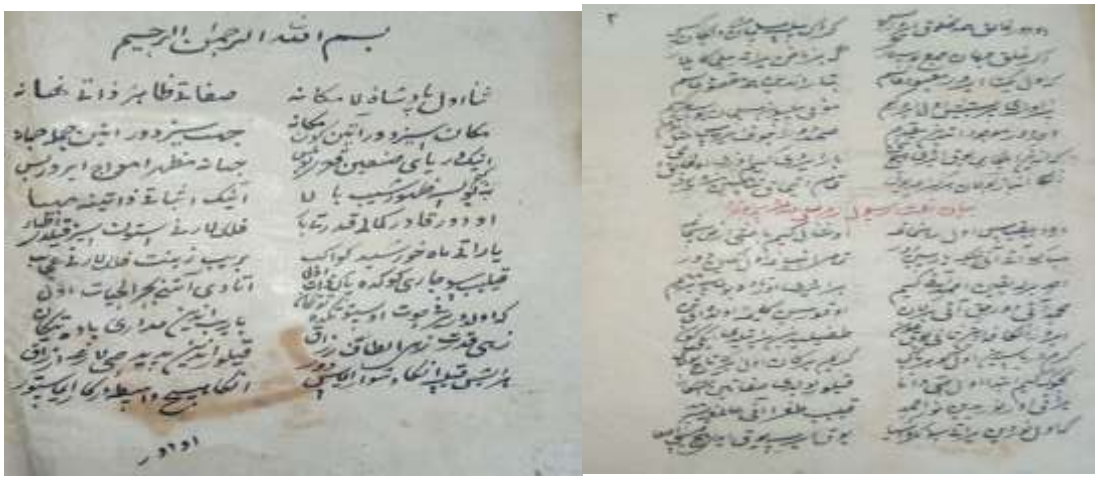
Alar erdi amiri, shahri islom.
Hududi, shahri, payg‘ambarni anjom.

Qilib o‘tgan alar erdi jahona.
Alardin qoldi ravshan dini zamona,

Alarning tavsifi haddin fuzundur.
Yozub bo‘lmas birin yuz ming tugundur.
Qilib so‘z inoyatdin, anbiyodin bituray,
Intihosin kar balodin.[1,4]

Shoir bu she‘riy parchada tashbihning imkoniyatlaridan samarali foydalangan. Bu orqali esa, tasvirning yorqin bo‘lishiga, teran mazmun, ohorli talqin vositasida asarning ta’sir kuchini oshirgan. Mazkur iqtibosning yana bir o‘ziga xos xususiyati shundan iboratki, shoir bu badiiy lavhada asarning g‘oyasini birdaniga bayon etmaydi.Voqelik tasviriga bob so‘ngida xulosa yasaydi. Asardan ko‘zlangan maqsad Imom Hasan va Imom Husayn kechmishlarini badiiy talqinidir.Shu bois payg‘ambarlar tarixi haqida hikoya qilinar ekan, voqealar tasviri ustalik bilan ikki imom qismatiga bog‘lanadi.

Shuni ta’kidlash lozimki, Sobir Sayqaliy doston qahramonlari xarakterini, ruhiy dunyosini tasvirlashda tarixiylik nuqtai nazaridan yondashadi. “Qissayi Sayqaliy”da Karbalo fojiasi insoniyat tarixi ko‘zgusida tasvirlangani ham fikrimiz dalilidir. Asarda Odam Atodan tortib to Hazrati Hasan va Hazrati Husaynlarning shahid bo‘lgan vaqtlarigacha bo‘lib o‘tgan tarixiy voqealar, afsona va rivoyatlar o‘rin olgan. Ularda asosan Payg‘ambarlar tarixi va ularning hayotlari davomida islom dinini yoyish maqsadida boshlaridan kechirgan voqealar tafsiloti yetakchilik qiladi.



Asarda har bir qissadan so‘ng, g‘azallar berilgan. G‘azallarda qissaning ma‘nosi to‘la aks etgan. Odam Ato qissasidan so‘ng, ushbu g‘azal keltirilgan:

Hech kim olam aro mundoq baloni ko‘rmadi,

Ko‘rdi har kim bir a’zom-u,andoq a’zoni ko‘rmadi.

Base suvsizdin guli bog‘ini nabi bo‘ldi xazon.

Hech gulshanda kishi mundoq havoni ko‘rmadi.

Ibtilo, anbiyo, avliyo-u bisyor edi,

Lek hech qaysisi mundoq anbiyoni ko‘rmadi.

Bas nechuk kimdur davron bul balog‘a yig‘lamay,

Har balo ko‘rdi, baloyi kar baloni ko‘rmadi.

Bul jahon ko‘hna motamsaro ichra falak

Sayqaliy dil-u xastadek sohib-u a’zoni ko‘rmadi.[1,6]

Yuksak mahorat va so’z sehridan foydalana olish qobiliyati birgina g’azalida ham namoyon bo‘ladi. Sayqaliy turkiy til imkoniyatlaridan samarali foydalangan. Darhaqiqat,Sayqaliy o‘xshatish san’atini qo‘llashda benazirdir. Baloni, a’zoni, havoni, anbiyoni so‘zlari qofiyani shakllantirgan.

Xulosa qilib shuni aytish mumkinki, bugungi kunda Sobir Sayqaliyning “Qissayi Sayqaliy” nusxalarining ko‘plab nusxalari mavjud bo‘lib, ular to‘liq holatda fanga ma’lum emas. Asarning nusxalarini o‘rganishga ehtiyoj bor.

ADABIYOT:

1. Sobir Sayqaliy. Devonu Sayqaliy. Buxoro adabiyot va san‘at muzey qo‘riqxonasi. Inv.27633

2. Sobir Sayqaliy. Devonu Sayqaliy. Buxoro adabiyot va san‘at muzey qo‘riqxonasi. Inv.22346

3.Sunnatullo Soyipov. “Qissai Sayqaliy”dostoni qo’lyozma nusxalari haqida // Abdulla Qodiriy nomidagi JDPI “Filologiyaning umumnazariy masalalari” respublika miqyosidagi ilmiy-amaliy konfrensiya materiallari. – Toshkent:Vneshinvestrom,2020. – 23b.

4.Rasulov X.O’zbek epik she’riyatida xalqchillik. – Toshkent: Fan, 1972.

Spatial Characteristics of Healthcare Provision in the Fergana Region

Xolmirzayeva Zulayxo Axmadjon qizi

Academician Sh. Alimov Republican Specialized Scientific and Practical Medical Center for Phthisiology and Pulmonology

zulayhoxolmirzayeva92@gmail.com orcid.org/0009-0002-3651-5869

Abstract

This study examines the territorial distribution of healthcare resources in the Fergana Region of Uzbekistan. Statistical and comparative analyses assess population distribution, age composition, healthcare facilities, physicians, and hospital beds. The findings indicate uneven resource distribution across cities and districts, with substantial concentration in major urban centres. Recommendations emphasise strengthening primary care and aligning workforce allocation with population needs. Resource availability is distinguished from access to care, as patient flows, travel times, costs, and service quality were not measured. The findings offer a preliminary basis for regional healthcare planning, subject to verification of measurement units and alignment of reporting periods.

Keywords

Fergana, healthcare, population, accessibility, physicians, hospitals, disparities, distribution, equity, infrastructure.

Introduction. The rational spatial organization of healthcare services is of considerable importance for safeguarding population health. The location of healthcare facilities, the availability of qualified medical personnel, and transport accessibility largely determine the population's ability to obtain timely medical care. Therefore, examining the spatial distribution of healthcare services and urban–rural disparities in the Fergana Region is particularly relevant for promoting more equitable access to healthcare services.

Review of the Research Problem. Adapting the scientific and methodological

approaches developed in international studies to the assessment of the spatial characteristics of healthcare provision in the Fergana Region is of particular importance. Studies by Hashtarkhani et al. [1], Wood et al. [2], and Pu [3] place particular emphasis on evaluating the spatial availability of healthcare services, the adequacy of healthcare resources, and the equity of their distribution.

These approaches can be applied across the districts and cities of the Fergana Region by calculating the number of physicians, mid-level healthcare personnel, hospital beds, and healthcare facilities per 10,000 inhabitants and identifying disparities among different territories. Such indicators provide a quantitative basis for assessing differences in healthcare provision and determining areas that are comparatively underserved.

The comparative approach to assessing spatial inequality employed by Giraudy and Pribble [4] can also be adapted to the Fergana Region. In particular, it provides a methodological basis for comparing the level of healthcare provision in the cities of Fergana, Kokand, Margilan, and Kuvasay with that of the rural districts of the region, thereby enabling the identification of urban–rural disparities in access to healthcare resources and services.

The methods used by He et al. [5] and Raeesi et al. [6] to assess the spatial accessibility and equity of healthcare services can be adapted to examine the population's access to healthcare facilities in the Fergana Region based on distance and travel time. In particular, assessing access to healthcare services for settlements located far from major urban centres can help reveal spatial disparities in healthcare accessibility. Drawing on the approach proposed by Hierink et al. [7], the effects of distance to healthcare facilities and travel time on timely access to medical care can also be evaluated.

The principles developed by Pan et al. [8] and Wang et al. [9] for the rational location of healthcare facilities and the spatial optimisation of healthcare resources can provide an important methodological basis for assessing the existing spatial structure of

healthcare infrastructure in the Fergana Region. This approach makes it possible to identify districts with relatively large populations but comparatively low levels of provision with physicians or hospital beds and to classify them as priority areas for healthcare development. Furthermore, the integrated approach proposed by Chen et al. [10] can be used to assess the interrelationships among population distribution, healthcare resources, and transport infrastructure. Based on the results, the districts and cities of the Fergana Region can be classified into areas with high, medium, and low levels of healthcare provision.

In Uzbekistan, Ahmedov et al. (2007) analysed the national healthcare system and identified disparities in healthcare financing across regions, shortages of medical personnel in rural healthcare facilities, and financial barriers to accessing healthcare services. Their findings provide an important theoretical and methodological basis for examining the spatial distribution of healthcare facilities, the availability of medical personnel, and urban–rural disparities in the Fergana Region.

Materials and Methods. The study is expected to use data from the National Statistics Committee of the Republic of Uzbekistan, the Fergana Regional Department of Statistics, and regional healthcare authorities. The spatial scope of the study covers the districts and cities of the Fergana Region, while the initial and final years of the study period will be determined according to data availability. The principal indicators include the number of healthcare facilities and the provision of physicians, mid-level healthcare personnel, and hospital beds per 10,000 inhabitants.

Comparative geographical and statistical methods will be employed to identify disparities among districts and cities, while dynamic analysis will be used to assess changes in the selected indicators over time. Districts and cities will be compared by calculating the ratio of their healthcare provision indicators to the regional average. The results will reflect the spatial distribution of healthcare resources and territorial

accessibility. Conclusions regarding the quality of healthcare services or the actual level of healthcare utilisation by the population will be drawn only where supported by additional empirical evidence.

Research Results. The demand for healthcare services is closely associated with the demographic structure and spatial distribution of the population. Population size, density, and age composition determine both the scale and structure of demand for healthcare services. As of 1 January 2026, the population of the Fergana Region was 4,223,044. Based on this population figure and the region's area of 6.76 thousand km² as of the beginning of 2025, the estimated population density was approximately 624.7 persons per km².

Considerable spatial disparities were observed across the region. The estimated population density in the Tashlak and Uchkuprik districts was 942.4 and 933.8 persons per km², respectively, whereas in the Besharik District it was substantially lower, at 326.4 persons per km².

In terms of age structure, 34.9% of the population was under 18 years of age, while 10.6% was aged 60 years and older. This demographic profile highlights the need to ensure adequate provision of paediatric and preventive healthcare services, as well as services tailored to the needs of older adults. At the same time, in densely populated areas, the capacity of healthcare facilities should be aligned with population size to ensure that healthcare infrastructure adequately responds to local demand.

Spatial and Demographic Indicators of the Fergana Region

Territory	**Area, km²**	**Population, persons**	**Population density, persons/km²**	**Age 0–17, %**	**Age 18–59, %**	**Age 60+, %**
Fergana Region	6,760	4,223,044	624.7	34.9	54.5	10.6
Fergana city	110	335,087	3,046.2	29.7	58.9	11.4

Kokand city	60	319,611	5,326.9	34.1	54.6	11.2
Kuvasay city	260	104,832	403.2	32.8	55.2	12.0
Margilan city	50	261,948	5,239.0	35.0	54.5	10.5
Altiarik District	630	237,263	376.6	34.3	55.5	10.2
Kushtepa District	370	217,765	588.6	36.1	54.5	9.4
Bagdad District	340	243,006	714.7	35.9	52.8	11.2
Buvayda District	280	258,244	922.3	36.8	53.4	9.8
Besharik District	770	251,311	326.4	35.8	54.3	9.8
Kuva District	440	285,386	648.6	34.1	56.0	9.9
Uchkuprik District	270	252,138	933.8	36.8	52.7	10.5
Rishtan District	310	225,158	726.3	34.7	55.0	10.3
Sokh District	220	88,652	403.0	36.5	54.8	8.7
Tashlak District	240	226,175	942.4	35.3	54.0	10.6
Uzbekistan District	670	244,968	365.6	35.3	53.0	11.6
Fergana District	590	230,196	390.2	35.4	53.7	10.9
Dangara District	430	184,682	429.5	36.9	51.5	11.6
Furkat District	310	132,231	426.6	35.0	53.0	12.0
Yazyavan District	410	124,391	303.4	35.8	55.6	8.6

Of the 245 hospitals in the Fergana Region, 69 were located in the city of Fergana and 26 in Kokand. Together, these two urban centres accounted for 38.8% of all hospitals in the region. They also accounted for 40.6% of the total number of hospital beds reported in the available dataset, indicating a concentration of inpatient healthcare resources in major urban centres. However, since hospitals may also serve patients from surrounding districts and other areas, their spatial distribution should be assessed in conjunction with patient flows and service catchment areas. In addition, the apparent inconsistency between the unit of measurement indicated as “thousand” in the hospital-bed dataset and

the values reported as whole numbers should be clarified before these figures are interpreted as absolute numbers.

Access to healthcare services among urban and rural populations in the Fergana Region is influenced by the spatial distribution of healthcare facilities, transport accessibility, the availability of medical personnel, and the socioeconomic conditions of the population. In urban areas, the closer proximity of healthcare facilities may facilitate both access to services and the ability to choose among providers; however, waiting times and healthcare-related costs may still restrict utilisation. In rural areas, greater travel distances, irregular transport services, and shortages of healthcare personnel may create additional barriers to obtaining timely medical care.

Therefore, the spatial accessibility of healthcare services should be assessed not only in terms of the physical availability of healthcare facilities but also by considering whether the population can reach these facilities in a timely manner, afford the associated costs, and obtain care appropriate to their healthcare needs. These dimensions represent key criteria for evaluating territorial accessibility and identifying urban–rural disparities in healthcare provision.

In 2025, the number of physicians in the Fergana Region reached 9,856, representing an increase of 44.0% compared with 2011 and 5.5% compared with 2024. However, medical personnel were unevenly distributed across the region. The city of Fergana had 3,259 physicians, followed by Kokand with 1,064, Margilan with 499, and Kuvasay with 184. Although these four administratively separate cities accounted for approximately 24.2% of the region’s total population, they accommodated 50.8% of all physicians. Based on the population as of the beginning of 2026, there were 97.3 physicians per 10,000 inhabitants in the city of Fergana and 33.3 in Kokand, compared with the regional average of 23.3 physicians per 10,000 inhabitants. These figures indicate a marked concentration of medical personnel in major urban centres. However, this pattern should

be interpreted with caution, as healthcare facilities located in these centres may also serve patients from surrounding districts and other parts of the region.

Overall, 43.3% of the Fergana Region's population resides in rural areas. The proportion of the rural population reaches 80.7% in Uchkuprik, 77.9% in Dangara, and 76.3% in Tashlak. These districts have 15.0, 16.9, and 12.9 physicians per 10,000 inhabitants, respectively, all of which are below the regional average. Physician availability is even lower in Kuva and Kushtepa, at 11.7 and 12.7 physicians per 10,000 inhabitants, respectively. These findings indicate that in predominantly rural districts, the availability of medical personnel should be assessed in conjunction with the population's spatial accessibility to healthcare services.

The spatial distribution of public and private healthcare facilities in the Fergana Region should also be evaluated in relation to population density, the urban–rural composition of the population, and demand for healthcare services. In major cities such as Fergana, Kokand, and Margilan, population concentration and relatively well-developed infrastructure may create favourable conditions for the expansion of private healthcare services. In contrast, in districts with a high proportion of rural residents, such as Uchkuprik, Dangara, and Tashlak, the spatial coverage of public healthcare facilities and their proximity to the population are particularly important for ensuring access to essential medical care.

For the preliminary classification of the districts and cities of the Fergana Region according to physician availability, the number of physicians per 10,000 inhabitants was used as the principal indicator. Relative to the regional average of 23.3 physicians per 10,000 inhabitants, values below 75% of the regional average were classified as "relatively low," values ranging from 75% to 125% as "medium," and values exceeding 125% as "relatively high." These thresholds represent operational criteria established specifically for the purposes of this study.

Level of Physician Availability	Physicians per 10,000 Population	Territories
Relatively high	More than 29.2	Cities of Fergana and Kokand
Medium	17.5–29.2	Cities of Margilan and Kuvasay; Fergana and Furkat districts
Relatively low	Less than 17.5	Altiarik, Bagdad, Besharik, Buvayda, Dangara, Kuva, Kushtepa, Rishtan, Sokh, Tashlak, Uzbekistan, Uchkuprik, and Yazyavan districts

This classification reflects the level of physician availability. However, a comprehensive assessment of healthcare provision should also take into account the availability of hospital beds, the capacity of outpatient facilities, and the spatial accessibility of healthcare services. The calculations were performed by interpreting the 2025 physician data as absolute numbers of physicians and relating these figures to the population as of the beginning of 2026.

Conclusion and Recommendations. The principal geographical characteristic of healthcare provision in the Fergana Region is the relatively extensive distribution of outpatient facilities across the districts, accompanied by the concentration of physicians and inpatient healthcare resources in several major urban centres. Population-adjusted indicators reveal substantial spatial disparities; however, they do not directly reflect the quality of healthcare services or the actual level of healthcare utilisation by the population. Therefore, the classification based on physician availability should be regarded as a preliminary assessment rather than a comprehensive measure of overall healthcare provision.

Identifying the factors underlying the relatively low level of physician availability in the Kuva, Kushtepa, and Tashlak districts should be considered a priority. This requires an assessment of existing staffing levels, vacant positions, physicians' workloads, and patterns of healthcare utilisation outside residents' districts of residence. Once settlements with limited transport accessibility have been identified, appropriate interventions should be selected according to local conditions. These may include the provision of mobile healthcare services, improvements in transport connectivity, or the expansion of the capacity of nearby healthcare facilities.

The demand for healthcare personnel should be determined on the basis of population size, age structure, morbidity patterns, and the actual catchment areas of healthcare facilities. In reallocating healthcare resources, particular attention should be paid to strengthening primary healthcare services in the districts while maintaining the interdistrict and regional service functions of major urban healthcare centres. Measures aimed at attracting and retaining healthcare professionals should be based on a systematic assessment of staff vacancies and working conditions.

References.

1. Hashtarkhani S., Schwartz D., Shaban-Nejad A. Enhancing healthcare accessibility and equity through geoprocessing and spatial accessibility analysis toolkit: Development and case study. *JMIR Formative Research*. 2024.

2. Wood S., Alston L., Beks H. et al. Application of spatial measures to analyse health service accessibility in Australia: A systematic review and recommendations for future practice. *BMC Health Services Research*. 2023.

3. Pu L. Fairness of the distribution of public medical and health resources. *Frontiers in Public Health*. 2021.

4. Giraudy A., Pribble J. Territorial inequality in health service provision: Lessons from Latin American federations. *Latin American Politics and Society*. 2020.

5. He C., Chen L., Gairpur M. The distribution, accessibility and equity of primary care in China: A nationwide analysis based on point-of-interest and high-resolution population data. 2026.

6. Raeesi A., Hashtarkhani S., Tara M. et al. Empowering access: An overall composite spatial accessibility index of healthcare services in southeastern Iran. *International Journal for Equity in Health*. 2025.

7. Hierink F., Okiro E., Flahault A., Ray N. The winding road to health: A systematic scoping review on the effect of geographical accessibility to health care on infectious diseases in low- and middle-income countries. *PLoS ONE*. 2021.

8. Pan J., Deng Y.-F., Yang Y.-L., Zhang Y.-M. Modelling resource allocation for rational healthcare planning: A two-step optimization approach to improving spatial accessibility of newly established tertiary hospitals in a large Chinese city. *Social Science & Medicine*. 2023.

9. Wang Y.-F., Zhai D., Xie W.-C., Huang S. Spatial optimization of hierarchical medical facilities based on multi-source data: A case study of Shenyang, China. *Frontiers in Public Health*. 2025.

10. Chen L., Chen T., Lan T., Chen K., Pan J. Effects of population distribution, healthcare resources and transportation infrastructure on spatial accessibility to healthcare. *Inquiry*. 2023.

ORAL MICROBIOTA AND CARIES INTENSITY IN PATIENTS WITH CHRONIC PERIODONTITIS AND GALLSTONE DISEASE UNDER COMPLEX TREATMENT

Muhiddinov Abdurakhmonjon Lazizovich

https://orcid.org/0009-0002-7727-7385

abduraxmon.0207@gmail.com

Bukhara State Medical Institute, Bukhara, Uzbekistan

Kazakova Nozima Nodirovna

https://orcid.org/0000-0002-9434-540X

nozima.kazakova@bsmi.uz

Bukhara State Medical Institute, Bukhara, Uzbekistan

Abstract

Oral microbiota and caries intensity were studied in patients with stage I–II chronic generalized periodontitis divided by the clinical form of hepatobiliary pathology (cholelithiasis with formed calculi, biliary sludge, no hepatobiliary pathology) who received complex or standard treatment. In group I with complex treatment (n=21) the detection rate of Streptococcus mutans decreased from 85.7% to 33.3%, Porphyromonas gingivalis from 81.0% to 19.0%, Candida albicans from 57.1% to 14.3% and Enterococcus faecalis from 28.6% to 4.8%, while Streptococcus mitis increased from 52.4% to 81.0%. After standard treatment (n=20) the changes were considerably smaller. The DMF index stabilized under complex treatment (14.6±0.9 and 14.9±0.9) and continued to grow after standard treatment (14.8±0.9 and 15.7±0.9).

Keywords

chronic generalized periodontitis, gallstone disease, oral microbiota, caries intensity, probiotics, Enterococcus faecalis, complex treatment.

МИКРОБИОТА ПОЛОСТИ РТА И ИНТЕНСИВНОСТЬ КАРИЕСА У ПАЦИЕНТОВ С ХРОНИЧЕСКИМ ПАРОДОНТИТОМ И ЖЕЛЧНОКАМЕННОЙ БОЛЕЗНЬЮ ПРИ КОМПЛЕКСНОМ ЛЕЧЕНИИ

Мухиддинов Абдурахмонжон Лазизович

https://orcid.org/0009-0002-7727-7385

abduraxmon.0207@gmail.com

Бухарский государственный медицинский институт, Бухара, Узбекистан

Казакова Нозима Нодировна

https://orcid.org/0000-0002-9434-540X

nozima.kazakova@bsmi.uz

Бухарский государственный медицинский институт, Бухара, Узбекистан

Аннотация. Изучены микробиота полости рта и интенсивность кариеса у пациентов с хроническим генерализованным пародонтитом I–II стадии, разделённых по клинической форме гепатобилиарной патологии (желчнокаменная болезнь со сформированными конкрементами, билиарный сладж, без гепатобилиарной патологии), получавших комплексное или стандартное лечение. В группе I при комплексном лечении (n=21) частота обнаружения Streptococcus mutans снизилась с 85,7% до 33,3%, Porphyromonas gingivalis — с 81,0% до 19,0%, Candida albicans — с 57,1% до 14,3%, Enterococcus faecalis — с 28,6% до 4,8%, а доля Streptococcus mitis возросла с 52,4% до 81,0%. При стандартном лечении (n=20) изменения были значительно меньше. Индекс КПУ стабилизировался при комплексном лечении (14,6±0,9 и 14,9±0,9) и продолжал расти при стандартном (14,8±0,9 и 15,7±0,9).

Ключевые слова: хронический генерализованный пародонтит, желчнокаменная болезнь, микробиота полости рта, интенсивность кариеса, пробиотики, Enterococcus faecalis, комплексное лечение.

Relevance. The oral microbiota is a key factor of periodontal inflammation and caries development. Periodontitis has been proposed as a potential predisposing factor for gallstone cholecystitis through chronic systemic inflammation [1], and probiotics are being studied as adjuncts to periodontal therapy, although the published results are mixed and depend on study design and probiotic type [2]. Data on changes of the oral microbiota and caries intensity under complex treatment in patients with periodontitis and gallstone disease are therefore relevant.

Objective. To study the changes in the composition of the oral microbiota and in caries intensity in patients with chronic generalized periodontitis associated with gallstone disease under complex and standard treatment.

Materials and Methods. Patients with stage I–II chronic generalized periodontitis were divided into three groups according to the presence and clinical form of hepatobiliary pathology (cholelithiasis with formed calculi, biliary sludge, and no hepatobiliary pathology) and, within each group, received either complex or standard treatment. The complex scheme included probiotic drops with Lactobacillus reuteri, a hyaluronate gel and correction of fat-soluble vitamin deficiency in addition to the standard periodontal protocol. Bacteriological examination determined the detection frequency of cariogenic, commensal, periodontopathogenic and fungal flora and of Enterococcus faecalis as a marker of the gut–oral axis before treatment and after 6 and 12 months. Caries intensity was assessed by the DMF index.

Results and Discussion. In group I (n=21, complex treatment), the detection rate of Streptococcus mutans decreased from 85.7% to 33.3%, Lactobacillus acidophilus from 81.0% to 28.6%, Porphyromonas gingivalis from 81.0% to 19.0%, Fusobacterium nucleatum from 71.4% to 19.0%, Aggregatibacter actinomycetemcomitans from 38.1% to 4.8%, Candida albicans from 57.1% to 14.3% and Enterococcus faecalis from 28.6% to 4.8%. At the same time, the share of commensal Streptococcus salivarius increased

from 42.9% to 76.2% and that of Streptococcus mitis from 52.4% to 81.0%. In the standard-treatment subgroup (n=20), the changes were considerably smaller: S. mutans declined only to 65.0%, P. gingivalis to 55.0%, C. albicans to 35.0%, E. faecalis remained at 20.0%, and the commensal flora increased to 55.0% (S. salivarius) and 60.0% (S. mitis). Across the three groups receiving complex treatment, S. mutans was found in 20.0–33.3%, P. gingivalis in 10.0–19.0% and C. albicans in 4.8–14.3% of patients at 12 months, and the share of commensal flora rose to 76.2–85.7%. Caries intensity stabilized under complex treatment (DMF 14.6±0.9 before and 14.9±0.9 after 12 months in group I), whereas after standard treatment it continued to grow (14.8±0.9 and 15.7±0.9). The more favorable microbiological picture in the complex subgroups was accompanied by a neutral shift of oral pH and by an increase of sIgA.

Conclusion. Complex treatment shifts the oral microbiota of patients with periodontitis and gallstone disease toward normal: the frequency of cariogenic, periodontopathogenic and fungal flora decreases, the proportion of commensal flora increases and caries intensity is stabilized. The standard protocol does not provide such an effect, which confirms the pathogenetic validity of the complex approach.

References

1. Yordanagil M., Turgut H.T., Tuzun B., Helvaci E., Okan I. Periodontitis as a potential predisposing factor for gallstone cholecystitis: exploring the role of chronic systemic inflammation // Surgery Today. – 2025. – Vol. 56, No. 6. – P. 934–946. doi:10.1007/s00595-025-03199-4.

2. Baddouri L., Hannig M. Probiotics as an adjunctive therapy in periodontitis treatment—reality or illusion—a clinical perspective // npj Biofilms and Microbiomes. – 2024. – Vol. 10. – Art. 148. doi:10.1038/s41522-024-00614-5.

TRANSFORMATION OF YOUNG PEOPLE'S CULTURAL THINKING IN THE CONTEXT OF GLOBALIZATION: A THEORETICAL ANALYSIS OF CULTURAL DIFFUSION AND ACCULTURATION PROCESSES

Abdurahimov Bobur Boqijon o'g'li

Namangan State University

E-mail: abdurahimovb65@gmail.com

Abstract

This article provides a theoretical analysis of the transformational characteristics of young people's cultural thinking in the context of globalization. It examines the impact of cultural diffusion, acculturation, enculturation, and axiological transformation on young people's assimilation of national and cultural values, acceptance of other cultural influences, and formation of cultural identity. The article also explores the mechanisms through which digital communication, popular culture, and global information flows influence changes in young people's cultural thinking. It argues that globalization should not be viewed solely as a cultural threat, but rather as a process that expands opportunities for intercultural dialogue, creative exchange, and cultural development.

Keywords

globalization, youth, cultural thinking, cultural diffusion, acculturation, enculturation, axiological transformation, cultural identity, digital space, cultural values.

GLOBALLASHUV SHAROITIDA YOSHLAR MADANIY TAFAKKURINING TRANSFORMATSIYASI: MADANIY DIFFUZIYA VA AKKULTURATSIYA JARAYONLARINING NAZARIY TAHLILI

Abdurahimov Bobur Boqijon o'g'li

Namangan davlat universiteti

E-mail: abdurahimovb65@gmail.com

Annotatsiya. Mazkur maqolada globallashuv sharoitida yoshlar madaniy tafakkurining transformatsion xususiyatlari nazariy jihatdan tahlil qilinadi. Unda madaniy diffuziya, akkulturatsiya, inkulturatsiya va aksiologik transformatsiya jarayonlarining yoshlarning milliy-madaniy qadriyatlarni o‘zlashtirishi, boshqa madaniy ta’sirlarni qabul qilishi hamda madaniy identiklikni shakllantirishiga ta’siri yoritiladi. Shuningdek, raqamli kommunikatsiya, ommaviy madaniyat va global axborot oqimlarining yoshlar madaniy tafakkuridagi o‘zgarishlarga ta’sir mexanizmlari ochib beriladi. Maqolada globallashuvni faqat madaniy xavf sifatida emas, balki madaniyatlararo muloqot, ijodiy almashinuv va madaniy rivojlanish imkoniyatlarini kengaytiruvchi jarayon sifatida baholash zarurligi asoslanadi.

Kalit so‘zlar: globallashuv, yoshlar, madaniy tafakkur, madaniy diffuziya, akkulturatsiya, inkulturatsiya, aksiologik transformatsiya, madaniy identiklik, raqamli makon, madaniy qadriyatlar.

Kirish

Globallashuv zamonaviy jamiyat taraqqiyotining muhim omillaridan biri sifatida ijtimoiy, iqtisodiy, siyosiy va madaniy jarayonlarning o‘zaro aloqadorligini kuchaytirmoqda. Ayniqsa, raqamli kommunikatsiya vositalarining keng tarqalishi natijasida turli xalqlar va madaniyatlar o‘rtasidagi axborot almashinuvi sezilarli darajada jadallashdi. Mazkur jarayon yoshlarning dunyoqarashi, qadriyatlari, estetik qarashlari va madaniy xulq-atvoriga ham bevosita ta’sir ko‘rsatmoqda.

UNESCOning madaniy ifodalar xilma-xilligini himoya qilishga oid yondashuvida madaniyatlarning o‘zaro almashinuvi va muloqoti madaniy xilma-xillikni boyituvchi omil sifatida e’tirof etiladi. Shu bilan birga, globallashuv va axborot-kommunikatsiya texnologiyalarining jadal rivojlanishi madaniy xilma-xillik oldida yangi muammolarni ham yuzaga keltirishi qayd etilgan [1].

Shu nuqtai nazardan, yoshlar madaniy tafakkurining transformatsiyasini faqat tashqi ta’sirlarning natijasi sifatida emas, balki milliy va global madaniy mazmunlarning o‘zaro munosabati sifatida tadqiq etish dolzarb hisoblanadi.

Madaniy tafakkur va globallashuvning o‘zaro aloqadorligi

Madaniy tafakkur insonning madaniy hodisalarni anglash, baholash, talqin qilish va ular asosida muayyan munosabat hamda xulq-atvor shakllarini namoyon etish qobiliyatini ifodalaydi. U tarixiy xotira, milliy qadriyatlar, til, an’analar, estetik qarashlar, ijtimoiy tajriba va shaxsiy dunyoqarashning o‘zaro ta’siri asosida shakllanadi.

Yoshlar madaniy tafakkuri esa ayniqsa dinamik xarakterga ega. Chunki yosh davrida shaxs turli ijtimoiy va madaniy muhitlar bilan faol munosabatga kirishadi. Oila, ta’lim, tengdoshlar muhiti, ommaviy axborot vositalari, san’at, internet va ijtimoiy tarmoqlar mazkur jarayonning muhim omillaridir.

Globallashuv natijasida yosh bir vaqtning o‘zida bir nechta madaniy makonning ishtirokchisiga aylanmoqda. U mahalliy madaniyat, milliy an’analar va global raqamli madaniyat mazmunlarini parallel ravishda qabul qiladi. Natijada madaniy tafakkurda yangi mazmunlar, qarashlar va baholash mezonlari shakllanishi mumkin.

Bu jarayonni madaniy diffuziya tushunchasi orqali izohlash mumkin. Madaniy diffuziya bir madaniyatga xos bo‘lgan g‘oya, qadriyat, urf-odat, san’at shakli yoki xulq-atvor namunasining boshqa madaniy muhitga tarqalishini anglatadi. Raqamli kommunikatsiya sharoitida bunday almashinuvning tezligi va ko‘lami sezilarli darajada oshgan.

Akkulturatsiya va yoshlar madaniy tafakkuri

Akkulturatsiya turli madaniy guruhlarning uzoq muddatli aloqasi natijasida madaniy o‘zgarishlarning yuzaga kelish jarayonini ifodalaydi. Globallashuv sharoitida yoshlar mazkur jarayonning faol subyektiga aylanmoqda.

2025-yilda e’lon qilingan tadqiqotda globallashuvga asoslangan akkulturatsiya mahalliy va xorijiy madaniy yo‘nalishlarning o‘zaro munosabati hamda yoshlarning ikki yoki undan ortiq madaniy yo‘nalishlarni muvofiqlashtirish jarayoni bilan bog‘liqligi ko‘rsatilgan [2].

Shundan kelib chiqib, yoshlarning xorijiy madaniy elementlarni qabul qilishi avtomatik ravishda milliy madaniyatdan voz kechish sifatida talqin qilinmasligi kerak. Muhim masala — mazkur ta’sirlarning qanday anglanishi, qanday qadriyatlar asosida baholanishi va shaxsning mavjud madaniy tizimiga qanday integratsiyalanishidir.

Demak, madaniy tafakkurning barqarorligi tashqi madaniy ta’sirlarning mavjud yoki mavjud emasligi bilan emas, balki yoshlarning ularni **tanqidiy anglash va qadriy jihatdan baholash qobiliyati** bilan belgilanadi.

Inkulturatsiya va milliy-madaniy identiklik

Yoshlarning madaniy tafakkurini tushunishda inkulturatsiya jarayoni ham muhim ahamiyatga ega. Inkulturatsiya shaxsning o‘z jamiyatiga xos madaniy qadriyatlar, urf-odatlar, til, me’yorlar va xulq-atvor shakllarini o‘zlashtirish jarayonidir.

Oila, ta’lim va mahalla mazkur jarayonning asosiy ijtimoiy muhitlarini tashkil etadi. Bunda madaniyat faqat nazariy bilim sifatida emas, balki kundalik hayotdagi amaliy tajriba orqali o‘zlashtiriladi.

UNESCO ham nomoddiy madaniy merosning muhim jihatlaridan biri bilim va ko‘nikmalarning avloddan-avlodga uzatilishi ekanligini ta’kidlaydi. Bunday uzluksizlik globallashuv sharoitida madaniy xilma-xillikni saqlashning muhim omillaridan biridir [3].

Shu sababli yoshlar madaniy tafakkurining barqarorligini ta’minlashda milliy madaniy merosni faqat saqlash emas, balki uni yoshlar uchun zamonaviy va tushunarli shakllarda qayta talqin qilish muhimdir.

Aksiologik transformatsiya

Globallashuv sharoitidagi yana bir muhim jarayon — aksiologik transformatsiyadir. Aksiologik transformatsiya shaxs yoki ijtimoiy guruhning qadriyatlarni anglash, ustuvorlashtirish va baholash mezonlaridagi o‘zgarishlarni anglatadi.

Raqamli makonda yoshlar turli qadriyatlar tizimiga oid kontentlarni bir vaqtning o‘zida qabul qiladi. Natijada iste’mol madaniyati, individualizm, ommaviy mashhurlik, muvaffaqiyat, go‘zallik, erkinlik va boshqa tushunchalarga munosabat o‘zgarishi mumkin.

Biroq bunday transformatsiya bir yo‘nalishli emas. Yoshlar global madaniyatning ayrim elementlarini qabul qilish bilan birga, o‘z milliy-madaniy qadriyatlarini yangi shakllarda namoyon etishlari ham mumkin. Shu sababli globallashuvni “milliy madaniyatga qarshi” va “global madaniyat tarafdori” kabi ikki qutbli yondashuv asosida tushuntirish ilmiy jihatdan yetarli emas.

Raqamli makon va madaniy tafakkur

Bugungi raqamli makon yoshlarning madaniy tajribasini shakllantiruvchi muhim muhitga aylandi. Internet orqali yoshlar musiqa, kino, adabiyot, san’at, tarixiy va madaniy materiallardan foydalanish imkoniyatiga ega.

Biroq axborotning ko‘pligi uning sifatini avtomatik ravishda kafolatlamaydi. UNESCO yoshlar uchun media va axborot savodxonligi tanqidiy fikrlash, dezinformatsiyani farqlash va raqamli muhitda mas’uliyatli harakat qilish imkonini beruvchi muhim kompetensiya ekanini qayd etadi [4]. Demak, yoshlar madaniy tafakkurini rivojlantirishda media savodxonlikni madaniy savodxonlik bilan uyg‘unlashtirish zarur. Yosh nafaqat “nima ko‘rayotgani”, balki “nega aynan shu mazmunni ko‘rayotgani”, “uning madaniy mazmuni nimadan iboratligi” va “u qanday qadriyatni shakllantirishi mumkinligi” haqida fikrlay olishi kerak.

Xulosa, Globallashuv sharoitida yoshlar madaniy tafakkurining transformatsiyasi

murakkab va ko‘p omilli jarayon hisoblanadi. Madaniy diffuziya, akkulturatsiya, inkulturatsiya va aksiologik transformatsiya bir-biri bilan o‘zaro bog‘liq holda yoshlarning madaniy tajribasi va identikligini shakllantiradi.

Tadqiqot natijasida quyidagi nazariy xulosaga kelish mumkin: yoshlar madaniy tafakkurining barqarorligi global madaniy ta’sirlarni cheklash emas, balki ularni milliy-madaniy qadriyatlar, tanqidiy fikrlash va madaniyatlararo muloqot mezonlari asosida anglash imkoniyatlarini rivojlantirish bilan ta’minlanadi.

Shu jihatdan, yoshlar madaniy tafakkurini himoya qilishning samarali modeli “yopiq madaniy makon”ni yaratish emas, balki milliy qadriyatlarni chuqur anglash + global madaniyatni tanqidiy qabul qilish + madaniyatlararo muloqot + media savodxonlik tamoyillarining integratsiyasiga asoslanishi lozim.

Foydalanilgan adabiyotlar

1. UNESCO. Convention on the Protection and Promotion of the Diversity of Cultural Expressions. Paris, 2005.
2. Ozer S., Kamran M.A. Integrating Pakistani and Western cultural identities through globalization-based acculturation // International Journal of Intercultural Relations. 2025. Vol. 105.
3. UNESCO. Intangible Cultural Heritage: Safeguarding and Transmission of Living Heritage.
4. UNESCO. Journey through the MILtiverse: Media and Information Literacy Toolkit for Youth Organizations. 2024.
5. UNESCO. Media and Information Literacy and Digital Competencies. 2025.
6. Hall S. Cultural Identity and Diaspora // Identity: Community, Culture, Difference. London, 1990.
7. Castells M. The Rise of the Network Society. Wiley-Blackwell.

Problems of Freshwater Resource Depletion and Rational Use of Water Resources

Karimov Farohiddin Fazliddin o‘g‘li
Independent Researcher

Abstract

Freshwater is a strategically important natural resource that determines the sustainability of ecosystems, food security, public health, and socio-economic development. However, increasing population, rapid urbanization, agricultural intensification, industrial development, climate change, and inefficient water management are placing growing pressure on available freshwater resources. Particular attention is given to inefficient irrigation practices, excessive water withdrawal, groundwater depletion, pollution, infrastructure losses, and the uneven distribution of freshwater resources. The study also considers the importance of integrated water resources management, modern water-saving technologies, efficient irrigation systems, wastewater reuse, and improved institutional mechanisms for ensuring sustainable water use.

Keywords

freshwater resources, water scarcity, water depletion, rational water use, sustainable water management, water-use efficiency, irrigation, integrated water resources management.

Annotatsiya

Chuchuk suv – ekologik tizimlarning barqarorligi, oziq-ovqat xavfsizligi, jamoat salomatligi va ijtimoiy-iqtisodiy rivojlanishni belgilovchi strategik jihatdan muhim tabiiy resursdir. Biroq, aholining o‘sishi, tez shaharsozlik, qishloq xo‘jaligining intensivligi, sanoat rivojlanishi, iqlim o‘zgarishi va samarasiz suv boshqaruvi mavjud toza suv resurslariga bosimni orttirmoqda. Ayniqsa, samarasiz sug‘orish usullari, ortiqcha suv olish, yer osti suvlarining kamayishi, ifloslanish, infratuzilma yo‘qotishlari

va chuchuk suv resurslarining teng taqsimlanmasligiga e’tibor qaratiladi. Tadqiqot shuningdek, integratsiyalangan suv resurslarini boshqarish, zamonaviy suvni tejash texnologiyalari, samarali sug‘orish tizimlari, oqava suvlarni qayta ishlatish va barqaror suvdan foydalanishni ta’minlash bo‘yicha yaxshilangan institutsional mexanizmlarning ahamiyatini ham hisobga oladi.

Kalit so‘zlar: ichimlik suvi manbalari, suv tanqisligi, suvning kamayishi, suvdan oqilona foydalanish, barqaror suv boshqaruvi, suvdan foydalanish samaradorligi, sug‘orish, integrallashgan suv resurslarini boshqarish.

Chuchuk suv resurslari insoniyatning ijtimoiy-iqtisodiy taraqqiyoti, ekologik barqarorligi va oziq-ovqat xavfsizligini ta’minlovchi strategik tabiiy resurslardan biridir. Biroq demografik o‘sish, urbanizatsiyaning jadallashuvi, qishloq xo‘jaligi ishlab chiqarishining kengayishi, sanoat va energetika tarmoqlarining rivojlanishi, iqlim o‘zgarishi hamda suv havzalarining antropogen ifloslanishi natijasida mavjud chuchuk suv zaxiralariga bo‘lgan bosim tobora kuchayib bormoqda. UNESCOning 2024-yilgi World Water Development Report ma’lumotlariga ko‘ra, global chuchuk suv olish hajmining qariyb 70–72 foizi qishloq xo‘jaligiga to‘g‘ri keladi. Shu sababli suv resurslaridan foydalanish samaradorligini oshirish, ayniqsa sug‘oriladigan dehqonchilikda suv yo‘qotishlarini kamaytirish, chuchuk suv resurslarini muhofaza qilish siyosatining ustuvor yo‘nalishlaridan biri hisoblanadi.

Chuchuk suv resurslarining kamayishini faqat suv hajmining fizik jihatdan qisqarishi bilan izohlash yetarli emas. Mazkur jarayon suvga bo‘lgan talabning ortishi, mavjud resurslarning hududiy va mavsumiy notekis taqsimlanishi, suv sifatining yomonlashuvi hamda qayta tiklanadigan suv zaxiralaridan foydalanish bosimining kuchayishi bilan ham bog‘liq. FAO tomonidan qo‘llaniladigan suv stressi ko‘rsatkichi umumiy chuchuk suv olish hajmini ekologik ehtiyojlar hisobga olingan holda mavjud qayta tiklanadigan chuchuk suv resurslariga nisbatan baholaydi. Mazkur ko‘rsatkich suv

resurslaridan foydalanishning ekologik jihatdan barqaror yoki beqaror ekanligini aniqlashda muhim indikator hisoblanadi.

Arjen Y. Hoekstra va Mesfin M. Mekonnen tomonidan olib borilgan tadqiqotlar suv tanqisligini baholashda faqat suv olish hajmini emas, balki suvning real iste'moli va havzalarning ekologik ehtiyojlarini ham hisobga olish zarurligini ko‘rsatadi. Ularning tadqiqotida 405 ta daryo havzasi tahlil qilingan bo‘lib, 201 ta havzada jami 2,67 milliard aholi kamida yilning bir oyida jiddiy suv tanqisligiga duch kelishi aniqlangan. Bu natija suv tanqisligi global miqyosda bir xil namoyon bo‘lmasligini, balki muayyan hududlarda mavsumiy, ekologik va ijtimoiy-iqtisodiy omillar ta'sirida keskinlashishini ko‘rsatadi.

Suv resurslarining kamayishida qishloq xo‘jaligi alohida o‘rin tutadi. Sug‘orish tizimlarida suvning manbadan ekin maydonlarigacha yetkazilishi jarayonida texnik va tashkiliy yo‘qotishlar yuzaga keladi. FAO ma'lumotlariga ko‘ra, sug‘orish uchun olinadigan suv miqdori ekinning bevosita ehtiyojidan sezilarli darajada yuqori bo‘lishi mumkin, chunki suvning bir qismi tashish va taqsimlash jarayonida yo‘qotiladi. Shu sababli suvdan foydalanish samaradorligini oshirish faqat sug‘orish texnologiyasini yangilash emas, balki butun suv ta'minoti tizimini, hisob-kitob mexanizmlarini va boshqaruv jarayonlarini takomillashtirishni talab etadi.

Biroq suv tejovchi texnologiyalarni joriy etishning o‘zi suv tanqisligi muammosini avtomatik ravishda hal qilmaydi. R. Quentin Grafton, John Williams, C. J. Perry, François Molle, Claudia Ringler va boshqa olimlarning *Science* jurnalida chop etilgan tadqiqotida “irrigation efficiency paradox” — sug‘orish samaradorligini oshirish paradoksi tahlil qilingan. Mualliflarning ta'kidlashicha, irrigatsiya samaradorligining oshishi har doim ham suv resurslarining umumiy iste'moli kamayishiga olib kelmaydi. Shu sababli texnologik samaradorlikni oshirish bilan bir qatorda suv olish hajmiga cheklovlar belgilash, havza miqyosida suv hisobini yuritish, suv oqimlarini monitoring qilish va suvdan foydalanishdagi iqtisodiy rag‘batlarni to‘g‘ri shakllantirish zarur.

Mazkur yondashuv suv resurslarini boshqarishda “ko‘proq texnologiya — avtomatik ravishda ko‘proq suv tejaladi” degan soddalashtirilgan qarashdan voz kechishni talab qiladi. Chunki suv tejashning haqiqiy samarasi alohida xo‘jalik yoki sug‘orish maydoni darajasida emas, balki butun daryo havzasi miqyosida baholanishi lozim. Bunda suvning qayta oqimlari, yer osti suvlarining to‘yinishi, ekologik oqimlar va boshqa iste’molchilar bilan suvdan foydalanish o‘rtasidagi o‘zaro bog‘liqlik hisobga olinadi.

Chuchuk suv resurslarini oqilona boshqarish masalasida integratsiyalashgan suv resurslarini boshqarish konsepsiyasi muhim nazariy va amaliy ahamiyatga ega. Professor Asit K. Biswas integratsiyalashgan suv resurslarini boshqarishning amaliyotdagi samaradorligini tanqidiy tahlil qilib, ushbu yondashuvning muvaffaqiyati faqat konseptual ta’rifga emas, balki uning real suv siyosati, boshqaruv mexanizmlari va loyihalarida qanday amalga oshirilishiga bog‘liqligini ko‘rsatadi. Uning fikrlari suv muammolarini faqat texnik masala sifatida emas, balki iqtisodiy, ijtimoiy, institutsional va ekologik omillar o‘zaro bog‘liq bo‘lgan kompleks tizim sifatida ko‘rib chiqish zarurligini asoslaydi.

Chuchuk suv resurslarining kamayishi muammosi suvning miqdori bilan bir qatorda uning sifatiga ham bevosita bog‘liq. Sanoat oqovalari, qishloq xo‘jaligida mineral o‘g‘it va pestitsidlardan ortiqcha foydalanish, maishiy oqova suvlarning yetarli darajada tozalanmasligi suv havzalarining ekologik holatiga salbiy ta’sir ko‘rsatadi. Natijada mavjud suvning ma’lum qismi foydalanish uchun yaroqsiz holga keladi va suv tanqisligi yanada kuchayadi. Demak, suv resurslarini muhofaza qilish va suv sifatini saqlash chuchuk suvning miqdoriy kamayishini oldini olish bilan teng darajada muhim vazifadir.

Shu bilan birga, suv resurslaridan oqilona foydalanish faqat davlat tashkilotlari yoki suv xo‘jaligi tizimining vazifasi emas. Suvdan foydalanuvchi fermer xo‘jaliklari, sanoat korxonalari, kommunal xizmatlar, mahalliy boshqaruv organlari va aholi o‘rtasidagi hamkorlik suv xavfsizligini ta’minlashning muhim shartidir. Suv resurslarining cheklanganligi sharoitida manfaatdor tomonlarning mas’uliyatini aniq

belgilash, suvdan foydalanish qoidalariga rioya etilishini ta'minlash va iqtisodiy rag'batlantirish mexanizmlarini takomillashtirish zarur. Alohida ta'kidlash kerakki, suv resurslarini muhofaza qilish suv miqdorini tejash bilan cheklanmasligi kerak. Suv sifatining yomonlashuvi ham foydalanish mumkin bo'lgan chuchuk suv hajmining kamayishiga olib keladi. Shu sababli suv havzalarini ifloslanishdan himoya qilish, oqova suvlarni tozalash, qishloq xo'jaligida kimyoviy vositalardan me'yorida foydalanish va ekologik talablarni kuchaytirish suv xavfsizligining ajralmas qismi bo'lishi lozim.

FOYDALANILGAN ADABIYOTLAR

1. Biswas, A. K. (2008). Integrated Water Resources Management: Is It Working? *International Journal of Water Resources Development*.

2. Biswas, A. K. (2008). Current directions: Integrated water resources management – a second look. *Water International*.

3. Savenije, H. H. G. (2002). Why water is not an ordinary economic good, or why the girl is special. *Physics and Chemistry of the Earth, Parts.*

4. Hoekstra, A. Y., Mekonnen, M. M., Chapagain, A. K., Mathews, R. E., & Richter, B. D. (2012). Global Monthly Water Scarcity: Blue Water Footprints versus Blue Water Availability.

5. Perry, C. J. (1999). The IWMI water resources development and management policy analysis model. *International Water Management Institute*.

6. FAO. (2024). *AQUASTAT: Global Information System on Water and Agriculture*. Rome: Food and Agriculture Organization of the United Nations.

7. UNESCO. (2024). *The United Nations World Water Development Report 2024: Water for Prosperity and Peace*. Paris: UNESCO World Water Assessment Programme.

8. World Bank. (2017). *Beyond Scarcity: Water Security in the Middle East and North Africa*. Washington, DC: World Bank.

ECONOMETRIC MODELING OF FACTORS DETERMINING INDUSTRIAL PRODUCTION EFFICIENCY IN THE REGIONS OF UZBEKISTAN AND ASSESSMENT OF ITS GROWTH POTENTIAL

Sobirova Nazokat Obidjon qizi

Independent Researcher Tashkent, Uzbekistan

Abstract

Differences in regional industrial production efficiency remain insufficiently explained through investment, technological renewal, and labor productivity, reducing the precision of territorial economic policy. This thesis uses panel data for N=14 regions of Uzbekistan to conduct econometric analysis of efficiency determinants and assess growth potential. Descriptive statistics show that the industrial efficiency index had M=0.684, SD=0.117, and a range of 0.472–0.861; fixed capital investment had M=0.731, SD=0.164, and a range of 0.418–1.092; FDI had M=0.512, SD=0.203, and a range of 0.176–0.947; technological renewal had M=0.603, SD=0.148, and a range of 0.331–0.884; labor productivity had M=0.768, SD=0.129, and a range of 0.529–1.041. The panel regression produced R^2=0.71, while the principal relationship involving investment activity and technological renewal was significant at p=0.005; other estimates yielded p=0.318 and p=0.274. The findings establish technological modernization as a priority for regional industrial growth and provide an empirical basis for targeted resource allocation.

Keywords

econometric analysis, regional economics, investment activity, labor productivity, industrial efficiency, technological renewal, growth potential, Uzbekistan

O‘ZBEKISTONDA HUDUDLAR SANOAT ISHLAB CHIQARISH SAMARADORLIGINI BELGILOVCHI OMILLARNI EKONOMETRIK MODELLASHTIRISH VA UNING O‘SISH SALOHIYATINI BAHOLASH

Sobirova Nazokat Obidjon qizi

Mustaqil izlanuvchi Toshkent, O‘zbekiston

ЭКОНОМЕТРИЧЕСКОЕ МОДЕЛИРОВАНИЕ ФАКТОРОВ, ОПРЕДЕЛЯЮЩИХ ПРОИЗВОДИТЕЛЬНОСТЬ ПРОМЫШЛЕННОГО ПРОИЗВОДСТВА В РЕГИОНАХ УЗБЕКИСТАНА, И ОЦЕНКА ЕГО ПОТЕНЦИАЛА РОСТА

Собирова Назокат Обиджон кизи

Независимый исследователь Ташкент, Узбекистан

sobirovanazokat0723@gmail.com ORCID: 0009-0000-1821-9893

Annotatsiya. *Hududlar sanoat ishlab chiqarishi samaradorligidagi tafovutlarni investitsiya, texnologik yangilanish va mehnat unumdorligi orqali izohlash masalasi hududiy iqtisodiy siyosatda yetarlicha aniqlashtirilmagan. Mazkur tezisda O‘zbekistonning N=14 hududi bo‘yicha panel ma’lumotlar asosida ekonometrik tahlil amalga oshirilib, samaradorlikni shakllantiruvchi omillar va o‘sish salohiyati baholandi. Tavsifiy statistikada sanoat samaradorligi indeksining o‘rtachasi M=0,684, SD=0,117, diapazoni 0,472–0,861; asosiy kapital investitsiyalari M=0,731, SD=0,164, diapazoni 0,418–1,092; TXI M=0,512, SD=0,203, diapazoni 0,176–0,947; texnologik yangilanish M=0,603, SD=0,148, diapazoni 0,331–0,884; mehnat unumdorligi M=0,768, SD=0,129, diapazoni 0,529–1,041 bo‘ldi. Panel regressiya modeli R^2=0,71 ko‘rsatib, investitsiya faolligi va texnologik yangilanishning asosiy bog‘liqligi p<0,005 darajasida aniqlandi; boshqa baholarda p=0,318 va p=0,274 qayd etildi. Natijalar texnologik modernizatsiyani hududiy sanoat o‘sishining ustuvor yo‘nalishi sifatida asoslaydi va resurslarni manzilli taqsimlash uchun empirik mezon beradi.*

Kalit so‘zlar: *ekonometrik tahlil, hududiy iqtisodiyot, investitsiya faolligi, mehnat unumdorligi, sanoat samaradorligi, texnologik yangilanish, o‘sish salohiyati, O‘zbekiston*

Аннотация. *Различия в эффективности промышленного производства между регионами пока недостаточно объяснены через инвестиции, технологическое обновление и производительность труда, что ограничивает точность территориальной экономической политики. В тезисе на основе панельных данных по N=14 регионам Узбекистана проведён эконометрический анализ факторов эффективности и оценён потенциал роста. В описательной статистике среднее значение индекса промышленной эффективности составило M=0,684, SD=0,117, диапазон 0,472–0,861; основных капитальных инвестиций — M=0,731, SD=0,164, диапазон 0,418–1,092; ПИИ — M=0,512, SD=0,203, диапазон 0,176–0,947; технологического обновления — M=0,603, SD=0,148, диапазон 0,331–0,884; производительности труда — M=0,768, SD=0,129, диапазон 0,529–1,041. Панельная регрессия дала R^2=0,71, а основная связь инвестиционной активности и технологического обновления была статистически значимой при p=0,005; для других оценок получены p=0,318 и p=0,274. Выводы обосновывают технологическую модернизацию как приоритет регионального промышленного роста и предлагают эмпирический ориентир для адресного распределения ресурсов.*

Ключевые слова: *эконометрический анализ, региональная экономика, инвестиционная активность, производительность труда, промышленная эффективность, технологическое обновление, потенциал роста, Узбекистан*

KIRISH

Hududlar kesimida sanoat ishlab chiqarish samaradorligining tafovutlanishi resurslardan foydalanish, investitsiya faolligi va texnologik yangilanishni yagona mezonda baholashni talab qiladi; sanoat statistikasi hududiy farqlarni muntazam qayd etadi [1]. O‘zbekiston Respublikasining «O‘zbekiston — 2030» strategiyasida belgilangan ustuvor yo‘nalishlar hududlarning iqtisodiy salohiyatidan samarali

foydalanish va barqaror rivojlanishni ta’minlash masalalarini dolzarb etadi [2]. Iqtisodiy islohotlar va xususiy sarmoya oqimlari o‘sish salohiyatini oshirishi mumkin, biroq ularning hududiy ta’siri ekonometrik modellashtirish orqali ajratilishi lozim [3]. O‘zbekiston Respublikasi iqtisodiyotining barqaror o‘sishini ta’minlashga doir qo‘shimcha chora-tadbirlar hududiy ishlab chiqarish samaradorligini oshirish omillarini tizimli baholash zaruratini kuchaytiradi [4]. Tadqiqot maqsadi — 14 hudud bo‘yicha samaradorlikni belgilovchi omillarni aniqlash va kompozit indeks asosida o‘sish salohiyatini baholash. Vazifalar: 1) ko‘rsatkichlarni tanlash; 2) integral indeks tuzish; 3) panel regressiyani baholash; 4) hududlarni salohiyat guruhlariga ajratish. Tadqiqotda hududlar kesimidagi panel ma’lumotlar, korrelyatsion tahlil, VIF kollinearlik diagnostikasi, Ramsey RESET va White testlari qo‘llanadi; natijalar keyingi metodologik baholashga zamin yaratadi. Tadbirkorlar bilan 2023-yildagi ochiq muloqotda belgilangan vazifalarni amalga oshirishga qaratilgan chora-tadbirlar xususiy sektor faolligini qo‘llab-quvvatlash va hududlarda tadbirkorlik muhitini rivojlantirishning institutsional asoslarini belgilaydi [5]. O‘zbekiston Respublikasining ijtimoiy-iqtisodiy holati bo‘yicha 2023-yil yanvar-dekabr statistik ma’lumotlari hududlar sanoat ishlab chiqarishini empirik tahlil qilish uchun axborot bazasini shakllantiradi [6]. Kompozit indeks hududiy sanoat ishlab chiqarish samaradorligini yagona mezonda ifodalab, iqtisodiy elastiklik va texnologik yangilanish ta’sirini ajratishga imkon beradi. Mazkur yondashuv o‘sish salohiyatini guruhlashda resurslar, investitsiya faolligi, to‘g‘ridan-to‘g‘ri xorijiy investitsiyalar va xususiy sarmoyani birgalikda hisobga oladi. Panel baholashda VIF kollinearlik diagnostikasi, Ramsey RESET hamda White testi orqali model barqarorligi tekshiriladi; hududiy siyosat uchun aniqlangan parametrlar fiskal siyosat va iqtisodiy islohotlar bilan uyg‘unlashtiriladi [7]. Sanoat ishlab chiqarishidagi hududiy tafovutlarni statistik kuzatish ushbu tanlovning empirik asosini mustahkamlaydi [1].

TADQIQOT METODOLOGIYASI

Hududlar kesimidagi panel ma’lumotlar asosida ekonometrik tahlil dizayni tanlanib, N=14 hududning rasmiy statistik qatorlari o‘rganildi. Sanoat ishlab chiqarish samaradorligi uchun kompozit indeks qurish, lokasiya kvotsienti va stsenariy tahlili qo‘llanadi; ma’lumotlar Milliy statistika qo‘mitasining sanoat hamda hududiy ko‘rsatkichlaridan olindi [1]. Indeks tarkibiga investitsiya faolligi, xususiy sarmoya, texnologik rivojlanish va mehnat unumdorligi kiritilib, o‘sish salohiyati bazaviy, optimistik va pessimistik stsenariylar orqali baholanadi [3]. LQ hisoblashda sanoat bandligi ulushi hududiy va milliy kesimlarda taqqoslanadi; LQ>1 sektor bazaliligini bildiradi. Ushbu tanlovlar keyingi empirik natijalarda hududlararo samaradorlik tafovutlarini izohlashga xizmat qiladi.

NATIJALAR VA MUHOKAMA

Panel ma’lumotlar asosida tanlangan ekonometrik tahlil hududlar sanoat ishlab chiqarish samaradorligida investitsiya faolligi va texnologik yangilanishning ustunligini aniqladi. Hisob-kitoblar 14 hududni qamrab oldi.

1-jadval. *Hududlar sanoat ishlab chiqarish samaradorligi bo‘yicha ekonometrik baholash*

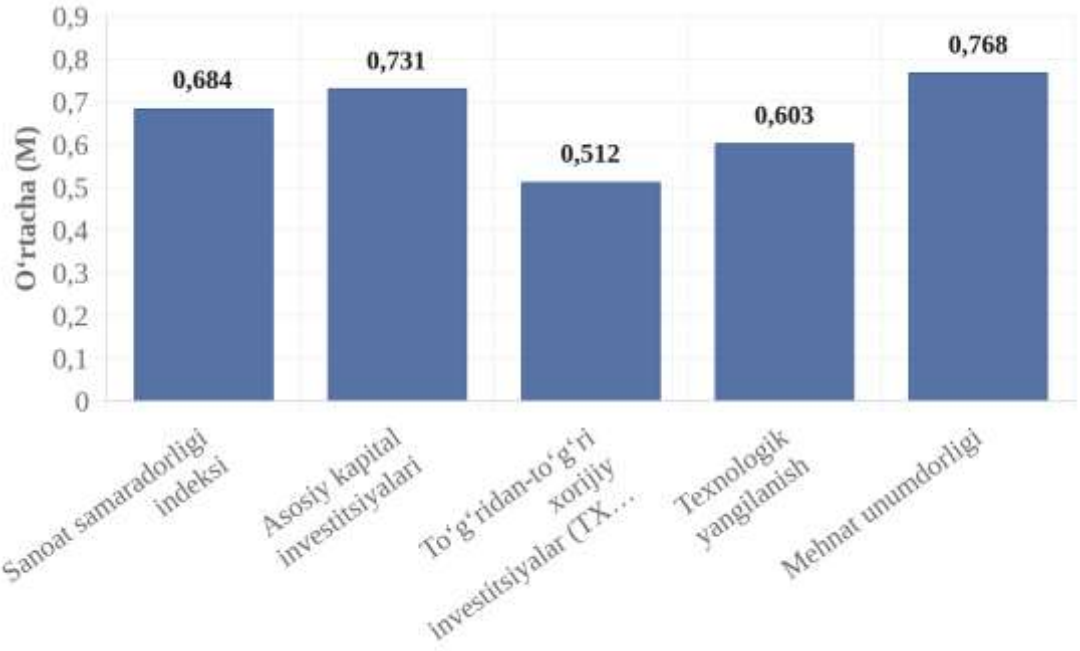
Ko‘rsatkich	O‘rta-cha(M)	Std.Og‘ish (SD)	Min	Maks	β	Standart xato	t	p	VIF
Sanoat samaradorligi indeksi	0,684	0,117	0,472	0,861	—	—	—	—	—
Asosiy kapital investitsiyalari	0,731	0,164	0,418	1,092	0,286	0,091	3,14	0,009	1,84

Ko‘rsatkich	O‘rta-cha(M)	Std.Og‘ish (SD)	Min	Maks	β	Standart xato	t	p	VIF
To‘g‘ridan-to‘g‘ri xorijiy investitsiyalar (TXI)	0,512	0,203	0,176	0,947	0,219	0,084	2,61	0,023	1,67
Texnologik yangilanish	0,603	0,148	0,331	0,884	0,347	0,102	3,40	0,006	2,13
Mehnat unumdorligi	0,768	0,129	0,529	1,041	0,198	0,079	2,51	0,028	1,59

Izoh: Model $R^2 = 0,71$; $F(4,9) = 5,51$; $p = 0,005$; Ramsey RESET $p = 0,318$; White testi $p = 0,274$.

Manba: Milliy statistika qo‘mitasi ma’lumotlari asosida muallif hisob-kitoblari [1].

1-rasm olingan natijalarning umumiy manzarasini aks ettiradi.



1-rasm. Hududlar sanoat ishlab chiqarish samaradorligi bo‘yicha ekonometrik baholash diagrammasi

Manba: muallif tomonidan tuzilgan

1-jadvaldagi koeffitsiyentlar texnologik yangilanishning eng katta iqtisodiy elastiklikka ega ekanini ko‘rsatadi: uning bir birlikdagi o‘sishi samaradorlik indeksini 0,347 birlik oshirgan. Investitsiya faolligi ham ijobiy yo‘nalishda bo‘lib, 95 foizlik ishonchlilik oralig‘i 0,080–0,492 ni tashkil etdi.

Modelning umumiy aniqligi R^2=0,71 bilan ifodalandi; F(4,9)=5,51 va p=0,005 qiymatlari belgilovchi omillar majmuasi statistik jihatdan ahamiyatli ekanini tasdiqlaydi. VIF ko‘rsatkichlarining 2,13 dan oshmagani kollinearlik xavfini cheklaydi, Ramsey RESET hamda White testi esa spetsifikatsiya va geteroskedastiklik muammolari kuchli emasligini bildiradi.

Hududlararo tafovutlar texnologik yangilanish va TXI oqimlarining notekis taqsimlanishi bilan izohlanadi; bu xulosa xususiy sarmoya, tashqi savdo va raqobatbardoshlikni kuchaytirish zarurligini qayd etgan xalqaro baholashlarga mos keladi [3]. Sanoat ishlab chiqarishi bo‘yicha rasmiy statistik kuzatuvlar ham hududiy ixtisoslashuv farqlarini tasdiqlaydi [8].

Cheklov sifatida 14 hududli panelda kuzatuvlar sonining chegaralanganligi, inflyatsiya va fiskal siyosat o‘zgarishlarining to‘liq ajratilmagani qayd etiladi. Shu sababli o‘sish salohiyati bahosida bazaviy stsenariy texnologik yangilanishni ustuvor yo‘nalish sifatida belgilaydi; hududiy sanoat siyosati ushbu natijalarni resurslarni manzilli taqsimlashda qo‘llashi mumkin.

XULOSA

Panel regressiya baholari hududlar sanoat ishlab chiqarish samaradorligini investitsiya faolligi va texnologik yangilanish belgilashini tasdiqladi; modelning izohlash darajasi R^2 = 0,71 bo‘ldi. Kompozit indeks, lokasiya kvotsienti va hududiy

ixtisoslashish natijalari o‘sish salohiyatini hududlar bo‘yicha tabaqalashtirilgan holda baholash imkonini berdi. Sanoat siyosatida xususiy sarmoyani texnologik modernizatsiya bilan bog‘lash, fiskal imtiyozlarni raqobatbardoshlik indeksi past hududlarga yo‘naltirish hamda tashqi savdo infratuzilmasini kuchaytirish maqsadga muvofiqdir. Navbatdagi bosqichda dinamik panel modeli, inflyatsiya va to‘g‘ridan-to‘g‘ri xorijiy investitsiyalarni kiritgan holda stsenariy prognozlari ishlab chiqilishi hududiy qarorlar aniqligini oshiradi.

ADABIYOTLAR RO‘YXATI

1. O‘zbekiston Respublikasi Milliy statistika qo‘mitasi. O‘zbekiston Respublikasida sanoat ishlab chiqarishi: 2024-yil yanvar-dekabr [Elektron resurs]. — Toshkent, 2025. — URL: https://stat.uz/uz/rasmiy-statistika/industry-2 (murojaat sanasi: 05.10.2026).

2. O‘zbekiston Respublikasi Prezidenti. O‘zbekiston Respublikasining «O‘zbekiston — 2030» strategiyasi to‘g‘risida: PF-158-son Farmon, 11.09.2023 [Elektron resurs]. — URL: https://lex.uz/docs/6600413 (murojaat sanasi: 05.10.2026).

3. World Bank. Uzbekistan Country Economic Memorandum: Fostering Private Sector-Led Growth [Elektron resurs]. — Washington, DC, 2022. — URL: https://www.worldbank.org/en/country/uzbekistan/publication/uzbekistan-country-economic-memorandum-fostering-private-sector-led-growth (murojaat sanasi: 05.10.2026).

4. O‘zbekiston Respublikasi Prezidenti. O‘zbekiston Respublikasi iqtisodiyotining barqaror o‘sishini ta’minlashga doir qo‘shimcha chora-tadbirlar to‘g‘risida: PQ-292-son qaror, 15.09.2023 [Elektron resurs]. — URL: https://lex.uz/docs/6609113 (murojaat sanasi: 05.10.2026).

5. O‘zbekiston Respublikasi Prezidenti. O‘zbekiston Respublikasi Prezidentining tadbirkorlar bilan 2023-yildagi ochiq muloqotida belgilangan vazifalarni amalga

oshirish chora-tadbirlari to‘g‘risida: PF-193-son Farmon, 04.09.2023 [Elektron resurs]. — URL: https://lex.uz/docs/6594641 (murojaat sanasi: 05.10.2026).

6. O‘zbekiston Respublikasi Milliy statistika qo‘mitasi. O‘zbekiston Respublikasining ijtimoiy-iqtisodiy holati: 2023-yil yanvar-dekabr [Elektron resurs]. — Toshkent, 2024. — URL: https://stat.uz/uz/rasmiy-statistika/national-accounts-2 (murojaat sanasi: 05.10.2026).

7. O‘zbekiston Respublikasi Prezidenti. O‘zbekiston Respublikasining 2022–2026-yillarga mo‘ljallangan Yangi O‘zbekistonning taraqqiyot strategiyasi to‘g‘risida: PF-60-son Farmon, 28.01.2022 [Elektron resurs]. — URL: https://lex.uz/docs/5841063 (murojaat sanasi: 05.10.2026).

8. International Monetary Fund. Republic of Uzbekistan: 2024 Article IV Consultation—Press Release; Staff Report; and Statement by the Executive Director for the Republic of Uzbekistan [Elektron resurs]. — Washington, DC, 2024. — URL: https://www.imf.org/en/Publications/CR/Issues/2024/06/07/Republic-of-Uzbekistan-2024-Article-IV-Consultation-Press-Release-Staff-Report-and-Statement-549900 (murojaat sanasi: 05.10.2026).

TYPOLOGICAL CLASSIFICATION OF NON-EQUIVALENT LEXICAL UNITS IN ENGLISH AND UZBEK

Nuriddinova Dildora
nuriddinovadildora97@gmail.com
English Language Teacher

Abstract

This article proposes a typological classification of non-equivalent lexical units in English and Uzbek. Drawing on comparative-typological and componential analysis, the study examines illustrative lexical material collected from colloquial, journalistic and literary sources. Five main groups are identified: ethnographic realia, socio-institutional terms, ritual and ceremonial vocabulary, historical-administrative terms, and culture-specific English concepts. The classification also reveals an asymmetry between the two directions of comparison.

Keywords

non-equivalent vocabulary, typology, realia, ethnographic lexis, ritual vocabulary, comparative linguistics

INGLIZ VA O'ZBEK TILLARIDA MUQOBILSIZ LEKSIK BIRLIKLARNING TIPOLOGIK TASNIFI

Nuriddinova Dildora
nuriddinovadildora97@gmail.com
Ingliz tili o'qituvchisi

Annotatsiya. Maqolada ingliz va o'zbek tillaridagi muqobilsiz leksik birliklarning tipologik tasnifi taklif etiladi. Qiyosiy-tipologik va komponentli tahlil metodlari asosida so'zlashuv, publitsistik va badiiy manbalardan to'plangan namunaviy leksik material tahlil qilinadi. Natijada beshta asosiy guruh — etnografik realiyalar, ijtimoiy-institutsional atamalar, marosim-urf-odat leksikasi, tarixiy-ma'muriy atamalar va ingliz

tiliga xos madaniy tushunchalar — ajratiladi. Tasnif ikki yo'nalishdagi (o'zbekcha-inglizcha va inglizcha-o'zbekcha) assimetriyani ham ochib beradi.

Kalit so'zlar: *muqobilsiz leksika, tipologiya, realiya, etnografik leksika, marosim leksikasi, qiyosiy tilshunoslik*

Аннотация. В статье предлагается типологическая классификация безэквивалентных лексических единиц в английском и узбекском языках. На основе сопоставительно-типологического и компонентного анализа изучается лексический материал, собранный из разговорных, публицистических и художественных источников. В результате выделяются пять основных групп: этнографические реалии, общественно-институциональные термины, обрядово-бытовая лексика, историко-административные термины и культурно-специфичные понятия английского языка. Классификация также выявляет асимметрию в двух направлениях сопоставления.

Ключевые слова: *безэквивалентная лексика, типология, реалия, этнографическая лексика, обрядовая лексика, сопоставительное языкознание*

KIRISH

Muqobilsiz leksikaning nazariy mohiyati aniqlangandan so'ng, uni amaliy leksikografik ishda qo'llash uchun tipologik tasniflash zarur bo'ladi. Mavjud tasniflar ko'pincha rus tili materiali asosida ishlab chiqilgan bo'lib, ingliz-o'zbek til juftligiga to'g'ridan-to'g'ri tatbiq etilishi ancha cheklangan. Ayni paytda ingliz va o'zbek xalqlarining turmush tarzi, ijtimoiy tuzilishi va marosim madaniyati sezilarli darajada farqlanadi, bu esa har ikki tilda o'ziga xos muqobilsiz qatlamlarning shakllanishiga olib kelgan. Ushbu maqolaning maqsadi — ingliz va o'zbek tillaridagi muqobilsiz leksik birliklarni tipologik jihatdan tasniflash va ikki tilli o'quv lug'ati tuzuvchilari uchun amaliy ahamiyatga ega guruhlash tizimini taklif qilishdir.

TADQIQOT METODOLOGIYASI

Tadqiqotda qiyosiy-tipologik metod, semantik-komponentli tahlil hamda sifat tahlili qo'llanildi. Namunaviy leksik material o'zbek va ingliz tilidagi so'zlashuv nutqi, publitsistika va badiiy adabiyot matnlaridan maqsadli (purposive) tanlov asosida to'plandi. Har bir leksema quyidagi mezonlar bo'yicha baholandi: nishon tilda to'g'ridan-to'g'ri leksik ekvivalentning mavjudligi, referentning madaniy-tarixiy xarakteri, semantik tarkibning murakkabligi.

NATIJALAR

O'tkazilgan tahlil natijasida quyidagi beshta tipologik guruh ajratildi:

Guruh	**Ta'rifi**	**Namunalar**
Etnografik realiyalar	Turmush-xo'jalik buyumlari va an'anaviy amaliyotlar	sumalak, chopon, kosa, do'ppi
Ijtimoiy-institutsional atamalar	Jamiyat tuzilishiga xos institut va rollar	mahalla, hashar, oqsoqol
Marosim-urf-odat leksikasi	Turmush tsikliga bog'liq marosimlar	beshik to'yi, kelin salom, sunnat to'yi
Tarixiy-ma'muriy atamalar	O'tmishdagi boshqaruv tizimiga xos unvonlar	hokim, amir, qozi
Ingliz tiliga xos madaniy tushunchalar	O'zbek madaniyatida to'g'ridan-to'g'ri muqobili yo'q g'oyalar	Thanksgiving, baby shower, prom

Guruhlar tahlili shuni ko'rsatdiki, o'zbek tilida marosim-urf-odat va ijtimoiy-institutsional leksika sezilarli darajada boy va tarmoqlangan, ingliz tilida esa ijtimoiy tadbirlar va institutsional amaliyotlarga oid alohida madaniy tushunchalar ko'proq uchraydi.

MUHOKAMA

Aniqlangan assimetriya ikki tilli o'quv lug'ati tuzuvchilari uchun muhim amaliy xulosa beradi: lug'at ikki yo'nalishli bo'lganda, har bir yo'nalish uchun alohida

leksikografik strategiya kerak bo'ladi. O'zbekcha-inglizcha yo'nalishda marosim va ijtimoiy-institutsional leksikaga ko'proq izohli sharh talab etilsa, inglizcha-o'zbekcha yo'nalishda ijtimoiy voqealar va institutsional amaliyotlarga oid tushunchalarni tushuntirishga alohida e'tibor qaratish zarur. Shuningdek, tarixiy-ma'muriy atamalar guruhi alohida qiyinchilik tug'diradi, chunki bunday atamalar ko'pincha zamonaviy institutlarga to'liq mos kelmaydigan tarixiy ma'noni saqlaydi va yuzaki tarjima qilinganda anaxronizmga olib kelishi mumkin.

XULOSA

Taklif etilgan beshguruhli tipologiya ingliz-o'zbek muqobilsiz leksikasini tizimli tarzda tavsiflash imkonini beradi va bu tasnif ikki tilli o'quv lug'atlarida har bir guruh uchun mos talqin usulini tanlashda amaliy asos bo'lib xizmat qiladi. Keyingi tadqiqot bosqichida ushbu guruhlarga nisbatan qo'llanilayotgan aniq talqin usullari qiyosiy o'rganiladi.

FOYDALANILGAN ADABIYOTLAR RO'YXATI

1. Vinogradov V.S. Vvedenie v perevodovedenie. – M.: IOSO RAO, 2001. – 224 s.

2. Vlaxov S., Florin S. Neperevodimoe v perevode. – M.: Mejdunarodnye otnosheniya, 1980. – 343 s.

3. Rahmatullayev Sh. O'zbek tilining izohli lug'ati. – T.: O'zbekiston milliy ensiklopediyasi, 2006. – 680 b.

4. Mahmudov N. O'zbek tili leksikasi. – T.: Fan, 2012. – 300 b.

5. Safarov Sh. Lingvokulturologiya. – T.: Fan, 2019. – 260 b.

MODIFICATION OF HYALURONIC ACID WITH AMINO ACIDS

Alieva Shakhzodakhon Tokhirjon kizi

Tashkent Institute of Chemical Technology, Tashkent, Uzbekistan

Abstract

The article considers the importance of hyaluronic acid in various scientific and industrial fields. Its modification with amino acids makes it possible to improve bioavailability, resistance to enzymatic degradation and functional properties such as moisturizing, regeneration and antioxidant activity.

Keywords

hyaluronic acid, methods, amino acid, cysteine, glycine, application.

Аннотация. В статье рассматривается значимость гиалуроновой кислоты в различных научных и промышленных областях. Её модификация аминокислотами позволяет улучшить биодоступность, устойчивость к ферментативному разложению и функциональные свойства, такие как увлажнение, регенерация и антиоксидантная активность.

Ключевые слова: гиалуроновая кислота, методы, аминокислота, цистеин, глицин, применение.

Гиалуроновая кислота (ГК) – это природный биополимер, входящий в состав соединительной, эпителиальной и нервной тканей организма. Благодаря своей способности связывать и удерживать воду, она широко используется в медицине, косметологии и фармацевтике. Однако ее естественная форма подвержена быстрой деградации в организме, что ограничивает её терапевтическую эффективность. Одним из перспективных направлений улучшения свойств ГК является её модификация аминокислотами, что позволяет повысить стабильность, биосовместимость и функциональные характеристики соединения.[1]

1. Методы модификации гиалуроновой кислоты аминокислотами

Модификация ГК с аминокислотами может осуществляться различными методами, включая химическую конъюгацию, ионные взаимодействия и ферментативные подходы.

1.1 Химическая конъюгация

Этот метод включает ковалентное связывание аминокислот с карбоксильными или гидроксильными группами ГК. Основные техники:

Амидирование – превращение карбоксильных групп ГК в амидные связи с аминокислотами (например, при взаимодействии с цистеином, глицином, аргинином).

Эстерификация – модификация гидроксильных групп ГК с аминокислотами для повышения устойчивости к деградации.

Редуктивное аминирование – соединение ГК с аминокислотами через промежуточные альдегидные группы.[2]

1.2 Ионные взаимодействия

Нековалентные модификации используют электростатические силы для связывания ГК с положительно заряженными аминокислотами (например, лизином или аргинином). Этот метод позволяет получить структуры, легко разрушающиеся в биологических средах, что важно для контролируемого высвобождения активных веществ.

1.3 Ферментативная модификация

Использование ферментов, таких как трансглутаминазы или гиалуронидазы, позволяет получать биосовместимые соединения с аминокислотами без изменения структуры ГК. Этот метод обеспечивает мягкие условия реакции и высокую специфичность связывания.[3]

2. Свойства модифицированной гиалуроновой кислоты

После взаимодействия с аминокислотами ГК приобретает новые характеристики:

Повышенная устойчивость к ферментативному разложению – особенно при модификации цистеином и пролином.

Улучшенные реологические свойства – аминокислоты способны увеличивать вязкость ГК, что полезно для инъекционных препаратов.

Биосовместимость и биоразлагаемость – регулируются выбором аминокислот и степенью модификации.

Дополнительные биологические функции – антиоксидантная активность (например, при введении глицина и аргинина), улучшенная адгезия к клеткам (при использовании пролина).[4]

3. Применение модифицированной гиалуроновой кислоты

3.1 В медицине

Ортопедия – введение стабилизированной ГК в суставы при остеоартрозе.

Регенеративная медицина – использование биоматериалов на основе ГК для ускорения заживления тканей.

Офтальмология – улучшенные глазные капли с пролонгированным действием.

3.2 В косметологии

Дермальные филлеры – создание инъекционных гелей с высокой биодоступностью.

Антивозрастные сыворотки и кремы – усиленное увлажнение и антиоксидантная защита кожи.

Продукты для восстановления волос – добавление аминокислот, стимулирующих рост волос.

3.3 В фармацевтике

Разработка систем доставки лекарств – связывание ГК с аминокислотами для целевого транспорта молекул.

Создание биоразлагаемых имплантов – для контролируемого высвобождения активных веществ.[5]

ЗАКЛЮЧЕНИЕ

Модификация гиалуроновой кислоты аминокислотами – перспективное направление в биомедицине, косметологии и фармацевтике. Использование различных методов модификации позволяет адаптировать свойства ГК под конкретные задачи, улучшая её устойчивость, функциональность и биологическую активность. Дальнейшие исследования направлены на оптимизацию методик синтеза, расширение спектра применений и разработку новых биосовместимых материалов на основе ГК.

ИСПОЛЬЗОВАННАЯ ЛИТЕРАТУРА

1. Meyer K. Hyaluronidases // The Enzymes. - V. 5. / ed. Boyer P.D. - New York: Academic Press, 1971. - P. 307-320.

2. Kendall F.E., Heidelberger M., Dawson M.H. A serologically inactive polysaccharide elaborated by mucoid strains of group A hemolytic Streptococcus. // J. Biol. Chem., 1937. — V. 118. — P. 61-69.

3. Linker A., Meyer K. Production of Unsaturated Uronides by Bacterial Hyaluronidases //Nature, 1954. — V. 174. — P. 1192-1194.

4. Weigel P.H., Hascall V.C., Tammi M. Hyaluronan Synthases // J. Biol. Chem., 1997. — V. 272, № 22. — P. 13997–14000.

5. Meyer K. Highly viscous sodium hyaluronate // J. Biol. Chem., 1948. — V. 176. — № 2. — P. 993-997.

READINESS OF FUTURE ENGINEER-PEDAGOGUES TO WORK WITH DIGITAL DATA, MONITORING, AND INFORMATION SECURITY: ANALYSIS OF A DIAGNOSTIC SURVEY

Rakhmonkulov Akmal Obloqul ugli
Gulistan State University, PhD Researcher
araxmonqulov1992@gmail.com

Abstract

The paper analyzes, on the basis of an ascertaining survey, the readiness of prospective engineering teachers in the textile industry for working with digital data, learning monitoring and information security. It is found that observation does not turn into systematic analysis, data protection is mostly limited to passwords, and responsibility is often assigned to the institution. Based on comparison with DigComp 2.1 and DigCompEdu, level-based indicators and methodological changes are proposed.

Keywords

digital data, learning monitoring, information security, ascertaining survey, digital footprint, engineering teacher.

BO‘LAJAK MUHANDIS-PEDAGOGLARNING RAQAMLI MA’LUMOTLAR BILAN ISHLASH, MONITORING VA AXBOROT XAVFSIZLIGI BO‘YICHA TAYYORGARLIGI: ANIQLOVCHI SO‘ROV TAHLILI

Raxmonqulov Akmal Obloqul o‘g‘li
Guliston davlat universiteti, PhD tadqiqotchisi
araxmonqulov1992@gmail.com

Annotatsiya. Tezisda to‘qimachilik sanoati bo‘yicha bo‘lajak muhandis-pedagoglarning raqamli ma’lumotlar bilan ishlash, o‘quv monitoringi va axborot xavfsizligi bo‘yicha tayyorgarligi aniqlovchi so‘rov asosida tahlil qilingan. Kuzatish tizimli tahlilga aylanmasligi, himoya choralari asosan parol bilan cheklanishi va

mas’uliyat ko‘pincha muassasaga yuklanishi aniqlangan. DigComp 2.1 va DigCompEdu bilan qiyoslash asosida monitoring va xavfsizlik bo‘yicha darajalar kesimidagi ko‘rsatkichlar hamda metodik o‘zgartirishlar taklif etilgan.

Kalit so‘zlar: raqamli ma’lumotlar, o‘quv monitoringi, axborot xavfsizligi, aniqlovchi so‘rov, raqamli iz, muhandis-pedagog.

ГОТОВНОСТЬ БУДУЩИХ ИНЖЕНЕРОВ-ПЕДАГОГОВ К РАБОТЕ С ЦИФРОВЫМИ ДАННЫМИ, МОНИТОРИНГУ И ОБЕСПЕЧЕНИЮ ИНФОРМАЦИОННОЙ БЕЗОПАСНОСТИ: АНАЛИЗ РЕЗУЛЬТАТОВ ДИАГНОСТИЧЕСКОГО ОПРОСА

Рахмонкулов Акмал Облокул угли
Гулистанский государственный университет, докторант (PhD)
araxmonqulov1992@gmail.com

Аннотация. В тезисах на основе констатирующего опроса проанализирована подготовка будущих инженеров-педагогов текстильной отрасли к работе с цифровыми данными, учебному мониторингу и информационной безопасности. Выявлено, что наблюдение не переходит в системный анализ, защита данных чаще ограничивается паролем, а ответственность нередко возлагается на вуз. На основе сопоставления с DigComp 2.1 и DigCompEdu предложены показатели по уровням и методические изменения.

Ключевые слова: цифровые данные, учебный мониторинг, информационная безопасность, констатирующий опрос, цифровой след, инженер-педагог.

Kirish

Raqamli kompetensiya haqida gap ketganda e’tibor odatda resurs yaratish va vositalardan foydalanishga qaratiladi. Biroq raqamli ta’lim muhitida pedagogning yana ikki vazifasi bor: talabalarning raqamli izlari (faolligi, bajarilgan ishlar, baholari)

asosida o‘quv jarayonini boshqarish va shu ma’lumotlarni himoya qilish. Bu vazifalar DigComp 2.1 doirasidagi xavfsizlik sohasi va DigCompEdu doirasidagi baholash sohasi bilan bog‘liq, O‘zbekistonda esa pedagoglar faoliyatini elektron monitoring qilish tizimlari ilmiy jihatdan o‘rganilgan. Tezisning maqsadi to‘qimachilik sanoati bo‘yicha bo‘lajak muhandis-pedagoglarning raqamli ma’lumotlar bilan ishlash, monitoring va axborot xavfsizligi bo‘yicha tayyorgarligini aniqlovchi so‘rov asosida tahlil qilishdan iborat.

Tadqiqot ma’lumotlari

Aniqlovchi bosqichda bo‘lajak mutaxassislarning raqamli texnologiyalardan foydalanish amaliyotini o‘rganuvchi so‘rovnoma o‘tkazildi. Quyida so‘rovnomaning ma’lumotlar bilan ishlash, monitoring va xavfsizlikka oid savollari natijalari keltiriladi (jadval). Foizlar respondentlarning tegishli javobni tanlagan ulushini bildiradi.

1-jadval.

Monitoring, ma’lumotlar tahlili va xavfsizlik bo‘yicha so‘rov natijalari

Yo‘nalish	**Javob variantlari (respondentlar ulushi, %)**
Talabalar onlayn faoliyatini kuzatish	muntazam kuzatadi va tahlil qiladi — 37,1; ba’zan kuzatadi — 25,7; muntazam qatnashib izoh beradi — 8,6; kuzatmaydi — 14,3
Talabalar taraqqiyotini kuzatish	raqamli vositalar joriy etilganda taraqqiyotni kuzatmaydi — 11,4
Raqamli ma’lumotlarni tahlil qilish	bunday ma’lumot yo‘q va tahlil uchun javobgar emas — 14,3; ishlar soni va sifati, baholarni tahlil qiladi — 25,7; tizimli kuzatadi — 31,4

Yo‘nalish	Javob variantlari (respondentlar ulushi, %)
Ma’lumotlarni himoya qilish	faqat parol — 40; kompleks himoya (parol, shifrlash, antivirus) — 25,7; elektron saqlashdan qochadi — 17,1; xavfsizlik uchun faqat muassasa javobgar — 14,3

Monitoring: kuzatuvdan tizimli tahlilga

Natijalarning birinchi xususiyati — kuzatish bilan tahlil o‘rtasidagi tafovut. Respondentlarning 37,1 foizi talabalarning onlayn faoliyatini muntazam kuzatib borsada, raqamli ma’lumotlarni tizimli kuzatishga harakat qiladiganlar ulushi 31,4 foizni tashkil etadi, ya’ni kuzatishning bir qismi tizimli tahlilga aylanmaydi. Yana 25,7 foiz respondent faqat bajarilgan ishlar soni va sifati hamda baholarni tahlil qiladi; bu esa talaba qachon, qancha va qanday faoliyat ko‘rsatgani haqidagi ma’lumotlardan foydalanilmasligini bildiradi. Eng e’tiborlisi, 14,3 foiz respondent bunday ma’lumotlar mavjud emas va tahlil qilish uchun javobgar emas deb hisoblaydi, holbuki raqamli muhitda talabaning har bir harakati iz qoldiradi. Bu holat pedagogik jihatdan muhim: monitoring faqat qo‘shimcha yordamga muhtoj talabani o‘z vaqtida aniqlash uchun ma’noga ega. Agar o‘qituvchi ma’lumotni tizimli yig‘masa, raqamli platformaning asosiy imkoniyati — o‘quv jarayonini individuallashtirish — ishlatilmay qoladi. Shu sababli metodikada platformadagi faollik va o‘zlashtirish darajasi avtomatik kuzatiladigan mobil ta’lim platformasidan foydalanildi; bu muammoni o‘qituvchi vaqtini ko‘p talab qiladigan qo‘l mehnatisiz hal qiladi.

Axborot xavfsizligi: bilim emas, mas’uliyat muammosi

Ikkinchi xususiyat — himoya choralarining yetarli emasligi va mas’uliyatni noto‘g‘ri taqsimlash. Imtihon varaqalari, baholar, shaxsiy ma’lumotlarni himoya qilish uchun 40 foiz respondent faqat paroldan foydalanadi, kompleks himoyani esa 25,7 foiz qo‘llaydi. Bu ko‘rsatkichlar parollarni boshqarish, ma’lumotlarni zaxiralash va

shifrlashga oid amaliy bilimlarni tizimli o‘rgatish zarurligini ko‘rsatadi. Ayni paytda 17,1 foiz respondent shaxsiy ma’lumotlar xavfsizligidan qo‘rqib ularni elektron shaklda saqlashdan qochadi, bu esa to‘g‘ri himoya vositalarini bilmaslik oqibatida raqamli imkoniyatlardan voz kechishga olib keladi. 14,3 foiz respondent axborot xavfsizligi uchun faqat oliy ta’lim muassasasi mas’ul deb hisoblaydi, 54,3 foiz esa axborot tizimi muhitiga kirish imkoni bo‘lmasligidan xavotirda.

Shunday qilib, xavfsizlik sohasidagi muammo faqat texnik bilim yetishmasligi emas, balki shaxsiy mas’uliyatni anglash masalasi hamdir. Pedagog sifatida bo‘lajak mutaxassis talabalar ma’lumotlariga ega bo‘ladi, shu bois ularni himoyalash kasbiy burchining bir qismi. Bu nuqtai nazar raqamli kompetensiyaning faoliyatli va kognitiv mezonlariga axborot xavfsizligi bo‘yicha aniq ko‘rsatkichlar kiritish zarurligini asoslaydi: parolni boshqarish, ma’lumotni zaxiralash, shaxsiy ma’lumotlarni qayta ishlash qoidalariga rioya qilish.

Xalqaro doiralar bilan qiyoslash

DigComp 2.1 xavfsizlik sohasida qurilmalarni, shaxsiy ma’lumotlar va maxfiylikni, sog‘liq va farovonlikni hamda atrof-muhitni himoya qilish kompetensiyalarini ajratadi. DigCompEdu esa o‘qituvchi uchun baholash sohasini belgilab, unda baholash strategiyalari, dalillarni tahlil qilish, teskari aloqa va rejalashtirish kompetensiyalarini ko‘rsatadi. Ya’ni xalqaro doiralarda ham ma’lumotlar tahlili va xavfsizlik pedagogning raqamli kompetensiyasi tarkibiga kiradi. Mahalliy tadqiqotlarda esa muhandisning axborot oqimi ko‘p va uni qayta ishlash tezligi yuqori sharoitda o‘z vaqtida to‘g‘ri qaror qabul qilishga tayyorligi kompetentlikning asosiy belgilaridan biri sifatida ta’kidlanadi. So‘rov natijalari bu talablar bilan amaliy tayyorgarlik o‘rtasida tafovut borligini ko‘rsatdi. Mazkur tafovutni bartaraf etish uchun muallif monitoring va xavfsizlik bo‘yicha rivojlanganlik ko‘rsatkichlarini darajalar

kesimida taklif etadi (2-jadval). Ko‘rsatkichlar so‘rov ma’lumotlari va xalqaro doiralar mazmuniga tayanadi, ularning amaliy mosligi tajribada tekshirilishi lozim.

2-jadval.

Monitoring va xavfsizlik bo‘yicha taklif etilgan ko‘rsatkichlar

Daraja	**Monitoring ko‘rsatkichi**	**Xavfsizlik ko‘rsatkichi**
Reproduktiv	Tayyor hisobotdan talaba faolligini ko‘ra oladi	Ko‘rsatma bo‘yicha parol o‘rnatadi
Produktiv	Faollik va baholarni solishtirib, yordamga muhtoj talabani aniqlaydi	Parol, zaxira nusxa va kirish huquqlaridan foydalanadi
Kreativ	Ma’lumotlar asosida individual traektoriya va tuzatish rejasini tuzadi	Resurs uchun himoya va kirish siyosatini mustaqil loyihalaydi

Metodik oqibatlar

So‘rov natijalaridan metodikaga uchta o‘zgartirish kiritish zarurati kelib chiqadi. Birinchidan, o‘quv modullarida ma’lumotlar tahlili (platformadagi faollik, topshiriqlar bajarilishi, o‘zlashtirish dinamikasi bo‘yicha hisobotlar bilan ishlash) alohida mavzu sifatida o‘qitiladi. Ikkinchidan, axborot xavfsizligi bo‘yicha amaliy topshiriqlar (parol siyosatini ishlab chiqish, resursga kirish huquqlarini belgilash, zaxira nusxa yaratish) kreativ va faoliyatli mezonlarning ko‘rsatkichi sifatida baholashga kiritiladi. Uchinchidan, o‘qituvchi va muassasa mas’uliyati chegaralari o‘quv-uslubiy ko‘rsatmalarda aniq yoziladi, chunki xavfsizlikni faqat muassasa zimmasiga yuklash tendensiyasi mavjud. Ushbu o‘zgartirishlarning samarasi alohida tekshirilishi lozim. Natijalarni sharhlashda cheklovni ham ta’kidlash zarur: so‘rov o‘z-o‘zini baholashga asoslangan va aniqlovchi bosqichda o‘tkazilgan, shuning uchun u talabalarning haqiqiy

xatti-harakatini emas, balki ularning o‘zlari haqidagi fikrini aks ettiradi. Shu sababli bu ma’lumotlar metodikani loyihalash uchun asos bo‘lib xizmat qiladi, uning samaradorligini isbotlash uchun esa tajriba-sinov natijalaridan foydalaniladi.

Xulosa

Aniqlovchi so‘rov bo‘lajak muhandis-pedagoglarda raqamli ma’lumotlar bilan ishlash va axborot xavfsizligi sohasida jiddiy bo‘shliq borligini ko‘rsatdi: kuzatish tizimli tahlilga aylanmaydi, himoya choralari asosan parol bilan cheklanadi, mas’uliyat esa ko‘pincha muassasaga yuklanadi. Bu bo‘shliqni bartaraf etish uchun ma’lumotlar tahlili va axborot xavfsizligi alohida o‘quv mavzulari va baholash ko‘rsatkichlari sifatida metodikaga kiritildi.

Foydalanilgan adabiyotlar:

1. Carretero S., Vuorikari R., Punie Y. DigComp 2.1: The Digital Competence Framework for Citizens with eight proficiency levels and examples of use. – Luxembourg: Publications Office of the European Union, 2017. 48 p.

2. Redecker C. European Framework for the Digital Competence of Educators: DigCompEdu / ed. by Y. Punie. – Luxembourg: Publications Office of the European Union, 2017. 95 p.

3. Shoymardonov T.T. Pedagog kadrlar malakasini oshirishi va kasbiy faoliyati monitoringini tashkil etishning elektron tizimi: pedagogika fanlari bo‘yicha falsafa doktori (PhD) dissertatsiyasi. Toshkent, 2017.

4. Mamatov N.D. Elektron axborot ta’lim muhitida kasbiy ta’lim jarayonlarini pedagogik loyihalashtirish: monografiya. Toshkent: Navro‘z, 2017. 160 b.

THE HARMONY OF THE METAPHYSICAL WORLD IN EASTERN AND WESTERN MYSTICAL LYRICISM

Avezov Elbek To‘rayevich
(PhD), Acting Associate Professor
elbekavezov040@gmail.com
Department of World Literature, Uzbekistan State University of World Languages

Abstract

This article examines, through a comparative-typological approach, the artistic and philosophical representation of metaphysical being in the works of two prominent representatives of Eastern mystical lyric poetry: Yunus Emre, an outstanding figure of Turkic Sufi literature of the 13th–14th centuries, and Magtymguly Pyragy, a major representative of 18th-century Turkmen classical literature. The study primarily focuses on the poetic model of the relationship between the human being, the world, and Absolute Truth, as well as on the interrelation and correspondence of such categories as the apparent and the hidden, transience and eternity, love and gnosis, spirit and nafs, time and eternity. The study demonstrates that, in Yunus Emre’s lyric poetry, the metaphysical world is constructed primarily around the ideas of divine love and unity, while the process of self-realization is presented as a spiritual journey toward the comprehension of Truth. In the works of Magtymguly Pyragy, this Sufi-metaphysical model is organically integrated with folk-poetic thinking, ethical and mystical concepts, the perception of the transience of the earthly world, and the idea of human spiritual responsibility.

Keywords

Yunus Emre, Magtymguly Pyragy, mystical lyricism, Sufism, metaphysics, existence, Absolute Truth, divine love, soul, nafs, exoteric, esoteric, transience, eternity, gnosis, poetic thought, comparative literary studies.

SHARQ VA G‘ARB MISTIK LIRIKASIDA METAFIZIK OLAM MUTANOSIBLIGI

Avezov Elbek To‘rayevich (PhD) v.v.b. dotsent
O‘zDJTU Jahon adabiyoti kafedrasi

Annotatsiya

Mazkur maqolada Sharq mistik lirikasining ikki yirik vakili — XIII–XIV asrlar turkiy tasavvufiy adabiyotining atoqli namoyandasi Yunus Emre hamda XVIII asr turkman mumtoz adabiyotining yirik vakili Mahtumquli Firog‘iy ijodida metafizik borliqning badiiy-falsafiy ifodasi qiyosiy-tipologik metod asosida tadqiq etiladi. Tadqiqotning asosiy e’tibori inson, olam va Mutlaq Haqiqat o‘rtasidagi munosabatlarning poetik modeliga, zohir va botin, foniylik va boqiylik, ishq va ma’rifat, ruh va nafs, vaqt va abadiyat kategoriyalarining o‘zaro mutanosibligiga qaratiladi. Yunus Emre lirikasida metafizik olam, avvalo, ilohiy ishq va birlik g‘oyasi asosida tashkil topishi, insonning o‘zligini anglash jarayoni esa Haqiqatni anglash sari ruhiy harakat sifatida namoyon bo‘lishi aniqlanadi. Mahtumquli ijodida esa ushbu tasavvufiy-metafizik model xalqona poetik tafakkur, axloqiy-irfoniy qarashlar, dunyoning o‘tkinchiligi va insonning ma’naviy mas’uliyati bilan uyg‘unlashadi.

Аннотация

В данной статье на основе сравнительно-типологического метода исследуется художественно-философское выражение метафизического бытия в творчестве двух выдающихся представителей восточной мистической лирики — Юнуса Эмре, видного представителя тюркской суфийской литературы XIII–XIV веков, и Махтумкули Фраги, крупного представителя туркменской классической литературы XVIII века. Основное внимание в исследовании уделяется поэтической модели взаимоотношений между человеком, миром и Абсолютной Истиной, а также взаимосвязи и соразмерности таких категорий, как явное и

сокровенное, бренность и вечность, любовь и познание, дух и нафс, время и вечность. Установлено, что в лирике Юнуса Эмре метафизический мир формируется прежде всего на основе идеи божественной любви и единства, тогда как процесс самопознания человека проявляется как духовное движение к постижению Истины. В творчестве Махтумкули данная суфийско-метафизическая модель органично сочетается с народнопоэтическим мышлением, нравственно-ирфаническими представлениями, осмыслением преходящести земного мира и идеей духовной ответственности человека.

Kalit so‘zlar: Yunus Emre, Mahtumquli, mistik lirika, tasavvuf, metafizika, borliq, Mutlaq Haqiqat, ilohiy ishq, ruh, nafs, zohir, botin, foniylik, boqiylik, ma’rifat, poetik tafakkur, qiyosiy adabiyotshunoslik.

Jahon adabiy-estetik tafakkurida mistik lirika insonning tashqi borliqni tasvirlashidan ko‘ra, mavjudlikning ichki va botiniy mohiyatini anglashga intilishi bilan ajralib turadi. Bunday poetik tafakkurda tabiat, inson, vaqt, makon, o‘lim, ishq, ruh va abadiyat oddiy tasvir obyektlari emas, balki borliqning yashirin ma’nolarini ochishga xizmat qiluvchi ramziy-semantik kategoriyalarga aylanadi. Shu ma’noda mistik lirika insonning “men”idan Mutlaq Haqiqat sari harakatini badiiy ifodalovchi alohida tafakkur shaklidir. Yunus Emre ijodi ana shunday poetik-metafizik tafakkurning yuksak namunalaridan biridir. Tadqiqotlarda uning she’riyati ilohiy ishq, insonparvarlik, qalb va birlik g‘oyalarini sodda, ammo ko‘p qatlamli poetik tilda ifodalashi bilan tavsiflanadi. Yunus Emre poetikasining muhim xususiyatlaridan biri murakkab tasavvufiy-falsafiy tushunchalarni xalq tiliga yaqin badiiy shaklda ifodalashidir.

Mahtumquli Firog‘iy esa XVIII asr turkman adabiyotida tasavvufiy, axloqiy, falsafiy va ijtimoiy mazmunni xalqona poetik tafakkur bilan uyg‘unlashtirgan yirik ijodkor sifatida namoyon bo‘ladi. Zamonaviy tadqiqotlarda uning she’riyatida diniy-axloqiy g‘oyalar, xalq ruhiyatiga yaqin obrazlar tizimi va badiiy ifoda vositalari muhim

o‘rin tutishi qayd etiladi. Mazkur ikki ijodkorni qiyosiy o‘rganish bir qator muhim ilmiy masalalarni yuzaga chiqaradi. Avvalo, ularning har ikkisi turkiy xalqlar adabiy-estetik tafakkurida tasavvufiy qarashlarning milliy poetik shakllarga aylanish jarayonini ko‘rsatadi. Ikkinchidan, ular ijodida insonning tashqi mavjudligi bilan uning botiniy mohiyati o‘rtasidagi munosabat markaziy o‘rin egallaydi. Uchinchidan, “olam–inson–Haq” munosabati har ikki shoir poetikasining metafizik asosini tashkil etadi. Shu bilan birga, Yunus Emre va Mahtumqulini bevosita “Sharq va G‘arb” qarama-qarshiligi doirasida talqin qilish metodologik jihatdan ehtiyotkorlikni talab etadi. Chunki har ikki shoir ham Sharqning islomiy-tasavvufiy madaniy makoniga mansub. Shu sababli mazkur tadqiqotda “Sharq–G‘arb” kategoriyasi geografik qarama-qarshilik sifatida emas, balki keyingi komparativ tadqiqotlar uchun nazariy ufq sifatida tushuniladi. Asosiy empirik material esa Yunus Emre va Mahtumquli ijodidagi metafizik tafakkurning tipologik umumiyligi va individual poetik farqlarini aniqlashga qaratiladi. Yunus Emre va Mahtumquli lirikasida metafizik borliq konsepsiyasining shakllanish tamoyillari, uning poetik-semantik mexanizmlari va “inson–olam–Haq” munosabatidagi o‘rnini qiyosiy-tipologik jihatdan aniqlash. Mistik lirikaning asosiy xususiyati shundaki, unda poetik tasvir bevosita ko‘rinib turgan voqelik bilan chegaralanmaydi. Tashqi olam hodisalari botiniy ma’nolarni ifodalovchi ramzlarga aylanadi. Shu jihatdan mistik she’riyatda “dunyo” bir vaqtning o‘zida ham real mavjudlik, ham insonni Mutlaq Haqiqat sari yetaklovchi ramziy makondir. Metafizik tafakkur esa mavjudlikning ko‘zga ko‘rinadigan qatlamidan tashqaridagi mohiyatni anglashga intiladi. Tasavvufiy poetikada bu intilish, odatda, Haqni bilish, nafsni poklash, qalbni uyg‘otish va ilohiy ishqqa erishish jarayonlari bilan bog‘lanadi. Yunus Emre tadqiqotlarida ham uning inson konsepsiyasi ontologik, epistemik va axloqiy qatlamlarda o‘rganilishi qayd etilgan. Insonning moddiy va ma’naviy tomonlari, jon, nafs, ko‘ngil va Haq ishqi o‘rtasidagi munosabatlar uning tasavvufiy dunyoqarashining

asosiy kategoriyalaridan hisoblanadi. Yunus Emre poetikasining markazida inson turadi. Biroq bu inson mustaqil va yopiq mavjudlik emas. U Haq bilan aloqada, olam bilan munosabatda va o‘z ichki “men”ini anglash jarayonida namoyon bo‘ladi. Yunus Emre ijodining falsafiy-tasavvufiy qatlamini tadqiq etgan olimlar uning she’riyatida ilohiy ishq, inson sevgisi, qalb va birlik tushunchalari o‘zaro bog‘langanini ta’kidlaydilar.

Bu yerda “inson” kategoriyasi ikki xil holatda namoyon bo‘ladi:

- **zohiriy inson** — moddiy dunyo bilan bog‘langan mavjudlik;
- **botiniy inson** — Haqiqatni anglash imkoniyatiga ega ruhiy mavjudlik.

Yunus Emre poetikasida zohir va botin o‘rtasidagi munosabat metafizik tafakkurning muhim asoslaridan biridir. Tashqi olam o‘z-o‘zicha yakuniy haqiqat emas; u ichki ma’noni anglash uchun bir bosqich vazifasini bajaradi. Bu jihatdan tasavvufiy she’riyatning ramziy tili alohida ahamiyatga ega. Yo‘l, nur, suv, gul, bog‘, dengiz, ishq, dard kabi obrazlar ko‘pincha bir vaqtning o‘zida real va metafizik mazmun tashiydi. Yunus Emrening poetik olamida “yo‘l” obrazini ham ana shu nuqtayi nazardan talqin qilish mumkin. Yo‘l tashqi harakatni emas, insonning ichki o‘zgarishini ifodalaydi. Yo‘lning maqsadi geografik manzilga yetish emas, **o‘zlikni anglash orqali Haqiqatga yaqinlashish**dir.

Mahtumquli Firog‘iy XVIII asr turkman adabiyotining yirik vakili sifatida xalqona poetik tafakkur, diniy-irfoniy qarash va axloqiy-falsafiy mushohadani bir butun badiiy tizimga birlashtirgan. Tadqiqotlarda uning ijodi diniy-axloqiy va ijtimoiy g‘oyalarni xalqona ifoda vositalari bilan uyg‘unlashtirgani ta’kidlanadi. Mahtumquli poetikasidagi metafizik qatlam Yunus Emredagi kabi inson va Haq munosabati bilan chambarchas bog‘liq. Biroq uning poetik ifodasida tasavvufiy mazmun ko‘proq axloqiy va ijtimoiy kategoriyalar bilan uyg‘unlashadi. Shuning uchun Mahtumquli ijodida metafizik borliq “narigi dunyo” haqidagi mavhum tasavvur emas. U insonning bugungi hayotdagi

axloqiy pozitsiyasini belgilovchi ma’naviy mezondir. Shoirning dunyoqarashida foniy dunyo va boqiylik o‘rtasidagi qarama-qarshilik insonni beparvolikka emas, aksincha, mas’uliyatga undaydi. Dunyoning o‘tkinchiligi anglangan sari insonning axloqiy vazifasi kuchayadi. Fano tushunchasi oddiy ma’noda yo‘q bo‘lishni emas, tasavvufiy ma’noda insonning egoistik “men”idan voz kechib, Mutlaq Haqiqat oldidagi o‘z maqomini anglashini anglatadi.

Yunus Emre poetikasida bu jarayon ko‘proq ichki ishq va o‘zlikni anglash bilan bog‘lanadi. Inson o‘zining vaqtinchalik mavjudligini anglagan sari haqiqiy mavjudlikning manbasiga yuzlanadi. Mahtumqulida esa foniylik g‘oyasi ko‘pincha hayotning o‘tkinchiligi, inson umrining chegaralanganligi va ezgu nom qoldirish zarurati bilan bog‘lanadi. Natijada ikki shoirda umumiy semantik zanjir yuzaga keladi: **dunyoning foniyligi → inson umrining qisqaligi → o‘zlikni anglash → ma’naviy kamolot → boqiy ma’no.**

Mistik lirikaning asosiy konfliktlaridan biri ruh va nafs o‘rtasidagi qarama-qarshilikdir. Nafs — insonning moddiy istaklari, xudbinligi va o‘z manfaatiga bog‘lanishini ifodalasa, ruh — uning yuksalish va Mutlaq Haqiqatga intilish imkoniyatini bildiradi. Yunus Emre poetikasida bu qarama-qarshilik ichki tarbiya va ishq vositasida hal etiladi. Inson o‘z nafsini anglab, undan ustun kelgan sari ruhiy kamolotga yaqinlashadi. Mahtumquli poetikasida ham nafsni jilovlash, insonning o‘z xulqini nazorat qilishi va axloqiy jihatdan poklanishi muhim mavzulardan biridir. Mahtumquli she’riyatida axloqiy prinsiplarning barqarorligi alohida tadqiqotlarda ham qayd etilgan. Demak, ikki ijodkor uchun ham metafizik olamga kirish tashqi marosimdan ko‘ra insonning **ichki o‘zgarishi** bilan belgilanadi.

Mazkur xulosa mistik lirikaning faqat diniy yoki estetik hodisa emas, balki inson mavjudligining universal muammolarini badiiy-falsafiy anglash shakli ekanini ko‘rsatadi.

Foydalanilgan adabiyotlar

1. Kılıç, M. E. **Yūnus Emre's Poetry and Philosophy.** Tasavvuf Araştırmaları Enstitüsü Dergisi, 2025, Vol. 4, No. 1, pp. 135–141. DOI: 10.32739/ustad.2025.7.80.

2. Demirli, E. **Yunus'un Tasavvuf Anlayışının Kurucu Unsurları: Ezelî İnsan ve Kadim Tanrı Arasında Aşka Dönüşen İman.** Darulfunun İlahiyat, 2021.

3. Büyüközkara, E. **Ontik, Epistemik Ve Etik Açılardan Yunus Emre'nin İnsan Tasavvuru.** Sofist: Uluslararası Felsefe Dergisi.

4. Adrahtas, V. **The Feminine in the Poetry of Yunus Emre: A Case Study in the Hierophanic Dialectics of Mystical Islamic Experience.** Religions, 2021, 12(9), 727. DOI: 10.3390/rel12090727.

5. Maksadova, M. **Similes in the Poetry of Magtmguly Pyragy: the great sage and poet of the East.** Philology, No. 47, 2025/2026, pp. 59–70.

6. Kakisheva, G. **Mahtumquli Pyragy ijodining badiiy-estetik xususiyatlari.** Central Asian Journal of Multidisciplinary Research and Management Studies, 2025.

7. Garayeva, G. H., Hasmammedova, A. T. **The Morality Principle in the Poetry of Magtymguly.** 2024.

8. Norkulova, Sh. **The Interpretation of a Divine Dream in Mahtumquli's Poetry.** Modern Science and Research, 2024. DOI: 10.71337/inlibrary.uz.science-research.33355.

9. Taylor, J. et al. **Turkic poetic heritage as symbol and spectacle of identity: observations on Turkmenistan's Year of Magtymguly celebrations.** Nationalities Papers.

THE ROLE AND IMPORTANCE OF VOLLEYBALL IN THE DEVELOPMENT OF MASS SPORTS

Gafurova Xushvaqt Shavkat qizi
Researcher

Abstract

This thesis examines the role and socio-pedagogical significance of volleyball in the development of mass sports. Volleyball is considered as a means of engaging the population in physical activity, organizing leisure time meaningfully, and developing teamwork skills. The aim of the thesis is to analyze the possibilities of organizing volleyball training in educational institutions and local communities and to identify organizational and pedagogical conditions that contribute to increasing the popularity of this sport.

Within the scope of the topic, attention is paid to aspects of volleyball related to physical activity, interpersonal communication, responsibility, and decision-making within a team. The study discusses adapting training sessions to participants' age, physical fitness, and individual capabilities, simplifying game rules for beginners, and encouraging regular participation. In addition, the accessibility of sports facilities, availability of necessary equipment, methodological preparedness of coaches or organizers, and ensuring safety during training are interpreted as important conditions for the development of mass volleyball.

The thesis proposes an approach to assessing the importance of volleyball in mass sports not only through competition results, but also through regular participation, accessibility of training sessions, and the opportunity to involve participants with different levels of physical preparation. Training sessions and amateur competitions organized through cooperation among educational institutions, local communities, and sports organizations are presented as practical ways to popularize volleyball.

Keywords

mass sports, volleyball, physical activity, healthy lifestyle, teamwork, sports training, amateur competitions, socio-pedagogical significance.

OMMAVIY SPORTNI RIVOJLANTIRISHDA VOLEYBOLNING O‘RNI VA AHAMIYATI

Gafurova Xushvaqt Shavkat qizi

Tadqiqotchi

Annotatsiya

Ushbu tezisda ommaviy sportni rivojlantirishda voleybolning o‘rni va ijtimoiy-pedagogik ahamiyati yoritiladi. Voleybol aholini jismoniy faollikka jalb etish, bo‘sh vaqtni mazmunli tashkil qilish hamda jamoaviy hamkorlik ko‘nikmalarini shakllantirish vositasi sifatida ko‘rib chiqiladi. Tezisning maqsadi voleybol mashg‘ulotlarini ta’lim muassasalari va mahallalarda tashkil etish imkoniyatlarini tahlil qilish, ushbu sport turining ommaviyligini oshirishga xizmat qiluvchi tashkiliy va pedagogik shartlarni aniqlashdan iborat.

Mavzu doirasida voleybolning harakat faolligi, o‘zaro muloqot, mas’uliyat va jamoada qaror qabul qilish bilan bog‘liq jihatlariga e’tibor qaratiladi. Mashg‘ulotlarni ishtirokchilarning yoshi, jismoniy tayyorgarligi va individual imkoniyatlariga moslashtirish, boshlovchilar uchun o‘yin qoidalarini soddalashtirish hamda muntazam ishtirokni rag‘batlantirish masalalari muhokama qilinadi. Shuningdek, sport maydonlarining foydalanishga qulayligi, zarur jihozlar bilan ta’minlanganligi, murabbiy yoki tashkilotchining metodik tayyorgarligi va mashg‘ulotlarda xavfsizlikni ta’minlash ommaviy voleybolni rivojlantirishning muhim shartlari sifatida talqin etiladi.

Tezisda voleybolning ommaviy sportdagi ahamiyatini faqat musobaqa natijalari orqali emas, balki aholining muntazam qatnashuvi, mashg‘ulotlarning ochiqligi va turli tayyorgarlik darajasidagi ishtirokchilarni jalb etish imkoniyati orqali baholash

yondashuvi ilgari suriladi. Ta’lim muassasalari, mahallalar va sport tashkilotlari hamkorligida tashkil qilinadigan mashg‘ulotlar hamda havaskorlik musobaqalari voleybolni ommalashtirishning amaliy yo‘nalishlari sifatida ko‘rsatiladi.

Kalit so‘zlar: ommaviy sport, voleybol, jismoniy faollik, sog‘lom turmush tarzi, jamoaviy hamkorlik, sport mashg‘ulotlari, havaskorlik musobaqalari, ijtimoiy-pedagogik ahamiyat.

Kirish

Ommaviy sportni rivojlantirish aholini muntazam jismoniy faoliyatga jalb etish, bo‘sh vaqtni mazmunli tashkil qilish va jamiyatda sport bilan shug‘ullanish madaniyatini shakllantirish bilan bog‘liq. Bu jarayonda sport mashg‘ulotlarining turli yoshdagi, tayyorgarlik darajasidagi va individual imkoniyatlarga ega insonlar uchun ochiq bo‘lishi muhimdir. Ommaviy sportning asosiy vazifasi yuqori sport natijalariga erishish bilan cheklanmaydi; u aholining kundalik hayotida jismoniy faollikka barqaror o‘rin ajratishni ham nazarda tutadi. Shu jihatdan jamoaviy sport turlarining tashkiliy va pedagogik imkoniyatlarini o‘rganish dolzarb ahamiyat kasb etadi.

Voleybol ommaviy sport mashg‘ulotlarini tashkil qilish uchun qo‘llanishi mumkin bo‘lgan jamoaviy o‘yinlardan biridir. Uni ta’lim muassasalarida, mahalla sport maydonlarida va dam olish maskanlarida tashkil etish mumkin. Havaskorlik mashg‘ulotlarida maydon o‘lchami, to‘r balandligi, jamoa tarkibi va ayrim o‘yin qoidalarini ishtirokchilarning imkoniyatlariga moslashtirish boshlovchilarni bosqichma-bosqich o‘yinga jalb etishga yordam beradi. Biroq voleybolning ommaviyligi faqat maydon va jihozlar mavjudligiga bog‘liq emas. Mashg‘ulotlarning qulay vaqtda o‘tkazilishi, tushunarli tashkil qilinishi va har bir qatnashchiga faol ishtirok etish imkoniyati yaratilishi ham muhimdir.

Voleybolning pedagogik ahamiyati o‘yin davomida individual harakatlarning jamoa faoliyati bilan uyg‘unlashishida namoyon bo‘ladi. To‘pni qabul qilish, uzatish va

hujumni tashkil etish ishtirokchilar o‘rtasidagi muloqot hamda o‘zaro kelishuvni talab qiladi. Shu sababli mashg‘ulotlarda texnik ko‘nikmalarni o‘rgatish bilan birga sherikni qo‘llab-quvvatlash, umumiy qoidalarga rioya qilish, vazifalarni taqsimlash va o‘z harakati uchun mas’uliyatni his etishga e’tibor berish lozim. Ushbu imkoniyatlarning yuzaga chiqishi murabbiy yoki tashkilotchining yondashuviga, jamoada yaratilgan muhitga va mashg‘ulot mazmuniga bog‘liq.

Ommaviy voleybolni tashkil etishda ayrim to‘siqlarni ham hisobga olish zarur. Ishtirokchilarning tayyorgarlik darajasidagi farqlar, boshlovchilarning xato qilishdan tortinishi, mashg‘ulotlarda kuchli o‘yinchilarning ustunligi va sport maydonlaridan foydalanishdagi cheklovlar muntazam qatnashuvga xalaqit berishi mumkin. Shuning uchun mashg‘ulotlarni faqat musobaqaviy natijaga yo‘naltirish yetarli emas. O‘rgatuvchi mashqlar, muvozanatli jamoalar, bosqichma-bosqich murakkablashadigan topshiriqlar va qo‘llab-quvvatlovchi muloqot orqali barcha qatnashchilar uchun maqbul sharoit yaratish talab etiladi.

Mazkur tezisning maqsadi ommaviy sportni rivojlantirishda voleybolning o‘rni va ahamiyatini yoritish hamda uning imkoniyatlaridan foydalanishning tashkiliy-pedagogik shartlarini aniqlashdan iborat. Shu maqsadda voleybolning aholini sport faoliyatiga jalb etish imkoniyatlari, jamoaviy hamkorlikni shakllantirishdagi o‘rni, mashg‘ulotlarni turli tayyorgarlik darajasiga moslashtirish usullari va muntazam ishtirokni ta’minlash omillari ko‘rib chiqiladi. Tezisda ommaviy voleybolni rivojlantirish mezoni sifatida qatnashchilar soni bilan birga ularning mashg‘ulotlarda davomli ishtiroki va har bir qatnashchining o‘yinga jalb etilishi ham muhim deb qaraladi.

Asosiy qism

Voleybolning ommaviy sportni rivojlantirishdagi o‘rni uning jismoniy, pedagogik va ijtimoiy imkoniyatlari bilan belgilanadi. O‘yin jarayonida ishtirokchilar to‘pning

harakatini kuzatadi, maydonda joyini o‘zgartiradi, sheriklari bilan kelishgan holda harakat qiladi va vaziyatga mos qaror qabul qiladi. Shu bois voleybol mashg‘ulotlarini tashkil etishda texnik harakatlarni o‘rgatish, jismoniy faollikni ta’minlash va jamoaviy munosabatlarni rivojlantirish o‘zaro bog‘liq vazifalar sifatida qaralishi lozim. Mazkur imkoniyatlardan foydalanish mashg‘ulotlarning maqsadi, mazmuni va ishtirokchilarga mos tashkil etilishiga bog‘liq.

Voleybolga jalb etishning dastlabki bosqichida qatnashchilarda o‘yinga qiziqish va o‘z imkoniyatiga ishonch hosil qilish muhimdir. Boshlovchidan murakkab texnik harakatlarni darhol to‘g‘ri bajarishni talab qilish uning faolligini cheklashi mumkin. Shuning uchun mashg‘ulotlar to‘p bilan tanishish, oddiy uzatish va qabul qilish mashqlari, juftlikdagi topshiriqlar hamda soddalashtirilgan o‘yinlardan boshlanishi maqsadga muvofiq. Topshiriqlarning asta-sekin murakkablashtirilishi ishtirokchiga o‘z rivojlanishini kuzatish imkonini beradi. Bunda xatolarni tushuntirish va tuzatish usuli ham ahamiyatlidir: tashkilotchi kamchilikni ko‘rsatish bilan birga harakatni yaxshilashning aniq yo‘lini tavsiya etishi kerak.

Ommaviy mashg‘ulotlarda ishtirokchilarning jismoniy tayyorgarligi va o‘yin tajribasi bir xil bo‘lmaydi. Ushbu farqlarni hisobga olish uchun topshiriqlarni darajalarga moslashtirish mumkin. Masalan, boshlovchilar qisqa masofada to‘p uzatish va harakatni boshqarishga e’tibor qaratsa, tajribali qatnashchilar uzatish aniqligi, maydonda joylashish va jamoaviy harakatlarni mashq qiladi. Kichik tarkibli o‘yinlar har bir ishtirokchining to‘p bilan ishlash imkoniyatini ko‘paytirishga xizmat qilishi mumkin. Jamoalar tuzilayotganda esa kuchli o‘yinchilarni bir tomonga jamlashdan saqlanish, tarkibni muvozanatlashtirish va vazifalarni navbat bilan almashtirish zarur. Bu yondashuv mashg‘ulotning barcha qatnashchilar uchun mazmunli bo‘lishini ta’minlaydi.

Voleybolning ijtimoiy-pedagogik imkoniyatlari jamoaviy hamkorlik jarayonida namoyon bo‘ladi. O‘yinda bir ishtirokchining harakati keyingi harakat uchun sharoit yaratadi: to‘pni sifatli qabul qilish uzatishni, aniq uzatish esa hujumni tashkil qilishni osonlashtiradi. Shunday qilib, umumiy natija o‘yinchilarning o‘zaro yordamiga bog‘liq bo‘ladi. Mashg‘ulotlarda sherikni tinglash, to‘pga chiqishni oldindan bildirish, xatodan keyin bir-birini qo‘llab-quvvatlash va kelishmovchiliklarni qoidalarga muvofiq hal qilishga alohida e’tibor berish lozim. Jamoaviy sportning tarbiyaviy imkoniyatlari o‘z-o‘zidan yuzaga chiqmaydi; ularni tashkilotchining izchil pedagogik faoliyati orqali rivojlantirish kerak.

Muntazam qatnashuvni ta’minlashda ishtirokchilarning motivatsiyasi muhim o‘rin tutadi. Ommaviy sportga kelgan insonlarning maqsadlari turlicha bo‘lishi mumkin: kimdir faol dam olishni, boshqasi yangi ko‘nikma egallashni, yana biri do‘stlari bilan birga vaqt o‘tkazishni istaydi. Mashg‘ulot mazmunida ushbu ehtiyojlarning hisobga olinishi qatnashuvni davom ettirish uchun qulay sharoit yaratadi. Natijani faqat g‘alaba yoki mag‘lubiyat bilan baholash o‘rniga, uzatish aniqligining yaxshilanishi, jamoaviy harakatlarda faol qatnashish va belgilangan vazifani bajarish kabi individual yutuqlarni ham e’tirof etish maqsadga muvofiq. Rag‘batlantirish qatnashchilarni o‘zaro keskin taqqoslashga emas, ularning shaxsiy rivojlanishini ko‘rsatishga yo‘naltirilishi kerak.

Ta’lim muassasalari va mahallalar hamkorligi voleybolni ommalashtirishning amaliy yo‘nalishlaridan biridir. Maktabdagi sport mashg‘ulotlari o‘quvchilarga o‘yin ko‘nikmalarini egallash imkonini bersa, mahalladagi ochiq mashg‘ulotlar ushbu faoliyatni bo‘sh vaqtda davom ettirishga sharoit yaratadi. Buning uchun maydondan foydalanish jadvali, mas’ul tashkilotchi, jihozlarni saqlash tartibi va qatnashuv shartlari aniq belgilanishi lozim. Havaskorlik uchrashuvlari hamda mahallalararo musobaqalar muntazam mashg‘ulotlarni qo‘llab-quvvatlovchi tadbirlar sifatida tashkil etilishi

mumkin. Biroq ommaviy sport faoliyatini faqat alohida musobaqalar bilan cheklash yetarli emas; asosiy e'tibor davomli mashg'ulotlar tizimiga qaratilishi kerak.

Mashg'ulotlarning xavfsizligi va qulayligi ham muhim tashkiliy shart hisoblanadi. Maydon yuzasi, to'rning mahkamlanishi, jihozlarning holati va o'yin hududining to'siqlardan xoli ekanligi oldindan tekshirilishi zarur. Mashg'ulot oldidan tayyorlov mashqlarini bajarish, yuklamani qatnashchilarning imkoniyatlariga mos belgilash va dam olishga vaqt ajratish lozim. Sakrash, keskin yo'nalish o'zgartirish yoki to'pni qabul qilishda qiyinchilik sezadigan ishtirokchilar uchun yengillashtirilgan topshiriqlar tanlanishi mumkin. Shuningdek, mashg'ulot davomida kamsitish, masxara qilish va qo'pol muomalaga yo'l qo'ymaslik ishtirokchilarning o'zini erkin his etishi uchun zarurdir.

Ommaviy voleybol mashg'ulotlarining samaradorligini baholashda bir nechta mezondan foydalanish maqsadga muvofiq. Qatnashchilar soni faoliyatning qamrovini ko'rsatsa, ularning muntazam kelishi mashg'ulotlarning davomiyligini ifodalaydi. Boshlovchilarning faol o'yinga qo'shilishi, jamoalar tarkibining muvozanati va qatnashchilarning fikr-mulohazalari esa tashkil etish sifatini baholashga yordam beradi. Davomat qaydlari, oddiy kuzatuv va qisqa so'rovlar orqali qaysi mashg'ulotlar ko'proq qiziqish uyg'otishi yoki qanday to'siqlar mavjudligi aniqlanishi mumkin. Ushbu ma'lumotlar asosida mashg'ulot vaqti, topshiriqlar murakkabligi va o'yin shakllarini moslashtirish voleybolni ommaviy sportning barqaror yo'nalishi sifatida rivojlantirishga xizmat qiladi.

Xulosa

Voleybol ommaviy sportni rivojlantirishda aholini jismoniy faollikka jalb etish, bo'sh vaqtni mazmunli tashkil qilish va jamoaviy hamkorlikni shakllantirish imkoniyatlariga ega. Uning ahamiyati ishtirokchilarning texnik ko'nikmalarni egallashi bilan birga, umumiy maqsad yo'lida harakat qilish, o'zaro yordam ko'rsatish va

qoidalarga rioya etishni o‘rganishida namoyon bo‘ladi. Biroq ushbu imkoniyatlarning amalga oshishi mashg‘ulotlarning izchil tashkil etilishi, pedagogik yondashuv va qatnashchilar uchun yaratilgan sharoitga bog‘liq.

Ommaviy voleybol mashg‘ulotlarida ishtirokchilarning yoshi, tayyorgarligi va individual imkoniyatlarini hisobga olish asosiy talab hisoblanadi. Boshlovchilar uchun soddalashtirilgan mashqlar, kichik tarkibli o‘yinlar va bosqichma-bosqich murakkablashadigan topshiriqlarni qo‘llash ularning faol ishtirok etishiga sharoit yaratadi. Jamoalar tarkibini muvozanatlashtirish, vazifalarni navbat bilan almashtirish va har bir qatnashchining rivojlanishini e’tirof etish mashg‘ulotlarga qiziqishni qo‘llab-quvvatlaydi. Shu sababli tashkilotchining faoliyati sport natijasi bilan bir qatorda barcha ishtirokchilarning o‘yinga jalb etilishiga ham yo‘naltirilishi lozim.

Voleybolni ommalashtirish uchun ta’lim muassasalari, mahallalar va sport tashkilotlari o‘rtasida amaliy hamkorlikni yo‘lga qo‘yish zarur. Mashg‘ulotlar jadvalini qatnashchilar uchun qulay belgilash, maydon va jihozlardan foydalanish tartibini aniqlashtirish, mas’ul tashkilotchilarni biriktirish hamda muntazam havaskorlik uchrashuvlarini o‘tkazish ushbu hamkorlikning asosiy yo‘nalishlari bo‘lishi mumkin. Musobaqalar davomli mashg‘ulotlar tizimini qo‘llab-quvvatlashi, yangi ishtirokchilarni jalb etishi va jamoalar o‘rtasidagi aloqalarni mustahkamlashga xizmat qilishi kerak.

Ommaviy voleybol faoliyatini baholashda qatnashchilar soni, davomat, boshlovchilarning mashg‘ulotlarni davom ettirishi, faol o‘yinga jalb etilishi va bildirilgan fikr-mulohazalarni birgalikda hisobga olish maqsadga muvofiq. Ushbu mezonlar mashg‘ulotlarni takomillashtirish uchun amaliy asos yaratadi. Tezisda bayon etilgan yondashuvlarning samaradorligini aniqlash esa ularni muayyan ta’lim muassasasi yoki mahalla sharoitida qo‘llab, qatnashuv va faollikdagi o‘zgarishlarni kuzatishni talab etadi.

Foydalanilgan adabiyotlar

1. Ayrapetyans L. R., Pulatov A. A. **Voleybol nazariyasi va uslubiyati**: darslik. — Toshkent: Fan va texnologiya, 2012. — 208 b. jdpu.uz

2. Xalqaro voleybol federatsiyasi (FIVB). **Official Volleyball Rules 2025–2028** [Voleybolning rasmiy qoidalari, 2025–2028]. — FIVB, 2025. fivb.com

3. Jahon sog‘liqni saqlash tashkiloti. **WHO Guidelines on Physical Activity and Sedentary Behaviour** [Jismoniy faollik va kamharakat turmush tarziga oid tavsiyalar]. — Jeneva: WHO, 2020. who.int

4. UNESCO. **Quality Physical Education (QPE): Guidelines for Policy-Makers** [Sifatli jismoniy tarbiya: siyosatni ishlab chiquvchilar uchun qo‘llanma]. — Parij: UNESCO, 2015. 231101eng.pdf

THEORETICAL AND METHODOLOGICAL FOUNDATIONS FOR USING DSTI AND DTI INDICATORS IN ASSESSING HOUSEHOLD DEBT BURDEN

Raxmanova Odinaxon Akbarali qizi

Lecturer, Department of Economics, Profi University

Abstract

This thesis examines the theoretical and methodological characteristics of the debt-service-to-income (DSTI) and debt-to-income (DTI) ratios in assessing household debt burden. The study analyzes the differences between these indicators, their role in evaluating credit risks, and their application in banking practices in Uzbekistan. The necessity of using DSTI and DTI indicators jointly when assessing the financial condition of borrowers is substantiated.

Keywords

debt burden, DSTI, DTI, households, credit risk, macroprudential policy, lending.

UY XO‘JALIKLARI QARZ YUKINI BAHOLASHDA DSTI VA DTI KO‘RSATKICHLARIDAN FOYDALANISHNING NAZARIY-USLUBIY ASOSLARI

Raxmanova Odinaxon Akbarali qizi

Profi University, Iqtisodiyot kafedrasi o’qituvchisi

Annotatsiya

Ushbu tezisda uy xo‘jaliklari qarz yukini baholashda qarzga xizmat ko‘rsatishning daromadga nisbati (DSTI) va qarzning daromadga nisbati (DTI) ko‘rsatkichlarining nazariy hamda uslubiy xususiyatlari tadqiq etilgan. Ko‘rsatkichlarning o‘zaro farqi, kredit risklarini baholashdagi o‘rni va O‘zbekiston bank amaliyotida qo‘llanilishi tahlil

qilingan. Qarz oluvchining moliyaviy holatini baholashda DSTI va DTI indikatorlarini birgalikda qo‘llash zarurligi asoslangan.

Kalit so‘zlar: qarz yuki, DSTI, DTI, uy xo‘jaliklari, kredit riski, makroprudensial siyosat, kreditlash.

Uy xo‘jaliklari kreditlash hajmining o‘sishi moliyaviy inklyuziya va iqtisodiy faollikning rivojlanishiga xizmat qilishi bilan birga, qarz oluvchilarning ortiqcha qarzdorligi bilan bog‘liq xatarlarni ham kuchaytirishi mumkin.

Shu sababli qarz oluvchining kreditga layoqatliligini aniqlashda daromad miqdorini alohida baholash yetarli emas. Uning jami qarzdorligi va kreditlar bo‘yicha davriy to‘lovlari daromadiga nisbatan qanday darajada ekanligi ham aniqlanishi lozim.

Xalqaro makroprudensial amaliyotda bunday baholashning asosiy vositalari sifatida DSTI va DTI ko‘rsatkichlari qo‘llaniladi.

DSTI (Debt-Service-to-Income) qarz oluvchining kredit majburiyatlari bo‘yicha amalga oshiradigan davriy to‘lovlarining uning daromadiga nisbatini ifodalaydi.

DSTI = (Kreditlar bo‘yicha oylik to‘lovlar / oylik daromad) × 100

Masalan, qarz oluvchining oylik daromadi 10 mln so‘m va jami kredit to‘lovlari 4 mln so‘mni tashkil etsa, DSTI 40 foiz bo‘ladi. Bu qarz oluvchi daromadining 40 foizi kredit majburiyatlarini bajarishga sarflanayotganini anglatadi.

DTI (Debt-to-Income) esa qarz oluvchining jami qarzdorligi va uning daromadi o‘rtasidagi nisbatni tavsiflaydi. DTIning DSTIdan asosiy farqi shundaki, DSTI qarzga xizmat ko‘rsatish bilan bog‘liq joriy to‘lovlarni, DTI esa qarzdorlikning umumiy hajmini aks ettiradi.

Shuning uchun bir qarz oluvchi bo‘yicha DSTI maqbul darajada bo‘lishi uning umumiy qarzdorligi ham maqbul ekanligini anglatmaydi. Uzoq muddatli kreditning oylik to‘lovi kichik bo‘lishi natijasida DSTI nisbatan past bo‘lishi mumkin, biroq qarz oluvchining jami qarzdorligi daromadiga nisbatan juda yuqori bo‘lishi ehtimoli mavjud.

O‘zbekistonda jismoniy shaxslarni kreditlash bo‘yicha DSTI ko‘rsatkichining yuqori chegarasi 2025-yil 1-yanvardan asosiy hollarda 50 foiz darajasida belgilangan.

2026-yil 1-martdan iste’mol kreditlari va mikroqarzlar bo‘yicha DTI talabi ham joriy etildi. O‘rtacha oylik daromadi aniqlanishi mumkin bo‘lgan jismoniy shaxslar va o‘zini o‘zi band qilganlar uchun qarz miqdorining daromadga nisbati 8 barobardan, daromadi belgilangan tartibda aniqlanishi mumkin bo‘lmagan jismoniy shaxslar uchun esa 5 barobardan oshmasligi belgilangan.

Markaziy bank ma’lumotlariga ko‘ra, 2025-yil yakunida bankdan kredit olgan jismoniy shaxslarning bank va nobank majburiyatlari inobatga olingan o‘rtacha DSTI darajasi 38 foizdan 37 foizgacha kamaygan. Biroq mikroqarzlar bo‘yicha o‘rtacha DSTI 40 foizgacha oshgan.

Bu esa ayniqsa mikroqarzlar va iste’mol kreditlarida DSTI va DTI ko‘rsatkichlaridan kompleks foydalanish zarurligini ko‘rsatadi.

Bizning fikrimizcha, qarz oluvchilarni quyidagi to‘rt guruhga ajratish mumkin:

• 1-guruh — past risk: DSTI past, DTI past;

• 2-guruh — yashirin uzoq muddatli risk: DSTI past, DTI yuqori;

• 3-guruh — likvidlik riski: DSTI yuqori, DTI nisbatan past;

• 4-guruh — yuqori risk: DSTI yuqori va DTI yuqori.

Mazkur yondashuv faqat bitta ko‘rsatkichga asoslangan baholashga nisbatan qarz oluvchining kredit riskini aniqroq aniqlash imkonini beradi.

Bundan tashqari, qarz yukini baholashda bank va nobank moliya tashkilotlaridagi barcha majburiyatlarni hisobga olish muhim. 2025-yilning birinchi yarmida bank qarz oluvchilarining 47 foizida bittadan ortiq bank yoki nobank qarz majburiyati mavjud bo‘lgan.

Xulosa qilib, DSTI va DTI o‘zaro raqobat qiluvchi emas, balki bir-birini to‘ldiruvchi ko‘rsatkichlardir. DSTI qarz oluvchining joriy to‘lov qobiliyatini, DTI esa qarzdorlikning uzoq muddatli barqarorligini baholash imkonini beradi.

Shuning uchun O‘zbekiston bank tizimida jismoniy shaxslarning kredit riskini baholashda DSTI–DTI matritsasiga asoslangan differensial risk tasnifini shakllantirish maqsadga muvofiq. Ushbu yondashuv uy xo‘jaliklarining ortiqcha qarzdorligini erta aniqlash, muammoli kreditlarning yuzaga kelish ehtimolini kamaytirish va moliyaviy barqarorlikni mustahkamlashga xizmat qiladi.

Foydalanilgan adabiyotlar

1. O‘zbekiston Respublikasi Markaziy banki. Qarzga xizmat ko‘rsatishning daromadga nisbati (DSTI), 2026.

2. O‘zbekiston Respublikasi Markaziy banki. Qarzning daromadga nisbati (DTI), 2026.

3. O‘zbekiston Respublikasi Markaziy banki. 2025-yil uchun Moliyaviy barqarorlik sharhi, 2026.

4. BIS. Macroprudential policies to mitigate housing market risks.

5. Karmelavičius J., Otten J. Household Behavior under Macroprudential Borrower-Based Measures. IMF Working Paper, 2026.

THE USE OF ARTIFICIAL INTELLIGENCE TOOLS IN ASSESSING STUDENTS' SPEAKING PROFICIENCY

Zayniyeva Gulchaman Ilhomjon qizi
Teacher, National university of Uzbekistan named after Mirzo Ulugbek
Department of foreign language and literature
gulchamanzayniyeva@gmail.com
+99897 002 53 71

Abstract

The growing integration of artificial intelligence (AI) into language education has created new opportunities for assessing learners' speaking proficiency. AI-powered speech recognition and automated speaking assessment tools can support the evaluation of pronunciation, fluency, grammatical accuracy, lexical use, and selected features of spoken interaction. This thesis examines the potential educational benefits and limitations of using AI tools to assess students' speaking proficiency, particularly in higher education. It argues that such tools may provide timely feedback, increase opportunities for low-stakes practice, and help teachers manage assessment workloads. However, their results should be interpreted cautiously because recognition accuracy and scoring may vary according to accent, speech rate, recording quality, task type, and the characteristics of the learner. The thesis therefore advocates a human-in-the-loop approach in which AI-generated feedback complements, rather than replaces, teacher judgement. It also highlights the need for transparent criteria, data protection, accessibility, and empirical validation before AI-based scores are used for high-stakes decisions.

Keywords

artificial intelligence, speaking proficiency, automated assessment, language learning, feedback, validity, reliability.

Introduction. Speaking proficiency is a multidimensional component of communicative competence. It involves not only pronunciation and grammatical accuracy but also fluency, vocabulary use, coherence, pragmatic appropriateness, and the ability to respond meaningfully in interaction. Assessing these dimensions can be demanding because teachers must apply consistent criteria while considering the communicative purpose of each task. Recent developments in artificial intelligence have introduced tools that can transcribe speech, analyse selected speech features, and generate immediate feedback. These developments make it important to examine what AI can reliably assess, where its limitations lie, and how it can be integrated responsibly into language education.

Aim and Objectives. The aim of this thesis is to examine the pedagogical potential and limitations of AI tools in assessing students' speaking proficiency. The objectives are to identify speaking features that AI tools may evaluate; consider the potential benefits of automated feedback; discuss issues of validity, reliability, fairness, and privacy; and outline principles for combining AI-supported assessment with teacher evaluation.

Methods. The thesis uses a conceptual and literature-informed approach. It draws on established principles of language assessment and research concerning automated speech processing and AI-supported feedback. The discussion is organised around assessment validity, scoring consistency, pedagogical usefulness, and responsible implementation. As no original experimental data are presented, the observations are framed as an analytical synthesis rather than as claims of measured effectiveness.

Discussion. AI-based tools can offer several practical advantages. Automated speech recognition can produce transcripts, while some applications provide indicators related to pronunciation, pauses, speech rate, or lexical and grammatical features. Immediate feedback may enable students to practise more frequently and identify areas

for improvement outside class. Teachers may also use AI-generated information as supplementary evidence when planning instruction or monitoring progress. These benefits are most plausible in formative assessment, where feedback is used to guide learning rather than to determine consequential outcomes.

Nevertheless, automated assessment does not necessarily capture the full construct of speaking proficiency. A system may identify measurable speech features without adequately evaluating meaning, interactional competence, pragmatic appropriateness, creativity, or the quality of an argument. Speech-recognition errors can also affect subsequent feedback. Performance may vary with accents, dialects, speaking styles, background noise, microphone quality, and the design of the speaking task. Consequently, a numerical score should not automatically be treated as an objective or complete measure of a learner's ability.

Validity and reliability should therefore be examined for the intended learner population and assessment purpose. Where feasible, AI-generated scores should be compared with ratings from trained human assessors using a shared rubric. Teachers should review unexpected or consequential results, explain the assessment criteria, and allow students to question or contextualise automated feedback. Institutions should also communicate how recordings and transcripts are stored, who can access them, and whether they are used for purposes beyond assessment. Clear consent procedures and appropriate data-protection safeguards are essential.

Conclusion. Artificial intelligence tools can support the assessment of students' speaking proficiency by increasing access to practice, providing rapid feedback, and offering supplementary information about selected aspects of spoken performance. Their usefulness, however, depends on the quality of the tool, the assessment criteria, the learner context, and the way results are interpreted. AI should therefore be used as an aid to professional judgement, not as an unquestioned substitute for teachers. A

balanced approach combining validated AI tools, transparent rubrics, human review, and data protection is more educationally defensible than relying on automated scores alone. Future empirical research should compare AI ratings with trained human ratings across different proficiency levels and language backgrounds, while examining whether AI feedback leads to measurable improvement over time.

References

1. Council of Europe. (2020). Common European Framework of Reference for Languages: Learning, teaching, assessment—Companion volume. Council of Europe Publishing.

2. Chapelle, C. A., & Voss, E. (2016). 20 years of technology and language assessment in Language Learning & Technology. Language Learning & Technology, 20(2), 116–128.

3. Xi, X. (2010). Automated scoring and feedback systems: Where are we and where are we heading? Language Testing, 27(3), 291–300.

4. Zechner, K., Higgins, D., Xi, X., & Williamson, D. M. (2009). Automatic scoring of non-native spontaneous speech in tests of spoken English. Speech Communication, 51(10), 883–895.

SEMANTIC AND SYNTACTIC FEATURES OF TRANSITIVE AND INTRANSITIVE VERBS IN ENGLISH AND UZBEK

Gulbahor Husanboy qizi Turgunboeva
Umbrella Learning Center, Uzbekistan

Abstract

This thesis examines transitive and intransitive verbs in English and Uzbek from a contrastive linguistic perspective. It focuses on the relationship between verb meaning, argument structure, and the grammatical expression of participants. Although verbs in the two languages may have similar lexical meanings, their syntactic patterns do not always correspond directly. The examples *"She opened the door"* and *"U eshikni ochdi"* illustrate a close correspondence between English and Uzbek transitive constructions. In contrast, *"The door opened"* and *"Eshik ochildi"* demonstrate that similar situations can be expressed through different grammatical structures. The discussion also considers the relationship between transitivity and the voice category. It argues that transitivity should be analysed by examining verb meaning, grammatical structure, and context rather than relying exclusively on direct translation. The findings presented are descriptive observations and require further verification through systematic analysis of authentic linguistic data.

Keywords

contrastive linguistics, transitivity, intransitivity, verb, argument structure, English, Uzbek, syntax, semantics.

INGLIZ VA O‘ZBEK TILLARIDA O‘TIMLI VA O‘TIMSIZ FE’LLARNING SEMANTIK-SINTAKTIK XUSUSIYATLARI

Turg‘unboyeva Gulbaxor Husanboy qizi - *Umbrella Learning Center, O‘zbekiston*

Annotatsiya. Ushbu tezis ingliz va o‘zbek tillarida o‘timli hamda o‘timsiz fe’llarning xususiyatlarini chog‘ishtirma tilshunoslik nuqtayi nazaridan o‘rganadi. Unda

fe’lning leksik ma’nosi, argument tuzilishi va gap ishtirokchilarining grammatik ifodalanishi o‘rtasidagi munosabatlar tahlil qilinadi. Ikki tildagi fe’llar o‘xshash lug‘aviy ma’noga ega bo‘lishiga qaramay, ularning sintaktik qo‘llanishi har doim ham bir-biriga mos kelavermaydi. “She opened the door” va “U eshikni ochdi” misollari ingliz va o‘zbek tillaridagi o‘timli tuzilmalarning o‘xshashligini ko‘rsatadi. “The door opened” va “Eshik ochildi” misollarida esa o‘xshash vaziyat turli grammatik vositalar orqali ifodalanadi. Shuningdek, tezisda o‘timlilikning nisbat kategoriyasi bilan aloqasi ko‘rib chiqiladi. Fe’llarni faqat bevosita tarjima asosida emas, balki ularning ma’nosi, grammatik tuzilishi va kontekstdagi qo‘llanishini hisobga olgan holda tahlil qilish zarurligi ta’kidlanadi. Keltirilgan kuzatishlar tavsifiy xususiyatga ega bo‘lib, ularni tabiiy til materiallari asosida tizimli ravishda tekshirish lozim.

Kalit so‘zlar: chog‘ishtirma tilshunoslik, o‘timlilik, o‘timsizlik, fe’l, valentlik, ingliz tili, o‘zbek tili, sintaksis, semantika.

1. Kirish

Fe’l gapning mazmuniy va grammatik markazlaridan biri hisoblanadi. Uning ma’nosi gapda qanday ishtirokchilar qatnashishi, bu ishtirokchilar qanday grammatik shaklda ifodalanishi va gapning qanday sintaktik tuzilishga ega bo‘lishiga ta’sir ko‘rsatadi. Shu jihatdan o‘timli va o‘timsiz fe’llarni o‘rganish fe’l semantikasi hamda sintaksis o‘rtasidagi munosabatlarni aniqlashda muhim ahamiyatga ega.

O‘timli fe’llar odatda harakatning bevosita obyektini ifodalovchi to‘ldiruvchi bilan qo‘llanadi. O‘timsiz fe’llar esa bevosita obyektni talab qilmaydi. Biroq ushbu farqni faqat fe’lning lug‘aviy ma’nosi orqali belgilash har doim ham yetarli emas. Ayrim fe’llar kontekstga qarab turli sintaktik tuzilmalarda ishlatilishi mumkin.

Ingliz va o‘zbek tillarining chog‘ishtirma tahlili mazkur hodisaning umumiy va farqli jihatlarini aniqlashga yordam beradi. Ayniqsa, fe’lning valentligi, to‘ldiruvchining grammatik ifodalanishi va nisbat kategoriyasi bilan aloqasi alohida e’tibor talab qiladi.

2. Tadqiqotning maqsadi va usullari

Tadqiqotning maqsadi ingliz va o‘zbek tillarida o‘timli va o‘timsiz fe’llarning semantik-sintaktik xususiyatlarini tavsiflash hamda ularning qo‘llanishidagi o‘xshashlik va farqlarni ko‘rsatishdan iborat.

Tezisda tavsifiy va chog‘ishtirma tahlil usullaridan foydalaniladi. Misollar quyidagi mezonlar asosida ko‘rib chiqiladi:

- fe’lning leksik-semantik ma’nosi;
- fe’l bilan bog‘lanadigan grammatik ishtirokchilar;
- bevosita obyektning mavjudligi yoki mavjud emasligi;
- gapning sintaktik tuzilishi;
- kontekstning fe’l talqiniga ta’siri.

Keltirilgan misollar nazariy tahlil uchun xizmat qiladi. Ular statistik korpus tahlili yoki eksperimental tadqiqot natijalari sifatida taqdim etilmaydi.

3. Ingliz va o‘zbek tillarida o‘timli fe’llar

O‘timli fe’llar harakatning boshqa shaxs yoki predmetga yo‘nalishini ifodalashi mumkin. Ingliz tilidagi *“She opened the door”* gapi bunga misol bo‘ladi. Ushbu gapda *she* harakatni bajaruvchini, *the door* esa harakat ta’sir qilayotgan obyektni bildiradi.

O‘zbek tilidagi “U eshikni ochdi” gapida ham “u” bajaruvchini, “eshikni” esa bevosita obyektni ifodalaydi. Ingliz tilida obyekt odatda fe’ldan keyin keladi, o‘zbek tilida esa obyektning vazifasi ko‘pincha tushum kelishigi orqali ko‘rsatiladi. Demak, mazkur misolda ikki tilning sintaktik tuzilishida o‘xshashlik mavjud bo‘lsa-da, grammatik munosabatlarni ifodalash vositalari farqlanadi.

O‘timlilikni tahlil qilishda faqat obyektning gapda ochiq ifodalanganiga qarab xulosa chiqarish to‘g‘ri emas. Masalan, ingliz tilidagi *“They are eating”* gapida obyekt ko‘rsatilmagan bo‘lsa-da, *eat* fe’li boshqa kontekstlarda obyekt bilan ishlatilishi

mumkin: *"They are eating dinner."* Bu holat fe'lning sintaktik xususiyatlarini kontekst bilan birgalikda o'rganish kerakligini ko'rsatadi.

O'zbek tilida ham "U ovqat yeyapti" va "U ovqatni yeyapti" kabi gaplarda obyektning ifodalanishi turlicha bo'lishi mumkin. Bunday misollar o'timlilikni tahlil qilishda grammatik shakl bilan birga ma'no va kontekstni hisobga olish muhimligini ko'rsatadi.

4. O'timsiz fe'llar va sintaktik tuzilish

O'timsiz fe'llar bevosita obyektni talab qilmaydigan fe'llardir. Masalan, ingliz tilidagi *"The child slept"* va o'zbek tilidagi "Bola uxladi" gaplarida harakat yoki holatni ifodalovchi fe'llar bevosita obyekt bilan qo'llanmagan.

Biroq ayrim fe'llar bir kontekstda o'timsiz, boshqa kontekstda esa o'timli tuzilishda ishlatilishi mumkin. Ingliz tilidagi *"The door opened"* gapida *open* fe'li bevosita obyekt bilan kelmaydi. *"She opened the door"* gapida esa ayni fe'l o'timli vazifada ishlatilgan. Demak, fe'lning sintaktik xususiyati uning ma'nosi va gapdagi vazifasi bilan chambarchas bog'liq.

O'zbek tilida "Eshik ochildi" va "U eshikni ochdi" gaplari mazmunan bir-biriga yaqin vaziyatlarni ifodalaydi, lekin grammatik jihatdan farq qiladi. Birinchi gapda eshik holatining o'zgarishi tasvirlanadi, ikkinchisida esa harakatni bajaruvchi ham ko'rsatiladi. "Ochildi" shaklining grammatik talqini nisbat kategoriyasi bilan ham bog'liq bo'lgani uchun bunday misollarni faqat o'timlilik nuqtayi nazaridan emas, balki nisbat bilan aloqador holda ham tahlil qilish lozim.

5. O'timlilik va nisbat kategoriyasining o'zaro munosabati

O'timlilik va nisbat kategoriyalari o'zaro bog'liq, biroq ular bir xil grammatik hodisa emas. O'timlilik fe'lning argument tuzilishi va obyekt bilan munosabatiga taalluqli bo'lsa, nisbat harakat ishtirokchilarining gapdagi grammatik tashkil etilishi bilan bog'liq.

Ingliz tilidagi quyidagi gaplarni ko‘rib chiqamiz:

The researcher analysed the data.

The data were analysed by the researcher.

Birinchi gapda *the researcher* grammatik ega bo‘lib, harakatni bajaruvchini bildiradi. Ikkinchi gapda esa *the data* grammatik ega vazifasiga chiqadi va gap majhul nisbat shaklida tuzilgan.

O‘zbek tilida bu mazmun “Tadqiqotchi ma’lumotlarni tahlil qildi” va “Ma’lumotlar tahlil qilindi” gaplari orqali ifodalanishi mumkin. Misollar o‘timli tuzilmalarning nisbat o‘zgarishi bilan bog‘liq holda qayta tashkil etilishini ko‘rsatadi.

Shunga qaramay, barcha o‘timli fe’llar har qanday sharoitda majhul nisbatda qo‘llanadi, degan xulosaga kelish mumkin emas. Fe’lning leksik ma’nosi, grammatik cheklovlar va kontekst muayyan shaklning qo‘llanishiga ta’sir ko‘rsatadi. Shu sababli o‘timlilik va nisbatni o‘zaro aloqador, ammo mustaqil tahlil mezonlari sifatida ko‘rib chiqish maqsadga muvofiq.

6. Xulosa

Ingliz va o‘zbek tillarida o‘timli va o‘timsiz fe’llar harakatning ishtirokchilari, obyektning mavjudligi va gapning sintaktik tuzilishi bilan bog‘liq muhim xususiyatlarga ega. Ayrim fe’llar ikki tilda o‘xshash sintaktik qoliplarda qo‘llansa, boshqa holatlarda obyektning ifodalanishi yoki fe’l shaklining grammatik vazifasi farqlanishi mumkin.

Chog‘ishtirma tahlil shuni ko‘rsatadiki, fe’lning o‘timliligini faqat lug‘aviy tarjima asosida aniqlash yetarli emas. Fe’lning semantik xususiyatlari, argument tuzilishi va kontekstual qo‘llanishi birgalikda o‘rganilishi lozim. Bundan tashqari, o‘timlilikning nisbat kategoriyasi bilan aloqasi ham grammatik tuzilishlarni chuqurroq tushunishga yordam beradi.

Kelgusidagi tadqiqotlarda ingliz va o‘zbek badiiy matnlaridan tizimli ravishda misollar yig‘ish, fe’llarni semantik guruhlarga ajratish va ularning argument tuzilishini

qiyoslash mumkin. Bunday yondashuv ikki tilning leksik-grammatik tizimidagi umumiylik va farqlarni aniqroq tavsiflashga xizmat qiladi.

Foydalanilgan adabiyotlar

1. Comrie, B. (1989). *Language Universals and Linguistic Typology: Syntax and Morphology* (2nd ed.). University of Chicago Press.

2. Levin, B. (1993). *English Verb Classes and Alternations: A Preliminary Investigation*. University of Chicago Press.

3. Quirk, R., Greenbaum, S., Leech, G., & Svartvik, J. (1985). *A Comprehensive Grammar of the English Language*. Longman.

The Artistic Interpretation of Love and the Idea of Human Perfection in the Works of Alisher Navoi and Goethe

Tillabayeva Zuhraxon Xamidillo qizi
Independent researcher

Abstract. This thesis presents a comparative analysis of love and human perfection in Alisher Navoi's Farhod va Shirin and Goethe's West-Eastern Divan. In Navoi's epic, love is closely connected with devotion, hard work, and moral growth, whereas in Goethe's poetry it is expressed through inner feelings, spiritual freedom, and dialogue between Eastern and Western cultures. The study employs comparative-analytical and historical-literary methods.

Keywords: Alisher Navoi, Goethe, love, human perfection, Farhod va Shirin, West-Eastern Divan, comparative literature, literary imagery.

ALISHER NAVOIY VA GYOTE IJODIDA MUHABBAT VA KOMILLIK G‘OYASINING BADIIY TALQINI

Tillabayeva Zuhraxon Xamidillo qizi Mustaqil izlanuvchi

Annotatsiya. Mazkur tezisda Alisher Navoiyning “Farhod va Shirin” dostoni hamda Iogann Volfgang Gyotening “G‘arbu Sharq devoni” asarida muhabbat va inson kamoloti g‘oyalarining badiiy ifodasi qiyosiy tahlil qilinadi. Navoiy ijodida muhabbat fidoyilik, mehnatsevarlik va ma’naviy yuksalish bilan uyg‘unlashsa, Gyote she’riyatida u insonning ichki kechinmalari, ruhiy erkinligi va Sharq hamda G‘arb madaniyatlari o‘rtasidagi muloqot bilan bog‘liq holda namoyon bo‘ladi. Tadqiqotda qiyosiy-tahliliy va tarixiy-adabiy metodlardan foydalaniladi.

Kalit so‘zlar: Alisher Navoiy, Gyote, muhabbat, komillik, “Farhod va Shirin”, “G‘arbu Sharq devoni”, qiyosiy adabiyotshunoslik, badiiy obraz.

Kirish. Muhabbat va inson kamoloti jahon adabiyotining umuminsoniy mavzularidan biri bo‘lib, badiiy adabiyotda u faqat ikki inson o‘rtasidagi tuyg‘u emas,

balki insonning o‘zligini anglashi, ma’naviy yuksalishi va hayot mazmunini tushunishiga ta’sir qiluvchi kuch sifatida ham talqin etiladi.

Alisher Navoiy “Farhod va Shirin” dostonida muhabbat, sadoqat, mehnat va insoniy fazilatlarni uyg‘unlikda ifodalaydi. Gyote esa “G‘arbu Sharq devoni”da Sharq she’riyati an’analaridan ilhomlanib, muhabbat, ruhiy kechinmalar va madaniyatlararo muloqot mavzusiga murojaat qiladi. Tadqiqotning maqsadi — Navoiy va Gyote ijodida muhabbatning inson kamoloti bilan bog‘liq jihatlarini ochib berish hamda o‘xshash va farqli tomonlarini aniqlash.

Asosiy qism. “Farhod va Shirin” “Xamsa” turkumining ikkinchi dostoni bo‘lib [1; 4; 5], unda Farhod obrazi orqali insonning ma’naviy va axloqiy fazilatlari yoritiladi. Farhod ilmga intilishi, mehnatsevarligi, jasorati va Shiringa sadoqati bilan ajralib turadi; uning muhabbati shaxsiy tuyg‘u doirasida qolmay, butun hayot yo‘lini belgilovchi kuchga aylanadi. Farhodning mashaqqatli mehnati, tog‘ni kesib suv chiqarishga intilishi muhabbatning amaliy harakatlar bilan uyg‘unligini ko‘rsatadi: qahramonning komilligi his-tuyg‘ularidangina emas, mehnati, matonati va boshqalarga foyda keltirishga intilishidan ham ko‘rinadi. Demak, dostonda komil inson tushunchasi muhabbat, bilim, mehnat va axloqiy mas’uliyatning birligi orqali ochiladi.

Gyotening “G‘arbu Sharq devoni” Sharq adabiyoti va falsafasiga qiziqish natijasida yuzaga kelgan lirik asar bo‘lib [2; 3], unda shoir Sharq she’riyatining obrazlari va poetik an’analaridan ijodiy foydalanib, muhabbat, ruhiy tajriba hamda inson va olam munosabatlarini yoritadi. “Muhabbat kitobi” kabi qismlarda muhabbat lirik ifodaning markaziy mavzularidan biri bo‘lib, insonning ruhiy tajribasini boyitadi; Sharq she’riyatiga murojaat esa uni madaniyatlararo tushunish va ma’naviy yaqinlikni ifodalovchi vosita sifatida ham talqin qilish imkonini beradi.

Muhim mushtarak jihat shuki, har ikki adib muhabbatni insonning ichki dunyosi bilan bog‘laydi, biroq bu g‘oya turli vositalarda ifodalanadi: Navoiy dostonida muhabbat qahramonning aniq harakatlari, sinovlari va fidoyiligi orqali ochilsa, Gyote devonida lirik kechinmalar, ramziy obrazlar va Sharqona poetik an’analar muhim o‘rin

tutadi. Komillik talqinida ham o‘ziga xoslik bor: Navoiyda yetuklik ko‘proq sadoqat, mehnat va axloqiy fazilatlar orqali gavdalansa, Gyoteda ichki kechinmalarni anglash, ruhiy tajriba orttirish va turli madaniy qarashlar bilan muloqot muhim. Shunday bo‘lsa-da, ikkala badiiy olamda ham muhabbat insonning ma’naviy imkoniyatlarini namoyon qiluvchi omil sifatida talqin etiladi.

Bu o‘xshashliklar ikki ijodkor o‘rtasida bevosita ta’sir borligini o‘z-o‘zidan isbotlamaydi; ularni turli adabiy an’analardagi umuminsoniy mavzularning qiyosiy namoyon bo‘lishi sifatida baholash maqsadga muvofiq. Navoiyning “G‘arbu Sharq devoni”ga bevosita ta’sirini tasdiqlash uchun alohida tarixiy va matniy dalillar zarur [3].

Xulosa. Navoiy va Gyote ijodida muhabbat insonning ma’naviy dunyosini boyituvchi va kamolotiga xizmat qiluvchi muhim badiiy-falsafiy tushuncha sifatida namoyon bo‘ladi. “Farhod va Shirin”da u sadoqat, mehnatsevarlik, fidoyilik va axloqiy yetuklik bilan uyg‘unlashsa, “G‘arbu Sharq devoni”da lirik kechinmalar, ruhiy tajriba va madaniyatlararo muloqot bilan bog‘liq holda ifodalanadi. Janr va an’analar farqiga qaramay, har ikki ijodkor muhabbatning inson hayotidagi o‘rni va ichki dunyosiga ta’sirini muhim deb biladi: Navoiy qahramonning amaliy faoliyati va axloqiy fazilatlarini, Gyote lirik kechinmalar va ruhiy mushohadani ko‘proq ta’kidlaydi.

Foydalanilgan adabiyotlar

1. Alisher Navoiy. Farhod va Shirin. – Toshkent: Fan, 1991. – (Alisher Navoiy. Mukammal asarlar to‘plami, 20 jildlik, 8-jild).

2. Goethe, J. W. West-östlicher Divan. – Frankfurt am Main: Insel Verlag, 1988.

3. Mahmudov, A. Y. Y. V. Gyote asarlarida islom sivilizatsiyasi // O‘zbekistonda xorijiy tillar. – 2022. – № 3 (44). – B. 124–130. https://doi.org/10.36078/1658743911

4. Qayumov, A. “Xamsa”. – Toshkent: Fan, 1986.

5. Sirojiddinov, Sh., Yusupova, D., Davlatov, O. Navoiyshunoslik. – Toshkent: Akademnashr, 2020.

THE CURRENT STATE OF KNOWLEDGE OF THE BRANCHIOPODA (CRUSTACEA) FAUNA IN THE AQUATIC ECOSYSTEMS OF KHOREZM REGION

Masharipova Anajon Alisher qizi

Master's Student at Urgench State University named after Abu Rayhan Beruni

Abstract

This article reviews the current state of knowledge, taxonomic diversity, and future research prospects of Branchiopoda (Crustacea) fauna in the aquatic ecosystems of the Khorezm Region based on an analysis of scientific literature. Faunistic and ecological studies of Branchiopoda conducted in Uzbekistan, particularly in the Lower Amu Darya Basin, are summarized, with particular emphasis on the distribution and ecological significance of this group in natural and anthropogenic water bodies. The limited availability of scientific data on Branchiopoda fauna in the Khorezm Region, as well as the insufficient investigation of certain aquatic habitats and taxonomic groups, is discussed.

Keywords

Branchiopoda, Crustacea, Khorezm Region, Lower Amu Darya, aquatic ecosystems, taxonomic diversity, Cladocera, zooplankton.

XORAZM VILOYATI SUV EKOTIZIMLARIDA BRANCHIOPODA (CRUSTACEA) FAUNASINING O‘RGANILGANLIK HOLATI

Masharipova Anajon Alisher qizi

Abu Rayhon Beruniy nomidagi urganch davlat universiteti magistranti

E-mail: @mawaripovaanaxon002

Annotatsiya. Ushbu maqolada Xorazm viloyati suv ekotizimlarida Branchiopoda (Crustacea) faunasining o‘rganilganlik holati, taksonomik xilma-xilligi va kelgusidagi tadqiqot istiqbollari ilmiy adabiyotlar asosida tahlil qilinadi. O‘zbekiston, xususan, Quyi

Amudaryo havzasida Branchiopoda vakillariga oid olib borilgan faunistik va ekologik tadqiqotlar umumlashtirilib, mazkur guruhning tabiiy hamda antropogen suv havzalarida tarqalishi va ekologik ahamiyatiga e’tibor qaratiladi. Mavjud ilmiy manbalarda Xorazm viloyati Branchiopoda faunasi haqidagi ma’lumotlarning cheklanganligi, ayrim suv havzalari va taksonomik guruhlarning yetarli darajada tadqiq etilmaganligi muhokama qilinadi.

Kalit so‘zlar: Branchiopoda, Crustacea, Xorazm viloyati, Quyi Amudaryo, suv ekotizimlari, taksonomik xilma-xillik, Cladocera, zooplankton.

Аннотация. В данной статье на основе анализа научной литературы рассматриваются современное состояние изученности фауны Branchiopoda (Crustacea) в водных экосистемах Хорезмской области, её таксономическое разнообразие и перспективы дальнейших исследований. Обобщены результаты фаунистических и экологических исследований представителей Branchiopoda, проведённых в Узбекистане, в частности в бассейне Нижней Амударьи. Особое внимание уделено распространению и экологическому значению данной группы организмов в естественных и антропогенных водоёмах. Обсуждаются ограниченность имеющихся научных данных о фауне Branchiopoda Хорезмской области, а также недостаточная изученность отдельных водоёмов и таксономических групп.

Ключевые слова: Branchiopoda, Crustacea, Хорезмская область, Нижняя Амударья, водные экосистемы, таксономическое разнообразие, Cladocera, зоопланктон.

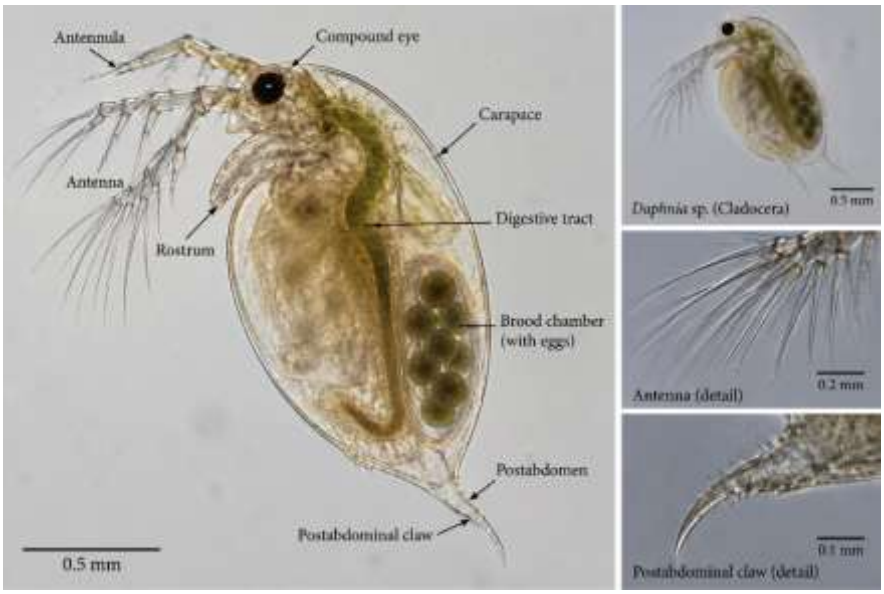
Kirish. Suv ekotizimlarining biologik xilma-xilligini o‘rganish, gidrobiontlarning taksonomik tarkibini aniqlash va ularning ekologik omillarga moslashuv xususiyatlarini baholash zamonaviy zoologiya hamda gidroekologiyaning dolzarb yo‘nalishlaridan hisoblanadi. Ayniqsa, iqlim o‘zgarishi, suv resurslaridan intensiv foydalanish,

sug‘oriladigan dehqonchilikning rivojlanishi va suv havzalarining antropogen transformatsiyasi sharoitida gidrobiontlar jamoalarining tarkibi hamda dinamikasini tadqiq etish muhim ilmiy-amaliy ahamiyat kasb etmoqda. Bunday tadqiqotlarda qisqichbaqasimonlarning Branchiopoda sinfi vakillari suv ekotizimlaridagi trofik munosabatlar, biologik xilma-xillik va ekologik o‘zgarishlarni o‘rganish uchun muhim obyektlardan biri hisoblanadi [1,2]. Branchiopoda sinfi chuchuk suv ekotizimlarida keng tarqalgan qisqichbaqasimonlar guruhlaridan bo‘lib, uning tarkibiga Cladocera, Anostraca, Notostraca va Spinicaudata kabi taksonomik guruhlar kiradi. Mazkur organizmlar suv havzalaridagi oziq zanjirining muhim bo‘g‘inini tashkil etib, fitoplankton biomassasining boshqarilishi, organik moddalarning aylanishi va energiyaning yuqori trofik darajalarga uzatilishida ishtirok etadi. Ayrim Branchiopoda vakillarining noqulay ekologik sharoitlarga chidamli tinim tuxumlarini hosil qilishi ularning vaqtinchalik suv havzalarida saqlanib qolishi va yangi biotoplarni egallashiga imkon beradi. Shu bilan birga, ularning tur tarkibi, populyatsiya zichligi va jamoa strukturasi suv muhitining fizik-kimyoviy xususiyatlari hamda antropogen ta’sirga bog‘liq ravishda o‘zgarishi mumkin [1,2].

Markaziy Osiyo, jumladan, O‘zbekiston hududida Branchiopoda faunasini o‘rganish uzoq tarixga ega bo‘lishiga qaramay, mavjud faunistik ma’lumotlar hududlar va suv havzalari turlari bo‘yicha notekis taqsimlangan. Dadykin va hammualliflar (2026) tomonidan O‘zbekiston Branchiopoda faunasiga oid tarixiy va zamonaviy ma’lumotlar umumlashtirilib, mamlakat hududida 107 tur qayd etilgan. Tadqiqot natijalariga ko‘ra, Qoraqalpog‘iston Respublikasida 82 tur ma’lum bo‘lsa, Xorazm, Qashqadaryo, Navoiy va Sirdaryo viloyatlarining har birida 25 tadan kam takson qayd etilgan. Xorazm viloyati va unga tutash Quyi Amudaryo hududlarida qisqichbaqasimonlar faunasiga oid ayrim tadqiqotlar ilgari ham amalga oshirilgan. Jumladan, Aripov (1972) tomonidan Xorazm viloyati va Qoraqalpog‘iston

sholizorlarining abiotik sharoitlari, flora va faunasi o‘rganilgan. Keyingi davrlarda baliqchilik hovuzlari va boshqa suv obyektlarining gidrobiologik xususiyatlariga oid tadqiqotlar olib borilgan. Biroq ushbu ma’lumotlarning katta qismi muayyan suv havzalari yoki ayrim taksonomik guruhlar bilan chegaralangan. Zamonaviy umumlashtiruvchi tadqiqotlarda ham Xorazm viloyati Branchiopoda faunasi yetarlicha o‘rganilmagan hududiy faunalardan biri sifatida baholanadi [1].

Branchiopoda faunasini tadqiq etishning istiqbolli yo‘nalishlaridan biri ularning bioindikatsion imkoniyatlarini baholashdir. Xususan, Cladocera vakillarining qisqa hayot sikli, ekologik omillarga sezgirligi hamda populyatsiya ko‘rsatkichlarining nisbatan tez o‘zgarishi ulardan suv muhitidagi ekologik o‘zgarishlarni kuzatishda foydalanish imkonini beradi. Ilmiy adabiyotlarda kladotseralarning tur tarkibi, soni, ko‘payish xususiyatlari va funksional xilma-xilligi suv havzalarining trofik holati, ifloslanish darajasi hamda boshqa antropogen omillar bilan bog‘liq holda o‘zgarishi ko‘rsatilgan.



1-rasm. Cladocera vakili — Daphnia sp. ning umumiy morfologik tuzilishi va asosiy anatomik belgilari.

Biroq indikatorlik xususiyatlari muayyan hududning gidrologik va ekologik

sharoitlariga bog‘liq bo‘lishi sababli ularni mahalliy tadqiqotlar asosida baholash zarur [2]. Shu nuqtayi nazardan, Xorazm viloyatining tabiiy va antropogen suv ekotizimlarida Branchiopoda faunasining o‘rganilganlik holatini tahlil qilish, mavjud taksonomik ma’lumotlarni umumlashtirish va tadqiqotlar yetarli olib borilmagan yo‘nalishlarni aniqlash dolzarb ilmiy vazifa hisoblanadi. Ayniqsa, tabiiy va sun’iy suv havzalarini qiyosiy o‘rganish, Branchiopoda jamoalarining fazoviy-mavsumiy dinamikasini aniqlash, suvning fizik-kimyoviy ko‘rsatkichlari bilan bog‘liqligini baholash hamda bioindikatsion ahamiyatga ega taksonlarni aniqlashga qaratilgan tadqiqotlarni rivojlantirish zarur.

Tadqiqotning maqsadi - O‘zbekiston va Quyi Amudaryo havzasida Branchiopoda (Crustacea) faunasiga oid chop etilgan ilmiy manbalarni tahlil qilish asosida Xorazm viloyati suv ekotizimlarida mazkur guruhning o‘rganilganlik darajasini baholash, mavjud faunistik-ekologik ma’lumotlarni umumlashtirish hamda kelgusidagi taksonomik, ekologik va bioindikatsion tadqiqotlarning ustuvor yo‘nalishlarini belgilash.

Adabiyotlar tahlili. Branchiopoda (Crustacea) sinfiga mansub organizmlarning taksonomik xilma-xilligi, ekologik xususiyatlari va suv ekotizimlaridagi funksional ahamiyatini o‘rganish zamonaviy gidrobiologiya hamda zoologiyaning muhim tadqiqot yo‘nalishlaridan hisoblanadi. Mazkur guruh tarkibidagi Cladocera vakillari chuchuk suv havzalarida keng tarqalgan bo‘lib, oziq zanjiridagi ishtiroki, ekologik omillarga sezgirligi va ayrim turlarining bioindikatsion imkoniyatlari bilan ajralib turadi. Ilmiy adabiyotlarda kladotseralarning taksonomiyasi, geografik tarqalishi, populyatsiya dinamikasi hamda antropogen omillarga javob reaksiyalariga bag‘ishlangan ko‘plab tadqiqotlar mavjud. Forró va hammualliflar (2008) tomonidan chuchuk suv ekotizimlarida Cladocera vakillarining global xilma-xilligi tahlil qilinib, mazkur guruhning taksonomik tarkibi va geografik tarqalishini o‘rganishning ahamiyati

yoritilgan [15]. Ushbu tadqiqot Cladocera faunasini hududiy miqyosda inventarizatsiya qilish, tur tarkibini aniqlashtirish va biologik xilma-xillikni qiyosiy baholash uchun muhim nazariy asos bo‘lib xizmat qiladi. Xorazm viloyati suv ekotizimlarida Branchiopoda faunasini tadqiq etishda ham global taksonomik ma’lumotlarni hududiy faunistik kuzatuvlar bilan qiyoslash muhim ahamiyat kasb etadi. Cladocera faunasining hududiy o‘rganilganlik holatini baholashga qaratilgan tadqiqotlar orasida Elmoor-Loureiro (2000) tomonidan Braziliya kladotseralarining o‘rganilish darajasiga bag‘ishlangan ilmiy ish alohida o‘rin tutadi [16]. Santos-Wisniewski va hammualliflar (2011) esa Minas-Jerays shtatining chuchuk suv havzalaridagi Cladocera xilma-xilligi bo‘yicha mavjud ma’lumotlarni umumlashtirgan [17]. Sousa va Elmoor-Loureiro (2012) Braziliya Federal okrugida qayd etilgan kladotsera turlarini tahlil qilib, hududiy faunistik ma’lumotlarni tizimlashtirish masalasini ko‘rib chiqqan [18]. Mazkur tadqiqotlar muayyan geografik hududning faunistik o‘rganilganlik darajasini baholashda avvalgi ilmiy manbalarni umumlashtirish, taksonomik ma’lumotlarni qayta ko‘rib chiqish va yetarli o‘rganilmagan suv biotoplarini aniqlash zarurligini ko‘rsatadi.

Tadqiqot metodologiyasi. Tadqiqot Xorazm viloyati tabiiy va antropogen suv ekotizimlarida Branchiopoda (Crustacea) faunasining o‘rganilganlik holatini baholashga qaratilgan bo‘lib, adabiyotlar tahlili va qiyosiy-faunistik yondashuvlarga asoslandi. Tadqiqot doirasida Xorazm viloyati hamda Quyi Amudaryo havzasining ko‘llari, sug‘orish kanallari, kollektor-drenaj tarmoqlari va vaqtinchalik suv havzalariga oid mavjud ilmiy manbalar tahlil qilindi. Branchiopoda vakillarining taksonomik tarkibi, ekologik xususiyatlari va geografik tarqalishiga doir ma’lumotlar tizimlashtirilib, xalqaro tadqiqotlar bilan qiyosiy baholandi. Olingan adabiy ma’lumotlar asosida hududiy faunaning yetarlicha o‘rganilmagan jihatlari aniqlanib, kelgusidagi taksonomik, faunistik va ekologik tadqiqotlarning ustuvor yo‘nalishlari belgilandi.

Tahlil va natijalar. Xorazm viloyati suv ekotizimlarida Branchiopoda (Crustacea) faunasining o‘rganilganlik holatini baholash maqsadida mazkur guruhning taksonomik xilma-xilligi, ekologik xususiyatlari, geografik tarqalishi va bioindikatsion ahamiyatiga oid 26 ta ilmiy manba tematik jihatdan tahlil qilindi. Manbalar tadqiqotning ustuvor yo‘nalishiga ko‘ra beshta guruhga ajratildi: faunistik inventarizatsiya, taksonomiya va sistematika, ekologiya va moslashuv, ekotoksikologiya va bioindikatsiya hamda statistik metodologiya.

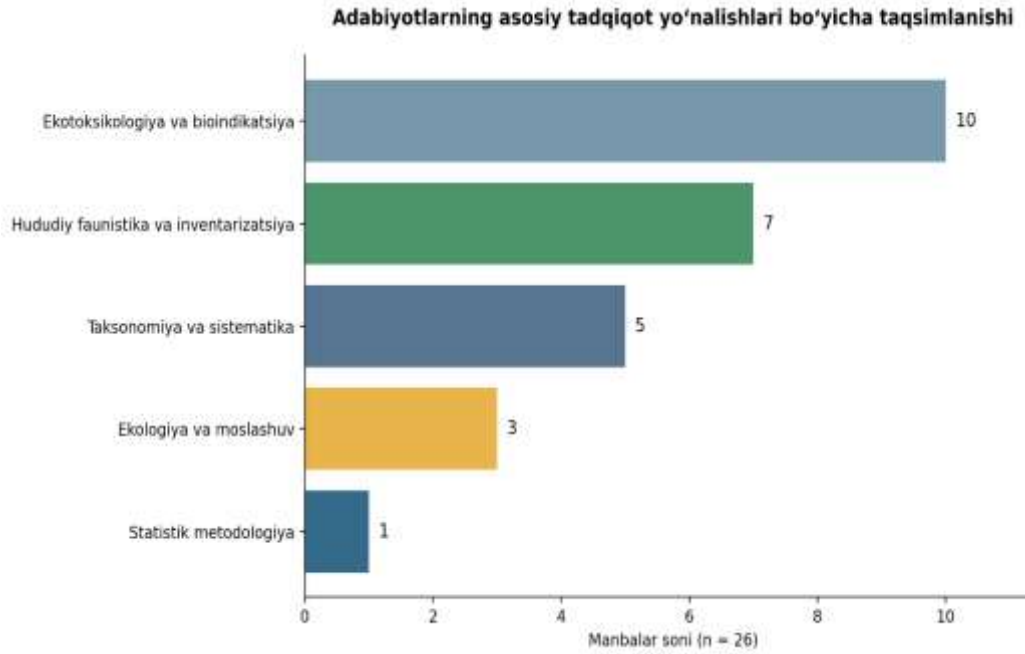
1. Ilmiy tadqiqotlarning yo‘nalishlari bo‘yicha taqsimlanishi. Tahlil natijasida 10 ta manba (38,5%) ekotoksikologiya va bioindikatsiya, 7 tasi (26,9%) hududiy faunistika va inventarizatsiya, 5 tasi (19,2%) taksonomiya va sistematika, 3 tasi (11,5%) ekologiya va moslashuv hamda 1 tasi (3,8%) statistik metodologiyaga oid ekanligi aniqlandi. Ushbu taqsimot ko‘rib chiqilgan adabiyotlarda Cladocera vakillarining antropogen omillarga sezgirligi va hududiy xilma-xilligini o‘rganish masalalari muhim o‘rin egallashini ko‘rsatadi (1-rasm).

2. Branchiopoda faunasining taksonomik o‘rganilganlik holati. Xalqaro tadqiqotlar Cladocera vakillarining taksonomik tarkibi muntazam ravishda qayta ko‘rib chiqilayotganligini ko‘rsatadi. Jumladan, Alona, Anthalona, Macrothrix va Monospilus turkumlariga oid tadqiqotlarda morfologik belgilar asosida turlarni chegaralash va sistematik holatini aniqlashtirish masalalari yoritilgan [22–26]. Bu holat Xorazm viloyati suv havzalaridan aniqlanadigan Branchiopoda namunalarini zamonaviy taksonomik mezonlar asosida identifikatsiya qilish zarurligini ko‘rsatadi. Ayniqsa, tashqi morfologik jihatdan o‘xshash turlarni farqlashda diagnostik belgilarni batafsil o‘rganish muhim hisoblanadi.

3. Tabiiy va antropogen suv ekotizimlarining faunistik ahamiyati. Hududiy faunistik tadqiqotlar tabiiy suv-botqoq maydonlari, suv o‘simliklari bilan qoplangan biotoplar va boshqa chuchuk suv muhitlarini alohida o‘rganish zarurligini ko‘rsatadi

[17–21]. Xorazm viloyati sharoitida Amudaryo bilan bog‘liq suv havzalari, tabiiy ko‘llar, sug‘orish kanallari, kollektor-drenaj tizimlari va vaqtinchalik suv to‘planadigan maydonlar Branchiopoda faunasini qiyosiy o‘rganish uchun istiqbolli obyektlar hisoblanadi. Ushbu suv havzalari gidrologik rejimi, sho‘rlanish darajasi, suv o‘simliklari va antropogen ta’sir xususiyatlari bilan farqlanishi mumkin. Mazkur omillarning turlar tarkibiga ta’sirini aniqlash esa maxsus dala kuzatuvlari va gidrokimyoviy tahlillarni talab qiladi.

Shunday qilib, ilmiy adabiyotlarning qiyosiy tahlili Branchiopoda vakillarining xilma-xilligi va ekologik ahamiyatini o‘rganish uchun yetarli xalqaro nazariy-metodologik asoslar mavjudligini ko‘rsatdi. Biroq tahlil qilingan 26 ta manbaning hech biri Xorazm viloyatida o‘tkazilgan bevosita faunistik tadqiqot sifatida aniqlanmadi. Shu sababli hududiy turlar tarkibi va ekologik tarqalish qonuniyatlari haqida yakuniy xulosa chiqarish uchun O‘zbekiston hamda Quyi Amudaryoga oid qo‘shimcha manbalar va dala tadqiqotlari zarur.



2-rasm. Branchiopoda (Crustacea) faunasiga oid ilmiy adabiyotlarning tadqiqot yo‘nalishlari bo‘yicha taqsimlanishi (n = 26).

Xulosa. Ilmiy adabiyotlarning qiyosiy tahlili Xorazm viloyati suv ekotizimlarida Branchiopoda (Crustacea) faunasining taksonomik tarkibi, ekologik xususiyatlari va tarqalish qonuniyatlari yetarli darajada o‘rganilmaganligini ko‘rsatdi. Tahlil qilingan 26 ta ilmiy manbaning 38,5 foizi ekotoksikologiya va bioindikatsiya, 26,9 foizi hududiy faunistika, 19,2 foizi taksonomiya va sistematika, qolgan 15,4 foizi esa ekologik moslashuv hamda statistik metodologiyaga oid ekanligi aniqlandi.

References:

1. Dadykin I.A., Volkova P.A., Madumarov M.J., Madumarova S.O., Ginatullina E.N., Kotov A.A. Revised Checklist of Branchiopoda (Crustacea) in Uzbekistan Highlights Existing Blind Spots in the Knowledge of Regional Fauna // Zoological Studies. – 2026. – Vol. 65. – Article 07. – DOI: 10.6620/ZS.2026.65-07.

2. Dehingia R.K., Pankaj P.P., Kakati L.N., Gogoi J., Chakraborty S. Cladocerans and copepods as bioindicators of aquatic ecosystem health: Ecological roles, anthropogenic stressors and limitations // Ecological Indicators. – 2026. – Vol. 184. – Article 114712. – DOI: 10.1016/j.ecolind.2026.114712.

3. Sarma S.S., Nandini S. Review of recent ecotoxicological studies on cladocerans // Journal of Environmental Science and Health, Part B. – 2006. – Vol. 41. – P. 1417–1430.

4. Miner B.E., De Meester L., Pfrender M.E., Lampert W., Hairston N.G. Jr. Linking genes to communities and ecosystems: Daphnia as an ecogenomic model // Proceedings of the Royal Society B: Biological Sciences. – 2012. – Vol. 279. – P. 1873–1882.

5. Dodson S.I., Hanazato T. Commentary on effects of anthropogenic and natural organic chemicals on development, swimming behavior, and reproduction of

Daphnia, a key member of aquatic ecosystems // Environmental Health Perspectives. – 1995. – Vol. 103, Suppl. 4. – P. 7–11.

6. Versteeg D.J., Stalmans M., Dyer S.D., Janssen C. Ceriodaphnia and Daphnia: A comparison of their sensitivity to xenobiotics and utility as a test species // Chemosphere. – 1997. – Vol. 34. – P. 869–892.

7. Persoone G., Baudo R., Cotman M., Blaise C., Thompson K.C. et al. Review on the acute Daphnia magna toxicity test — Evaluation of the sensitivity and the precision of assays performed with organisms from laboratory cultures or hatched from dormant eggs // Knowledge and Management of Aquatic Ecosystems. – 2009. – No. 393. – Article 01.

8. Zhou Q., Zhang J., Fu J., Shi J., Jiang G. Biomonitoring: An appealing tool for assessment of metal pollution in the aquatic ecosystem // Analytica Chimica Acta. – 2008. – Vol. 606. – P. 135–150.

9. Connon R., Hooper H.L., Sibly R.M., Lim F.L., Heckmann L.H. et al. Linking molecular and population stress responses in Daphnia magna exposed to cadmium // Environmental Science & Technology. – 2008. – Vol. 42. – P. 2181–2188.

10. Cooper N.L., Bidwell J.R., Kumar A. Toxicity of copper, lead, and zinc mixtures to Ceriodaphnia dubia and Daphnia carinata // Ecotoxicology and Environmental Safety. – 2009. – Vol. 72. – P. 1523–1528.

11. Ren Z., Zha J., Ma M., Wang Z., Gerhardt A. The early warning of aquatic organophosphorus pesticide contamination by on-line monitoring behavioral changes of Daphnia magna // Environmental Monitoring and Assessment. – 2007. – Vol. 134. – P. 373–383.

12. Cáceres C.E., Tessier A.J. Incidence of diapause varies among populations of Daphnia pulicaria // Oecologia. – 2004. – Vol. 141. – P. 425–431.

13. Martins J., Oliva Teles L., Vasconcelos V. Assays with Daphnia magna and Danio rerio as alert systems in aquatic toxicology // Environment International. – 2007. – Vol. 33. – P. 414–425.

14. Jemec A., Drobne D., Tišler T., Šepčić K. Biochemical biomarkers in environmental studies — Lessons learnt from enzymes catalase, glutathione S-transferase and cholinesterase in two crustacean species // Environmental Science and Pollution Research. – 2010. – Vol. 17. – P. 571–581.

15. Forró L., Korovchinsky N.M., Kotov A.A., Petrusek A. Global diversity of cladocerans (Cladocera; Crustacea) in freshwater // Hydrobiologia. – 2008. – Vol. 595. – P. 177–184.

16. Elmoor-Loureiro L.M.A. Brazilian cladoceran studies: Where do we stand? // Nauplius. – 2000. – Vol. 8, No. 1. – P. 117–131.

17. Santos-Wisniewski M.J., Matsumura-Tundisi T., Negreiros N.T., Silva L.C., Santos R.M., Rocha O. O estado atual do conhecimento da diversidade de Cladocera (Crustacea, Branchiopoda) nas águas doces do estado de Minas Gerais // Biota Neotropica. – 2011. – Vol. 11, No. 3. – P. 287–331.

18. Sousa F.D.R., Elmoor-Loureiro L.M.A. How many species of cladocerans (Crustacea, Branchiopoda) are found in Brazilian Federal District? // Acta Limnologica Brasiliensia. – 2012. – Vol. 24, No. 4. – P. 351–362.

DEVELOPING HIGH-LEVEL THINKING SKILLS IN FUTURE TEACHERS THROUGH PROBLEM-BASED LEARNING AND MATHEMATICAL TASKS

Yunusova Gulnoza Abduxalikovna

PhD, docent, a. professor of the Department of Preschool and Primary Education Methodology, KIUT

g.yunusova@kiut.uz

Abstract

The preparation of future teachers requires more than the acquisition of ready-made mathematical procedures. Prospective teachers must learn to formulate problems, select and justify strategies, interpret evidence, detect misconceptions, and redesign explanations for learners. This conceptual-methodological paper examines how problem-based learning (PBL) and mathematical research tasks can be integrated to develop these higher-level thinking skills.

Keywords

problem-based learning; future teachers; higher-order thinking; mathematical inquiry; research tasks; pedagogical content knowledge; formative assessment

Introduction

Contemporary teacher education must prepare graduates to act in situations for which no single algorithm is available. A future teacher is expected to interpret unfamiliar classroom evidence, diagnose students' reasoning, compare alternative representations, justify instructional choices, and improve a lesson after observing its effects [1]. These actions involve analysis, evaluation, creation, and metacognitive regulation rather than the reproduction of facts. In mathematics, the demand is especially visible: knowing a formula is not equivalent to understanding why it works, when it is useful, how learners may misinterpret it, or how an alternative solution can be validated.

International frameworks reinforce this shift. The OECD defines mathematical literacy through the capacity to reason mathematically and to formulate, employ, and interpret mathematics in varied real-world contexts [2]. Its creative-thinking framework also treats creativity as a developable competence expressed through generating diverse ideas, generating original ideas, and evaluating and improving ideas. Consequently, teacher education should provide repeated opportunities to make conjectures, test evidence, communicate arguments, and revise incomplete solutions rather than reserve inquiry for exceptional students.

The work of Yunusova provides a locally relevant methodological foundation for this orientation. Her studies connect the mastery of mathematical concepts with active participation, creative and innovative thinking, structured cognitive activity, interactive practice, and continuous feedback [3, 4, 5, 6, 7, 8, 9]. Her research on educational projects and pedagogical qualimetry additionally emphasizes that complex professional competence requires both authentic activity and systematic assessment [4, 6]. Building on these ideas and international evidence, this paper aims to develop a practical framework for cultivating high-level thinking in future teachers through PBL and mathematical research tasks.

Higher-level thinking is used here as an integrated construct comprising four mutually dependent capacities. Analytical thinking decomposes a problem, identifies conditions, and connects representations. Critical thinking evaluates assumptions, the reliability of evidence, and the validity of an argument. Creative thinking generates multiple approaches, examples, models, or pedagogical explanations. Metacognitive thinking plans, monitors, and evaluates one's own reasoning. In the revised taxonomy of educational objectives, these capacities correspond broadly to analysing, evaluating, and creating, but in professional teacher learning they must operate together [1].

This integration matters because future teachers work with two levels of reasoning. At the first level, they solve a mathematical problem and justify the result. At the second, they examine the solution pedagogically: Which prerequisite ideas are involved? What errors are likely? Which questions would reveal understanding? How might the task be adapted for different learners? The second level transforms subject knowledge into pedagogical content knowledge. It also prevents inquiry from becoming an attractive activity that is disconnected from the future teacher's professional decisions.

Yunusova's three-stage view of mathematics lessons is compatible with such development because it assigns different methods to successive phases of cognitive activity [5]. Her active-approach study highlights interaction, student activity, individual and group experience, and feedback as central conditions of practical mathematics instruction [8]. These conditions are not supplementary techniques. They create the social and cognitive environment in which learners must externalize, test, and reconstruct their thinking.

PBL begins with a complex problem that organizes the need for knowledge. Learners clarify the situation, identify what they know and need to learn, gather and evaluate information, develop possible solutions, and reflect on both the outcome and the process. The teacher structures participation and provides strategic scaffolding without converting the problem into a sequence of instructions. A meta-analysis of 50 higher-education studies involving 5,210 participants found an overall positive relationship between PBL interventions and critical-thinking outcomes, while also showing that effects depend on design and implementation variables [10]. Thus, PBL should not be treated as a label that automatically guarantees higher-order thinking.

Evidence from mathematics teacher education is similarly promising but nuanced. Bosica, Pyper, and MacGregor [11] reported meaningful changes in preservice secondary mathematics teachers' beliefs and orientations when PBL was incorporated

into a methods course. Martin [12] found that a closed-loop PBL approach was as effective as teacher-directed instruction on a multiple-choice measure of mathematics pedagogical content knowledge; importantly, PBL participants also enacted their knowledge through open-ended planning and simulated teaching. This cautions against judging an inquiry pedagogy only with instruments designed mainly for declarative knowledge.

Mathematical research tasks complement PBL by making inquiry processes visible. Unlike routine exercises, a research task asks learners to formulate sub-questions, search for patterns, generate examples and counterexamples, vary conditions, represent relationships, make conjectures, and construct an argument. Problem posing is particularly valuable because it requires the learner to reorganize mathematical experience into a meaningful new problem. A recent meta-analysis confirms that problem-posing competence can be deliberately developed, although effective interventions vary and require carefully designed support [13].

The proposed cycle connects PBL, mathematical inquiry, and professional reflection. It is designed for a two- to four-week module in courses such as mathematics teaching methodology, elementary mathematics, geometry, statistics, or assessment. The phases are recursive: new evidence may require learners to return to an earlier decision.

Phase 1 - Problem encounter and orientation. The instructor presents an authentic professional situation with incomplete information and more than one defensible response. For example, future teachers may be asked to redesign a textbook task that produces correct answers but little explanation. Individually, students record initial interpretations and assumptions; in groups, they identify the mathematical and pedagogical tensions. This phase activates prior knowledge and creates a reason to learn.

Phase 2 - Research-question formulation. Groups convert the broad situation into investigable questions. They distinguish questions about mathematical structure from

questions about teaching and learning. A useful protocol asks: What varies? What remains invariant? What evidence would support a claim? What learner response would disconfirm our interpretation? The instructor checks that questions are neither trivial nor too broad.

Phase 3 - Mathematical investigation. Students produce examples, counterexamples, diagrams, tables, symbolic representations, simulations, or small data sets. They compare strategies and document failed attempts. Yunusova's work on frames for mastering mathematical concepts is relevant here: structured organizers can help learners connect definitions, properties, examples, non-examples, and applications without replacing the inquiry itself [3,4].

Phase 4 - Argumentation and revision. Groups present claims and evidence in a research seminar. Peers challenge hidden assumptions, request justification, and propose alternative interpretations. The presenting group revises its solution and makes the chain of reasoning explicit. Revision is essential because high-level thinking is demonstrated not only by producing an idea but also by improving it in response to evidence.

Phase 5 - Pedagogical translation and metacognitive reflection. Students convert their mathematical findings into a lesson fragment, diagnostic question, assessment rubric, or set of prompts for school learners. They then write a brief reflection identifying a turning point in their reasoning, a rejected assumption, and a principle they can transfer to another topic. This closed-loop feature links inquiry to future classroom practice.

A high-quality task must be mathematically accessible at the entry point but expandable in depth. It should contain productive uncertainty: the solution path is not stated, yet the problem remains sufficiently bounded for learners to make progress. Tasks are stronger when they permit several representations, invite generalization, and require justification. For future teachers, an additional layer should ask how the mathematics can be taught, assessed, or adapted.

One example is the task “Same area, different perimeter.” Groups first construct all rectangles with integer side lengths and area 36 square units. They organize the cases, determine the minimum and maximum perimeter under the stated conditions, and explain why their list is complete. They then remove the integer restriction and investigate how the perimeter changes for positive real side lengths. Finally, they design questions that could guide school learners from numerical cases toward the general result. The task combines pattern search, optimization, representation, proof, and pedagogical design. It also generates useful extensions: fixed perimeter and variable area, rectangles versus other quadrilaterals, or the effect of measurement error.

Three safeguards are necessary. First, openness should not mean vagueness: the intended concepts and acceptable evidence must be specified by the instructor. Second, collaboration should preserve individual accountability through research notes, exit explanations, or oral questioning. Third, digital tools should serve reasoning. A spreadsheet or dynamic-geometry system is useful when it helps generate cases or test conjectures, but students must still explain why observed patterns should hold.

Assessment should be aligned with the processes the approach seeks to develop. If only the final numerical answer is graded, students will rationally avoid documenting uncertainty, comparison, and revision. Author [6] describes assessment as a feedback component of educational quality management, while her work on modular-rating systems emphasizes transparent learning programmes, staged control, and independent study [7]. These principles support a combination of diagnostic, formative, and summative evidence.

At the beginning of a module, a short diagnostic task can reveal whether students generate examples, justify claims, and monitor assumptions. During inquiry, the instructor reviews research questions, logs, interim representations, and peer feedback. At the end, the product is assessed together with an individual explanation and reflection.

Table 1 offers a compact analytic framework. Scores may be assigned from 0 (not demonstrated) to 3 (independent and well-justified), but descriptors and exemplars should be discussed before the task begins.

Dimension	**Evidence expected in a strong performance**
Mathematical reasoning	Correct concepts; connected representations; explicit assumptions; valid justification.
Inquiry design	Focused research questions; systematic cases; purposeful use of examples and counterexamples.
Use of evidence	Claims are matched to evidence; limitations are recognized; revisions respond to critique.
Pedagogical translation	Anticipates learner strategies and misconceptions; designs prompts and assessment evidence.
Metacognition and collaboration	Documents decisions, role contributions, failed approaches, and transferable learning.

Table 1. Analytic criteria for assessing mathematical inquiry and pedagogical thinking

The proposed model has three implications for teacher education. First, higher-level thinking should be embedded in disciplinary work rather than taught as a generic list of skills. Critical evaluation in mathematics depends on definitions, representations, and standards of proof; creative thinking depends on sufficient knowledge to produce meaningful alternatives. Second, the unit of design should be a sequence of connected tasks. A single open problem may stimulate interest, but stable habits of inquiry require repeated cycles of formulation, investigation, argumentation, and reflection.

Third, teacher educators need to balance autonomy with scaffolding. Excessive direction reduces a research task to an exercise, whereas insufficient guidance may reward only students who already possess strong inquiry strategies. Productive scaffolds include worked comparisons rather than worked answers, question stems for challenging claims, role rotation in groups, interim conferences, and partially completed representations. Scaffolds should be faded as students gain control of the process.

The synthesis also identifies a methodological caution. Positive outcomes attributed to PBL may vary with the problem type, duration, tutor expertise, group size, and assessment instrument [10]. Future empirical work should therefore report the intervention precisely and use multiple measures: performance tasks, argument quality, reflective writing, and observation of teaching decisions. Longitudinal studies are especially needed to determine whether inquiry habits developed at university transfer into school practice.

Problem-based learning and mathematical research tasks can provide a coherent environment for developing the analytical, critical, creative, and metacognitive capacities required of future teachers. Their value lies not in replacing systematic instruction, but in reorganizing knowledge around professionally meaningful problems and making reasoning open to evidence, dialogue, and revision. The five-phase cycle proposed in this paper links mathematical investigation with pedagogical interpretation: future teachers encounter a problem, formulate research questions, investigate, defend and revise claims, and translate the result into teachable action.

This approach extends Yunusova's emphasis on active mathematics learning, structured cognitive activity, conceptual construction, educational projects, and feedback-oriented assessment. For implementation, teacher educators should begin with a small number of carefully bounded research tasks, make success criteria explicit, and evaluate both the mathematical product and the learning process. When these conditions are met, future

teachers do not merely learn solutions; they learn how to inquire, justify, notice, and design—capacities that can shape the quality of their later classroom practice.

References:

1. Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives. Longman.

2. OECD. (2023). PISA 2022 assessment and analytical framework. OECD Publishing. https://doi.org/10.1787/dfe0bf9c-en

3. Yunusova, G. A. (2022a). Methods of effective use of some frames, methods in mastering mathematical concepts in practical lessons from mathematics. Asian Journal of Research in Social Sciences and Humanities, 12(4), 412–415. https://doi.org/10.5958/2249-7315.2022.00207.6

4. Yunusova, G. A. (2022b). Educational projects as a means of a comprehensive assessment of the methodological training of future teachers. Science and Innovation, 1(8), 2448–2452.

5. Yunusova, G. A. (2023a). Methods that develop the didactic structure of students' cognitive activity in three stages of a math lesson. International Journal of Pedagogics, 3(5), 108–112. https://doi.org/10.37547/ijp/volume03issue05-22

6. Yunusova, G. A. (2023b). The test as a qualimetric tool to assess the quality of students' knowledge. Educational Research in Universal Sciences, 2(1 Special), 112–116. https://erus.uz/index.php/er/article/view/1767

7. Yunusova, G. A. (2023c). Methods of the modular-rating system of teaching and control as a strategy for improving the monitoring of the learning process of students. Educational Research in Universal Sciences, 2(2), 264–268. https://erus.uz/index.php/er/article/view/1724

8. Yunusova, G. A. (2024). Improving the methodology of passing practical classes in math on the basis of an active approach. Open Herald: Periodical of Methodical Research, 2(3), 65–67. https://academiaone.org/index.php/6/article/download/651/539/1190

9. Yunusova, G. A. (2025). Methodology of fully mastering the basics of math analysis. Web of Teachers: Inderscience Research, 3(3), 212–215. https://webofjournals.com/index.php/1/article/view/3640

10. Liu, Y., & Pásztor, A. (2022). Effects of problem-based learning instructional intervention on critical thinking in higher education: A meta-analysis. Thinking Skills and Creativity, 45, 101069. https://doi.org/10.1016/j.tsc.2022.101069

11. Bosica, J., Pyper, J. S., & MacGregor, S. (2021). Incorporating problem-based learning in a secondary school mathematics preservice teacher education course. Teaching and Teacher Education, 102, 103335. https://doi.org/10.1016/j.tate.2021.103335

12. Martin, D. A. (2022). The impact of problem-based learning on pre-service teachers' mathematics pedagogical content knowledge. Australian Journal of Teacher Education, 47(4), 55–74. https://doi.org/10.14221/ajte.2022v47n4.4

13. Zhang, L., Stylianides, G. J., & Stylianides, A. J. (2024). Enhancing mathematical problem posing competence: A meta-analysis of intervention studies. International Journal of STEM Education, 11, 48. https://doi.org/10.1186/s40594-024-00507-1

IMPACT OF FINANCIAL EDUCATION ON WOMEN ENTREPRENEURSHIP AND BUSINESS GROWTH

ODINAYEVA SITORA
Teacher at Kimyo International university in Tashkent
sitora.alisherovna07@gmail.com

Abstract

This paper examines the conditions under which financial education translates into business growth among women entrepreneurs. Drawing on randomized evaluations, meta-analyses and official statistics, it shows that financial education reliably raises financial knowledge, by about 0.2 standard deviations, but changes financial behavior and firm outcomes to a smaller and less consistent degree. The effect depends on content design, program intensity, participants' initial skills and the link to financing. The paper substantiates three design principles for women-focused programs in Uzbekistan: simple rule-based content, repeated sessions for lower-skilled and early-stage entrepreneurs, and integration with access to credit.

Keywords

women entrepreneurship, financial education, financial literacy, business growth, microentrepreneurs, access to finance, randomized evaluations, Uzbekistan.

Introduction. Women's entrepreneurship in Uzbekistan has expanded rapidly. According to UNDP, the country had 2.1 million women entrepreneurs in 2024, a sevenfold increase since 2020 [UNDP 2025]. Rapid entry does not automatically mean business growth: UNDP points to unpaid care responsibilities and limited access to finance as particular challenges and calls for targeted support, including access to finance and sector-specific training [UNDP 2025].

The registered firm base, however, remains small and narrow. As of 1 January 2025, 43,860 small enterprises and microfirms were headed by women, about 78% of

them in services (17,239) and trade (17,161) and only about 12% in industry (5,464); their net revenue from sales reached 47.7 trillion soums, nearly 10.1 trillion more than a year earlier [National Statistics Committee 2025]. The contrast between 2.1 million women entrepreneurs and fewer than 44,000 women-led small firms suggests that most women entrepreneurs operate as individual entrepreneurs, self-employed or informally rather than through registered firms, which makes the development of their managerial and financial skills an important route to scaling up.

A similar constraint is visible globally. The International Finance Corporation estimates the credit gap of women-owned small and medium enterprises at USD 1.4–1.7 trillion [IFC 2022]. Limited access to finance is only one side of the problem; the other is the capacity to use finance productively. Financial knowledge can be treated as an investment in human capital, and its level differs across population groups [A.Lusardi, O.Mitchell 2014]. U.S. evidence shows that women's financial literacy is markedly lower than that of the older population as a whole, and that less literate women are less likely to plan for retirement [A.Lusardi, O.Mitchell 2008].

Financial education is therefore widely promoted as a policy instrument, yet its effect on the growth of women-owned businesses is not consistently confirmed. In a randomized trial among female microentrepreneurs in Peru, business training improved business knowledge and client retention but produced little or no change in revenue, profits or employment [D.Karlan, M.Valdivia 2011]. A contradiction thus exists between the assumed and the observed effect of financial education on business growth, and it remains unclear which program designs convert knowledge into growth. The aim of this paper is to determine the conditions under which financial education promotes the business growth of women entrepreneurs and to substantiate design principles for such programs in Uzbekistan. The study is based on a comparative analysis of randomized evaluations, meta-analyses and official statistics.

First, financial education works on average, but its effects are modest. A meta-analysis of 76 randomized trials with more than 160,000 participants found positive causal effects on financial knowledge of about 0.2 standard deviations and on financial behavior of about 0.1, comparable to the effects of educational interventions in other domains and robust to publication bias [T.Kaiser et al. 2022]. An earlier meta-analysis of 126 studies reports similar magnitudes, with effect sizes of 0.26 for financial literacy and 0.09 for financial behavior [T.Kaiser, L.Menkhoff 2017]. Knowledge therefore improves more than behavior, which may limit how far training alone can move firm performance.

Second, the effects are heterogeneous. Financial education is less effective for low-income clients and in low- and lower-middle-income economies; specific behaviors, such as the handling of debt, are harder to change; and mandatory programs tentatively appear less effective [T.Kaiser, L.Menkhoff 2017]. The same review concludes that success depends crucially on program intensity and on offering education at a teachable moment, that is, when it coincides with a relevant financial decision.

Third, content design matters. In a randomized evaluation with a bank in the Dominican Republic, simplified rule-of-thumb training that taught basic financial heuristics significantly improved microentrepreneurs' financial practices, reporting quality and revenues, and for lower-skilled participants its effect was significantly larger than that of standard accounting training [A.Drexler, G.Fischer, A.Schoar 2014]. Simplification is thus a way of making training usable for entrepreneurs with little prior preparation.

Fourth, knowledge does not become growth automatically. In Peru, 22 training sessions delivered within group lending to a sample of 4,591 mostly female clients improved business knowledge and client retention, but revenue, profits and employment did not change appreciably [D.Karlan, M.Valdivia 2011]. In Bosnia and Herzegovina, a

business and financial literacy course for entrepreneurs aged 18–30 did not affect business survival but improved the practices, investments and loan terms of surviving businesses, and female-run businesses showed some improvement in performance and sales [M.Bruhn, B.Zia 2013].

Fifth, the evidence supports three design principles for Uzbekistan. (a) Content should be simple and rule-based, focusing on a few routines rather than on formal accounting. (b) Programs should be repeated and targeted at lower-skilled and early-stage women entrepreneurs, scheduled around a financing or registration decision and organized so that they can be combined with unpaid care responsibilities, which UNDP identifies as a particular challenge [UNDP 2025]. (c) Training should be linked to bank credit and advisory support, since improved loan terms were among the firm-level gains in Bosnia and Herzegovina [M.Bruhn, B.Zia 2013] and the credit gap of women-owned enterprises remains large [IFC 2022].

These conclusions rest on evidence from other countries, and effects found in the Dominican Republic, Peru and Bosnia and Herzegovina cannot be transferred to Uzbekistan automatically. A randomized pilot measuring revenue, employment and access to credit would test them locally.

Conclusion

In conclusion, we believe that financial education is a useful but not self-sufficient instrument for the business growth of women entrepreneurs. It reliably raises financial knowledge, by about 0.2 standard deviations on average, yet its effect on behavior (about 0.1) and on revenue, profits and employment is smaller and depends on content, intensity, participants' initial skills and the timing of delivery.

The aim of the study has thus been achieved at the level of conditions and design principles: simple rule-based content, repeated sessions for lower-skilled and early-stage entrepreneurs, and a direct link to credit. Because these findings come from other

countries, the next step is a randomized pilot among women entrepreneurs in Uzbekistan that measures revenue, employment and access to finance.

REFERENCES:

1. Bruhn, M., & Zia, B. (2013). Stimulating managerial capital in emerging markets: The impact of business training for young entrepreneurs. Journal of Development Effectiveness, 5(2), 232–266.
2. Drexler, A., Fischer, G., & Schoar, A. (2014). Keeping it simple: Financial literacy and rules of thumb. American Economic Journal: Applied Economics, 6(2), 1–31.
3. International Finance Corporation. (2022). Closing the gender finance gap through the use of blended finance. Washington, DC: IFC.
4. Kaiser, T., Lusardi, A., Menkhoff, L., & Urban, C. (2022). Financial education affects financial knowledge and downstream behaviors. Journal of Financial Economics, 145(2), 255–272.
5. Kaiser, T., & Menkhoff, L. (2017). Does financial education impact financial literacy and financial behavior, and if so, when? The World Bank Economic Review, 31(3), 611–630.
6. Karlan, D., & Valdivia, M. (2011). Teaching entrepreneurship: Impact of business training on microfinance clients and institutions. The Review of Economics and Statistics, 93(2), 510–527.
7. Lusardi, A., & Mitchell, O. S. (2008). Planning and financial literacy: How do women fare? American Economic Review, 98(2), 413–417.
8. Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. Journal of Economic Literature, 52(1), 5–44.
9. National Statistics Committee of the Republic of Uzbekistan. (2025). Small enterprises and microfirms led by women (as of January 1, 2025) [Press release]. Tashkent. https://stat.uz/en/press-center/news-of-committee/63390-tadbirkor-ajollar-k-pro-ajsi-so-ada-faoliyat-olib-bormo-da-4
10. United Nations Development Programme. (2025). Women's entrepreneurship in Uzbekistan: Assessment and recommendations. Tashkent: UNDP. https://www.undp.org/uzbekistan/publications/womens-entrepreneurship-uzbekistan-assessment-and-recommendations

TECHNOLOGICAL AND INSTITUTIONAL BARRIERS TO INFORMATION RETRIEVAL

Sharipova Guzal Usmanbekovna

Doctor of Philosophy (PhD) in Historical Sciences, Department of History and Islamic Source Studies – IRCICA, International Islamic Academy of Uzbekistan

g.sharipova@iiau.uz

Abstract

This article systematizes the key technological, linguistic, and institutional barriers that reduce the completeness and accuracy of data retrieval across global computer networks. It examines the fundamental reasons for the limited search coverage of the World Wide Web, whose actual volume accessible to an individual system does not exceed 30%, and describes in detail the phenomenon of "Deep Web" resources being inaccessible to automatic indexing. The article explores the specific linguistic and communicative difficulties associated with homonymy, synonymy, and the prevalence of short, nonspecific user queries that do not employ information retrieval language operators. Institutional and algorithmic distortions in search results caused by search engine optimization techniques, commercial spam, personalization algorithms, and regulatory manipulation are analyzed. Particular attention is given to the systematic rewriting of timestamps and the removal of outdated pages during index database updates, which leads to the erasure of the historical traces of web documents.

Keywords

Information retrieval, search engines, Deep Web, search query, ranking operators, search spam, erasure of historical traces.

ТЕХНОЛОГИЧЕСКИЕ И ИНСТИТУЦИОНАЛЬНЫЕ БАРЬЕРЫ ИНФОРМАЦИОННОГО ПОИСКА

Шарипова Гузал Усманбековна - доктор философии (PhD) по историческим

наукам кафедры «История и источниковедение ислама» – «IRCICA»,
Международной исламской академии Узбекистана

Аннотация. В статье систематизированы ключевые технологические, лингвистические и институциональные барьеры, снижающие полноту и точность извлечения данных в глобальных вычислительных сетях. Рассмотрены фундаментальные причины ограниченности поискового охвата Всемирной Паутины, реальный объем которого для отдельной системы не превышает 30%, и подробно описан феномен недоступности ресурсов “Deep Web” (далее “глубокого веба”, прим автора) для автоматической индексации. Раскрыта специфика лингвистических и коммуникативных трудностей, проявляющихся в омонимии, синонимии и преобладании коротких неспецифичных пользовательских предписаний без использования операторов информационно-поисковых языков. Проанализированы институционально-алгоритмические искажения поисковой выдачи под воздействием методов поисковой оптимизации, коммерческого спама, алгоритмов персонализации и регуляторных манипуляций. Отдельно освещена проблема систематической перезаписи временных меток и удаления устаревших страниц в процессе обновления индексных баз, приводящих к стиранию исторического следа сетевых документов.

Ключевые слова. Информационный поиск, поисковые системы, глубокий веб, поисковый запрос, операторы ранжирования, поисковый спам, стирание исторического следа.

Информационный поиск в цифровых сетевых средах выступает базовым механизмом удовлетворения информационных потребностей пользователей, однако реализация этого процесса сталкивается с рядом существенных системных ограничений. Поисковая система представляет собой информационно-поисковое средство, функционирующее в качестве посредника между пользователем и

хранилищами данных. Эффективность извлечения сведений снижается под воздействием комплекса технологических, лингвистических, структурных и институциональных факторов. Полнота охвата ресурсов Всемирной Паутины даже наиболее мощными отдельными поисковыми машинами не превышает 30%, вследствие чего результаты поиска практически всегда оказываются одновременно избыточными и неполными. Цель данной работы заключается в систематизации и научном анализе основных технологических и институциональных барьеров, препятствующих полноте, точности и исторической достоверности информационного поиска на основе проанализированного источника. Задачи исследования включают раскрытие факторов недоступности ресурсов “глубокого веба”, анализ лингвистических и пользовательских трудностей обработки запросов, а также определение институционально-алгоритмических искажений выдачи и проблемы стирания исторического следа сетевых документов.

Фундаментальный технологический барьер информационного поиска заключается в существовании “невидимого” или “глубокого” веба, объемы которого многократно превосходят индексируемую часть глобальной сети. Данный сегмент включает в себя базы данных, библиотечные каталоги, цифровые книги, научные журналы, патенты, отчеты и государственные архивы. Указанные ресурсы остаются недоступными для автоматического сканирования и индексации стандартными программами-пауками и краулерами.

Невозможность охвата ресурсов “глубокого веба” определяется наличием авторизованного доступа к системам, закрытием отдельных разделов сайта в файлах robots.txt, а также применением экзотических и нестандартных форматов файлов, таких как djvu, doc, swf, архивов и облачных хранилищ. Дополнительным препятствием выступает функционирование веб-ресурсов исключительно в

режиме просмотра без публикации прямых гиперссылок на документы. Полноту поиска ограничивает также внутренняя изменчивость сетевой инфраструктуры, при которой веб-страницы и целые сайты со временем меняют адреса или полностью исчезают с серверов. Кроме того, доступ к национальным и зарубежным базам данных регулярно ограничивается в результате сетевых блокировок по IP-адресам.

Качество информационного поиска снижается вследствие возникновения информационного шума и проявления многовариантности естественного языка. Явления омонимии, синонимии и морфологические особенности слов приводят к выдаче релевантных по форме, но не связанных по смыслу материалов, либо к пропуску целевых документов. Указанные лингвистические трудности усугубляются отсутствием у большинства пользователей навыков формулирования запросов на специализированных информационно-поисковых языках.

Пользовательские предписания в большинстве случаев представляют собой слишком короткие и неспецифичные наборы ключевых слов. Средняя длина запроса составляет около трех терминов, при этом запросы на естественном языке используются крайне редко. Применение специализированных поисковых операторов как, Булевой логики AND, OR, NOT, операторов близости NEAR, FOLLOWED BY, ADJ, W/n, PRE/n, фразового поиска в кавычках, а также ограничений по полям intitle:, inurl:, intext:, filetype: и mime:, составляет лишь около 10% от общего объема веб-запросов. К техническим проблемам лингвистического характера относятся также несогласованность кодировок символов и трудноизвлекаемость информации из мультимедийных файлов.

На формирование результатов поиска оказывают прямое влияние действия сторонних субъектов и алгоритмические механизмы коммерческих поисковых

машин. Владельцы веб-ресурсов активно используют методы поисковой оптимизации и поискового спама, манипулируя метатегами, заглавиями, ключевыми словами и ссылочной массой для искусственного завышения позиций своих сайтов в выдаче.

Алгоритмы коммерческого ранжирования применяют непрозрачные критерии отбора документов. Результаты поиска по идентичным текстовым предписаниям варьируются под воздействием параметров персонализации, зависящих от IP-адреса пользователя, истории его предыдущих обращений и текущего режима авторизации в системе. Поисковые сервисы также внедряют автоподстановки и специальные элементы выдачи, которые отражают коммерческие интересы, геопространственные диспропорции или становятся объектом алгоритмически и вручную регулируемых манипуляций.

В специализированных академических поисковых системах, таких как Google Scholar, также присутствуют институционально-технические ограничения. Система не проектировалась как профессиональная библиометрическая база данных и лишена контроля авторитетности заглавий и авторов. В процессе работы выявляются ошибки автоматического парсинга, отсутствует открытый легальный API для автоматической выгрузки больших массивов метаданных, действует ограничение отображения выдачи первыми 1000 результатов, а также сохраняется уязвимость к проявлениям контентного и цитатного спама.

Значимый институционально-технологический барьер возникает при попытке использования коммерческих поисковых систем в исторических исследованиях. Операционная стабильность поисковых машин достигается за счет регулярного обновления их индексных баз данных. В ходе этого процесса происходят систематический перенос временных меток веб-документов из

прошлого в настоящее или недавнее прошлое на основе даты их последнего обновления, а также бесследное удаление устаревших страниц.

Постоянная актуализация индексов приводит к стиранию исторического следа развития информационных сетей и разрушению смысловых структур семантических сетей. Коммерческие поисковые системы непрерывно конструируют “конкурирующее настоящее”, вследствие чего они оказываются непригодными инструментами для ретроспективного анализа структуры информации в конкретный исторический период. Преодоление данного барьера возможно только путем обращения к специализированным архивным веб-ресурсам, сохраняющим исходную дату публикации, или путем создания специализированных инструментов архивирования.

В заключение следует отметить что, проведенный анализ показывает, что технологические и институциональные барьеры информационного поиска обусловлены как фундаментальными свойствами Всемирной Паутины, так и спецификой функционирования коммерческих поисковых машин. Недоступность “глубокого веба”, изменчивость адресов ресурсов и сетевые блокировки создают структурные препятствия полноте охвата. Лингвистическая многовариантность и отсутствие у пользователей навыков применения языков поисковых предписаний снижают точность и полноту извлечения данных. Институциональные искажения, вызванные поисковым спамом, непрозрачностью алгоритмов ранжирования, персонализацией и систематической перезаписью временных меток документов, приводят к трансформации поисковой выдачи и стиранию исторического следа. Преодоление проанализированных барьеров требует использования специализированных библиографических систем, корректного формулирования запросов с применением поисковых операторов и привлечения профильных цифровых архивов.

СПИСОК ИСПОЛЬЗОВАННЫХ ИСТОЧНИКОВ

1.Гримуто О. А. Эффективное использование поисковых систем Google и Google академия в учебной и научной деятельности //Физика конденсированного состояния: материалы XXXI междунар. науч.-практ. конф. аспир., магистр. и студ.(Гродно, 13-14 апр. 2023 г.)/Учреждение образования" Гродненский государственный университет имени Янки Купалы". – 2023. – С. 366.

2.Калмыков М. А., Медникова О. В. История развития поисковых систем и алгоритмы их работы //Научные известия. – 2022. – №. 28. – С. 33-35.

3. Шарипова Г. Цифровая история. Учебное пособие / под ред.— Ташкент: GRAND KONDOR PRINT, 2026.

4.Croft W. B. et al. Search engines: Information retrieval in practice. – Reading : Addison-Wesley, 2010. – Т. 520. – С. 131-141.

5.Haider J., Sundin O. Invisible search and online search engines: The ubiquity of search in everyday life. – Taylor & Francis, 2019. – С. 160.

6.Orduna-Malea E., Martín-Martín A., Delgado-Lopez-Cozar E. Google Scholar as a source for scholarly evaluation: A bibliographic review of database errors. – 2017.

MANAGEMENT PRINCIPLES OF GENERAL SECONDARY EDUCATION SCHOOL PRINCIPALS

Shomurodova Mamuraxon Abdulhamid qizi
Principal of School No. 9, Uchqo‘rg‘on District, Namangan Region

Abstract

This thesis highlights the fundamental principles applied in the management activities of general secondary education school principals and their importance in organizing school operations. The aim is to explain the principles of goal orientation, legality, transparency, collaboration, accountability, and evidence-based decision-making, as well as to identify the conditions for applying them in school management. The principal’s role is examined in relation to coordinating the educational process, supporting teachers’ professional development, using available resources efficiently, and creating a favorable learning environment for students. The thesis focuses on developing management decisions in accordance with the school’s specific needs and development goals, distributing responsibilities and authority, involving the teaching staff in decision-making discussions, and maintaining regular communication with parents. It also analyzes how information on learning outcomes, attendance, teachers’ feedback, and existing conditions can be used to support management decisions. An approach is proposed in which monitoring results are used not merely as a means of control but also to identify problems and improve school operations. The practical significance of management principles is linked to their consistent application in daily activities, monitoring the implementation of decisions, and making necessary adjustments based on the results. The thesis is theoretical and methodological in nature and does not present new empirical findings. Studying the effectiveness of the proposed approaches in specific school settings is identified as a direction for future research.

Keywords

General secondary education, school principal, management principles, pedagogical leadership, strategic planning, collaboration, accountability, evidence-based decision-making, monitoring.

UMUMIY O‘RTA TA’LIM MAKTAB DIREKTORLARINING BOSHQARUV TAMOYILLARI

Shomurodova Mamuraxon Abdulhamid qizi

Namangan viloyati Uchqo’rg’on tuman 9- maktab direktori

Annotatsiya

Ushbu tezisda umumiy o‘rta ta’lim maktab direktorlarining boshqaruv faoliyatida qo‘llanadigan asosiy tamoyillar va ularning maktab faoliyatini tashkil etishdagi ahamiyati yoritiladi. Tezisning maqsadi maqsadga yo‘naltirilganlik, qonuniylik, ochiqlik, hamkorlik, mas’uliyat va dalillarga asoslangan qaror qabul qilish tamoyillarining mazmunini ochib berish hamda ularni maktab boshqaruvida qo‘llash shartlarini aniqlashdan iborat. Direktor faoliyati ta’lim jarayonini muvofiqlashtirish, pedagoglarning kasbiy rivojlanishini qo‘llab-quvvatlash, mavjud resurslardan oqilona foydalanish va o‘quvchilar uchun qulay ta’lim muhitini yaratish bilan bog‘liq vazifalar doirasida ko‘rib chiqiladi. Tezisda boshqaruv qarorlarini maktabning aniq ehtiyojlari va rivojlanish maqsadlariga muvofiq ishlab chiqish, vazifalar hamda vakolatlarni taqsimlash, pedagogik jamoani qarorlar muhokamasiga jalb etish va ota-onalar bilan muntazam muloqot o‘rnatish masalalariga e’tibor qaratiladi. Shuningdek, o‘quv natijalari, davomat, pedagoglarning fikr-mulohazalari va mavjud sharoit haqidagi ma’lumotlardan boshqaruv qarorlarini asoslashda foydalanish imkoniyatlari tahlil qilinadi. Monitoring natijalarini faqat nazorat vositasi sifatida emas, balki muammolarni aniqlash va faoliyatni takomillashtirish uchun qo‘llash yondashuvi ilgari suriladi.

Boshqaruv tamoyillarining amaliy ahamiyati ularning kundalik faoliyatda izchil qo‘llanishi, qarorlar ijrosining kuzatilishi va natijalarga ko‘ra zarur tuzatishlar kiritilishi

bilan bog‘lanadi. Tezis nazariy-metodik xarakterga ega bo‘lib, unda yangi empirik natijalar keltirilmaydi. Bayon etilgan yondashuvlarning samaradorligini muayyan maktab sharoitida o‘rganish keyingi tadqiqot yo‘nalishi sifatida belgilanadi.

Kalit so‘zlar: umumiy o‘rta ta’lim, maktab direktori, boshqaruv tamoyillari, pedagogik yetakchilik, strategik rejalashtirish, hamkorlik, mas’uliyat, dalillarga asoslangan qaror, monitoring

Kirish. Umumiy o‘rta ta’lim maktabini boshqarish ta’lim jarayonini tashkil etish, pedagogik jamoa faoliyatini muvofiqlashtirish va o‘quvchilarning bilim olishi uchun zarur sharoitlarni yaratishga qaratilgan faoliyatdir. Maktab direktori ushbu jarayonda maqsadlarni belgilash, vazifalarni taqsimlash, mavjud imkoniyatlarni baholash va qabul qilingan qarorlarning bajarilishini kuzatish vazifalarini amalga oshiradi. Shu sababli direktorning boshqaruv tamoyillarini o‘rganish maktab faoliyatidagi qarorlar, munosabatlar va mas’uliyatning qanday tashkil etilishini tushunish uchun muhimdir.

Boshqaruv tamoyillari rahbar faoliyatiga yo‘nalish beruvchi asosiy talablar sifatida qaraladi. Ular maktabning rivojlanish maqsadlarini kundalik ishlar bilan bog‘lash, qarorlarni asoslash va jamoa a’zolari o‘rtasidagi munosabatlarni tartibga solishga xizmat qiladi. Maqsadga yo‘naltirilganlik, qonuniylik, ochiqlik, hamkorlik, mas’uliyat va dalillarga asoslangan qaror qabul qilish bir-birini to‘ldiruvchi tamoyillardir. Masalan, rivojlanish maqsadi belgilanishi uning ijrosi uchun mas’ullar, zarur resurslar va natijalarni baholash mezonlari aniqlanishini ham talab etadi.

Maktab boshqaruvida direktorning pedagogik yetakchiligi alohida o‘rin tutadi. Bu faoliyat o‘qituvchilarning kasbiy ehtiyojlarini aniqlash, tajriba almashish imkoniyatlarini yaratish, ta’lim jarayonidagi muammolarni birgalikda muhokama qilish va taklif etilgan yechimlarni kuzatishni qamrab oladi. Bunda direktorning qarorlari o‘quvchilarning ta’lim olish sharoiti va pedagoglarning faoliyatiga qanday ta’sir ko‘rsatishi hisobga olinishi lozim. Vazifalarni taqsimlash esa xodimlarning vakolati,

tajribasi va ish yuklamasiga muvofiq amalga oshirilishi kerak.

Boshqaruvdagi muhim masalalardan biri maktab faoliyati haqidagi ma’lumotlardan mazmunli foydalanishdir. O‘quv natijalari, davomat, pedagoglar va ota-onalarning fikr-mulohazalari muammolarni aniqlash uchun asos bo‘lishi mumkin. Biroq alohida ko‘rsatkich barcha sabablarni tushuntirib bera olmaydi. Masalan, o‘zlashtirishdagi qiyinchiliklarni tahlil qilishda baholar bilan birga o‘quvchining qatnashuvi, topshiriqlar mazmuni va mavjud yordam imkoniyatlarini ham ko‘rib chiqish zarur. Shuning uchun ma’lumotlarni yig‘ish boshqaruv qarorini tayyorlash, uning ijrosini kuzatish va zarur tuzatishlarni belgilash bilan bog‘lanishi kerak.

Ochiqlik va hamkorlik tamoyillari qarorlarning mazmunini tushuntirish, takliflarni tinglash va mas’uliyat chegaralarini aniqlashtirishda namoyon bo‘ladi. Pedagoglar, o‘quvchilar va ota-onalar bilan muloqot maktab ehtiyojlarini turli nuqtayi nazardan ko‘rib chiqish imkonini beradi. Bunda jamoaviy muhokama direktorning vakolati va javobgarligini aniq belgilash bilan uyg‘unlashishi lozim. Mazkur tamoyillarning ahamiyati ularning hujjatlarda qayd etilishi bilangina emas, kundalik qarorlar va amaliy munosabatlarda qo‘llanishi orqali ochiladi.

Ushbu tezisning maqsadi umumiy o‘rta ta’lim maktab direktorlarining asosiy boshqaruv tamoyillarini yoritish va ularni amaliy faoliyatda qo‘llash shartlarini aniqlashdan iborat. Shu maqsadda maktab faoliyatini rejalashtirish, vazifalar hamda vakolatlarni taqsimlash, hamkorlikni tashkil etish va natijalarni baholash masalalari ko‘rib chiqiladi. Tezis nazariy-metodik yo‘nalishda yozilgan bo‘lib, unda muayyan maktablar bo‘yicha yangi empirik ma’lumotlar yoki tamoyillarning samaradorligini tasdiqlovchi tajriba natijalari keltirilmaydi.

Asosiy qism

Umumiy o‘rta ta’lim maktab direktorining boshqaruv faoliyati maktab maqsadlarini belgilash, pedagogik jarayonni muvofiqlashtirish, resurslarni taqsimlash va natijalarni

tahlil qilishni qamrab oladi. Ushbu vazifalarni bajarishda boshqaruv tamoyillari qarorlarning izchilligini ta’minlovchi asos sifatida xizmat qiladi. Tamoyillar bir-biridan ajralgan holda qo‘llanmaydi: rejalashtirish mas’uliyatni taqsimlash bilan, hamkorlik ochiqlik bilan, monitoring esa faoliyatni takomillashtirish bilan bog‘lanishi kerak.

Maqsadga yo‘naltirilganlik tamoyili. Maktab faoliyatini rejalashtirishda erishilishi ko‘zlangan natija aniq belgilanishi zarur. “Ta’lim sifatini oshirish” kabi umumiy maqsad kundalik faoliyatni tashkil etish uchun yetarli yo‘nalish bermaydi. Uni maktab ehtiyojlariga mos vazifalarga ajratish lozim. Masalan, o‘quvchilarning matnni tushunishdagi qiyinchiliklari aniqlansa, tegishli sinflarda qo‘shimcha yordamni tashkil etish, o‘qituvchilarning metodik hamkorligini yo‘lga qo‘yish va o‘zgarishlarni kuzatish rejalashtirilishi mumkin.

Har bir vazifa bo‘yicha mas’ul, bajarish muddati, zarur resurs va natijani baholash usuli belgilanadi. Rejada tadbir o‘tkazilgani bilan uning maqsadga xizmat qilgani farqlanishi kerak. Masalan, metodik seminar tashkil etilishi bajarilgan ishni bildiradi; o‘qituvchilarning undan olgan tavsiyalarni darsda qo‘llashi esa keyingi kuzatuvni talab qiladi. Shunday yondashuv rejalashtirishni amaliy natijalar bilan bog‘laydi.

Qonuniylik va adolatlilik tamoyili. Direktor qarorlari amaldagi normativ-huquqiy hujjatlar, maktabning belgilangan tartiblari va o‘z vakolati doirasida qabul qilinishi lozim. Xodimlarga topshiriq berish, ish yuklamasini taqsimlash, rag‘batlantirish va murojaatlarni ko‘rib chiqishda mezonlarning tushunarli bo‘lishi muhimdir. Bir xil vaziyatlarga nisbatan izchil yondashuv qo‘llanishi boshqaruv qarorlarining asoslanganligini ta’minlaydi.

Adolatlilik barcha xodimlarga bir xil topshiriq berishni anglatmaydi. Vazifalarni taqsimlashda kasbiy tayyorgarlik, lavozim vazifalari, mavjud yuklama va bajarish imkoniyati hisobga olinishi kerak. Qaror sabablari tushuntirilishi, xodimning fikri tinglanishi va zarur hollarda qaror qayta ko‘rib chiqilishi uchun belgilangan tartib

mavjud bo‘lishi lozim.

Ochiqlik va hisobdorlik tamoyili. Maktabning rivojlanish maqsadlari, muhim qarorlar va ularni amalga oshirish tartibi tegishli ishtirokchilarga tushunarli yetkazilishi zarur. Ochiqlik axborotning ko‘pligi bilan emas, uning zarur, aniq va foydalanishga qulayligi bilan belgilanadi. Pedagog qaror undan qanday ishni talab qilishini, ota-ona esa o‘ziga tegishli tartib va murojaat yo‘lini bilishi kerak.

Hisobdorlik bajarilgan ishlarni sanab o‘tish bilan cheklanmaydi. Unda belgilangan vazifa qay darajada amalga oshirilgani, qanday qiyinchiliklar yuzaga kelgani va keyingi choralar ko‘rsatiladi. Shu bilan birga, ochiqlik o‘quvchilar va xodimlarning shaxsiy ma’lumotlarini oshkor qilishni anglatmaydi. Axborotning kimga va qanday hajmda berilishi uning maqsadi hamda maxfiylik talablariga muvofiq belgilanadi.

Hamkorlik va ishtirok tamoyili. Direktor maktabdagi barcha muammolarni yakka holda aniqlashi va hal qilishi qiyin. Pedagoglar dars jarayonidagi vaziyatlarni, ota-onalar oiladagi sharoitlarni, o‘quvchilar esa ta’lim muhitidagi kundalik tajribani yoritib berishi mumkin. Ularning fikrini o‘rganish qaror tayyorlashda qo‘shimcha ma’lumot beradi.

Hamkorlikni tashkil etishda muhokamaning maqsadi va doirasi aniq bo‘lishi lozim. Ishtirokchilarga faqat fikr bildirish imkonini yaratish yetarli emas; takliflar qanday ko‘rib chiqilgani va qaysi qarorga kelinishi ham tushuntirilishi kerak. Shu bilan birga, jamoaviy muhokama qaror uchun javobgarlikni noaniq qoldirmasligi zarur. Yakuniy qarorni kim qabul qilishi va ijroni kim muvofiqlashtirishi oldindan belgilanadi.

Vakolat va mas’uliyatning muvofiqligi. Vazifa yuklangan xodim uni bajarish uchun zarur vakolat, axborot va resursga ega bo‘lishi kerak. Masalan, metodik ishlarni muvofiqlashtirish topshirilgan pedagogga tegishli jadvalni kelishish, hamkasblar bilan muloqot qilish va natijalarni umumlashtirish imkoniyati yaratiladi. Aks holda, mas’uliyat belgilangan bo‘lsa-da, vazifani bajarish sharoiti yetishmasligi mumkin.

Vakolatlarni taqsimlashda kutilayotgan natija va direktor bilan kelishilishi kerak bo‘lgan

masalalar aniqlashtiriladi. Ijroni kuzatish xodimning har bir harakatini boshqarish shakliga aylanmasligi kerak. Belgilangan muddatlarda qisqa muhokama o‘tkazish, qiyinchiliklarni aniqlash va zarur yordamni ko‘rsatish vazifani bajarishga yo‘naltirilgan yondashuv hisoblanadi.

Dalillarga asoslangan qaror qabul qilish. Boshqaruv qarori maktabdagi vaziyat haqidagi tekshiriladigan ma’lumotlarga tayanishi lozim. O‘quv natijalari, davomat, dars kuzatuvlari, pedagoglar va ota-onalar fikri muammoni turli tomonlardan o‘rganishga yordam beradi. Biroq bitta ko‘rsatkich asosida barcha sabablarni belgilash yoki xodim faoliyatiga qat’iy baho berish yetarlicha asosli bo‘lmasligi mumkin.

Masalan, muayyan sinfda o‘zlashtirish pasaygan bo‘lsa, faqat yakuniy baholarni ko‘rib chiqish bilan cheklanmaslik kerak. Topshiriqlarning mazmuni, o‘quvchilarning oldingi tayyorgarligi, davomat va qo‘shimcha yordam imkoniyatlari ham o‘rganiladi. Qaror qabul qilingach, uning bajarilishi va kuzatilgan o‘zgarishlar qayd etiladi. Natija kutilganidek bo‘lmasa, sabablar qayta tahlil qilinib, yondashuvga tuzatish kiritiladi.

Pedagogik yetakchilik va kasbiy rivojlanishni qo‘llab-quvvatlash. Direktorning pedagogik yetakchiligi o‘qitish jarayonidagi ehtiyojlarni tushunish va pedagoglarga kasbiy yordam ko‘rsatishda namoyon bo‘ladi. Dars kuzatuvi aniq maqsadga ega bo‘lishi, undan keyingi suhbat esa kuzatilgan holatlar va rivojlanish imkoniyatlariga asoslanishi kerak. Umumiy baholovchi fikrlar o‘rniga qaysi usul qo‘llangani, o‘quvchilar qanday qatnashgani va nimani o‘zgartirish mumkinligi muhokama qilinadi.

Kasbiy rivojlanish shakllari aniqlangan ehtiyojga mos tanlanadi. Hamkasblar bilan darsni rejalashtirish, tajriba almashish, murabbiylik va amaliy mashg‘ulotlar shunday shakllar bo‘lishi mumkin. Ularning natijasini qatnashganlar soni bilan birga, olingan tavsiyalarning amaliyotda qo‘llanishi orqali ham kuzatish maqsadga muvofiq.

Resurslardan oqilona foydalanish va muntazam takomillashtirish. Maktabning vaqt, jihoz, mablag‘ va xodimlar imkoniyati cheklanganligi sababli ustuvor

vazifalarni ajratish zarur. Resurslarni taqsimlash aniqlangan ehtiyojlar va kutilayotgan foyda bilan bog‘lanadi. Ortiqcha yig‘ilishlar, takroriy ma’lumot so‘rash va maqsadi noaniq topshiriqlar pedagoglarning asosiy faoliyatiga ajratilgan vaqtni kamaytirishi mumkin. Shu bois direktor tashkiliy jarayonlarning zarurligini ham muntazam ko‘rib chiqishi lozim. Boshqaruv tamoyillarini amaliyotga tatbiq etish maqsadni belgilash, qarorni asoslash, mas’uliyatni taqsimlash, ijroni kuzatish va natijaga ko‘ra tuzatish kiritish orqali amalga oshiriladi. Mazkur yondashuvlar nazariy-metodik takliflar bo‘lib, ularning samaradorligini muayyan maktab sharoitida oldindan belgilangan mezonlar asosida o‘rganish zarur.

Xulosa

Umumiy o‘rta ta’lim maktab direktorining boshqaruv faoliyati maqsadga yo‘naltirilganlik, qonuniylik, adolatlilik, ochiqlik, hamkorlik va mas’uliyat tamoyillarining o‘zaro uyg‘unligiga asoslanishi lozim. Ushbu tamoyillar maktab ehtiyojlarini aniqlash, qarorlarni asoslash, vazifalarni taqsimlash va ularning bajarilishini kuzatishda amaliy yo‘nalish beradi. Ularning ahamiyati kundalik faoliyatda qanday qo‘llanishi va aniqlangan muammolarga qanday yechim taklif etilishi orqali namoyon bo‘ladi. Maktabni rivojlantirish maqsadlari aniq vazifalar, bajarish muddatlari, mas’ullar va baholash mezonlari bilan bog‘lanishi zarur. Vazifa yuklangan xodimga uni bajarish uchun tegishli vakolat, axborot va resurs berilishi kerak. Qarorlar mazmunini tushuntirish, pedagoglarning takliflarini tinglash va ota-onalar bilan muntazam muloqot qilish boshqaruv jarayonidagi hamkorlikni tashkil etishga xizmat qiladi. Bunda ishtirokchilarning fikrini hisobga olish yakuniy qaror va uning ijrosi uchun javobgarlikni aniq belgilash bilan uyg‘unlashishi lozim.

Direktorning pedagogik yetakchiligi o‘qituvchilarning kasbiy ehtiyojlarini aniqlash, metodik yordamni tashkil etish va tajriba almashishni qo‘llab-quvvatlashda muhim o‘rin tutadi. Dars kuzatuvlari va monitoring natijalaridan foydalanishda aniq

holatlar, ularning yuzaga kelish sharoiti hamda takomillashtirish imkoniyatlari muhokama qilinishi kerak. O‘quv natijalari, davomat va fikr-mulohazalarni birgalikda tahlil qilish muammoni kengroq tushunishga yordam beradi; alohida ko‘rsatkich esa barcha sabablarni izohlash uchun yetarli bo‘lmasligi mumkin.

Amaliy jihatdan direktor faoliyatida uch yo‘nalishga e’tibor qaratish maqsadga muvofiq: maktab ehtiyojlariga mos ustuvor vazifalarni belgilash, vakolat va mas’uliyatni muvofiqlashtirish hamda qarorlar natijasiga ko‘ra zarur tuzatishlar kiritish. Tezisda bayon etilgan yondashuvlar nazariy-metodik xarakterga ega. Ularning samaradorligini aniqlash uchun muayyan maktablarda boshqaruv amaliyotini kuzatish, pedagoglar va boshqa ishtirokchilarning fikrini o‘rganish hamda belgilangan vazifalarning bajarilishini oldindan tanlangan mezonlar asosida baholash zarur.

Foydalanilgan adabiyotlar

1. O‘zbekiston Respublikasining **“Ta’lim to‘g‘risida”gi Qonuni**. — 2020-yil 23-sentabr, O‘RQ-637-son. — Qonunchilik ma’lumotlari milliy bazasi: Lex.uz. lex.uz

2. Pont B., Nusche D., Moorman H. **Improving School Leadership. Volume 1: Policy and Practice** [Maktab rahbarligini takomillashtirish. 1-jild: siyosat va amaliyot]. — Paris: OECD Publishing, 2008. — DOI: 10.1787/9789264044715-en. OECD

3. Grissom J. A., Egalite A. J., Lindsay C. A. **How Principals Affect Students and Schools: A Systematic Synthesis of Two Decades of Research** [Direktorlarning o‘quvchilar va maktablarga ta’siri: yigirma yillik tadqiqotlarning tizimli umumlashtirilishi]. — The Wallace Foundation, 2021. — DOI: 10.59656/EL-SB1065.001. Wallace Foundation

4. UNESCO. **Global Education Monitoring Report 2024/5: Leadership in Education—Lead for Learning** [Ta’lim bo‘yicha global monitoring hisoboti 2024/5: ta’limdagi yetakchilik — o‘rganishga yo‘naltirilgan rahbarlik]. — Paris: UNESCO, 2024. Global Education Monitoring Report

PEDAGOGICAL OPPORTUNITIES FOR DEVELOPING STUDENTS' CIVIC RESPONSIBILITY BASED ON NATIONAL VALUES IN LEGAL EDUCATION

Tursunboyeva Xushnozbegim Dilmurod qizi
Law and Character Education Teacher, General Secondary School No. 10,
Yangiyo'l City, Tashkent Region
xushnozbegim200220@gmail.com

Abstract

This thesis theoretically explores the pedagogical opportunities for developing students' civic responsibility based on national values in the process of legal education. The aim of the study is to identify methodological approaches to integrating values such as respect for human dignity, justice, honesty, solidarity, and responsibility toward the community and country into the content of legal education. Civic responsibility is interpreted as a student's awareness of their rights and duties, consideration of the rights of others, evaluation of the consequences of their decisions, and readiness to participate consciously in social life. The thesis proposes an approach based on theoretical analysis, comparison, and pedagogical generalization. It examines the potential of legal case analysis, discussions, role-playing activities, collaborative assignments, and social projects for developing civic responsibility. Alongside explaining the meaning of national values, these activities emphasize their connection with individual rights, equality, and the rule of law. Cooperation among families, schools, and local communities is described as a factor that creates pedagogical conditions for students to apply their legal knowledge in everyday interactions. To assess civic responsibility, the thesis proposes observable indicators such as the ability to suggest well-reasoned solutions to situations, explain opinions with evidence, fulfill agreed responsibilities, and follow the rules of cooperation. It emphasizes that realizing the educational potential

of legal education based on national values depends on teachers' methodological preparedness, fair relationships within the school, and students' active participation. The thesis is theoretical and methodological in nature, and evaluating the effectiveness of the proposed approaches is identified as a task for future empirical research.

Keywords

Legal education, national values, civic responsibility, legal culture, pedagogical opportunities, social participation, case-based assignments, family–school–community cooperation.

HUQUQIY TA'LIMDA MILLIY QADRIYATLAR ASOSIDA O'QUVCHILARNING FUQAROLIK MAS'ULIYATINI RIVOJLANTIRISHNING PEDAGOGIK IMKONIYATLARI

Tursunboyeva Xushnozbegim Dilmurod qizi - Toshkent viloyati Yangiyo'l shahar 10 - umumiy o'rta ta'lim maktabi huquq va tarbiya o'qituvchisi

Annotatsiya

Ushbu tezisda huquqiy ta'lim jarayonida milliy qadriyatlar asosida o'quvchilarning fuqarolik mas'uliyatini rivojlantirishning pedagogik imkoniyatlari nazariy jihatdan yoritiladi. Tadqiqotning maqsadi inson qadriga hurmat, adolat, halollik, hamjihatlik va el-yurt oldidagi mas'uliyat kabi qadriyatlarni huquqiy ta'lim mazmuni bilan uyg'unlashtirishning metodik yo'llarini belgilashdan iborat. Fuqarolik mas'uliyati o'quvchining o'z huquq va majburiyatlarini anglashi, boshqalarning huquqlarini hisobga olishi, qarorlarining oqibatlarini baholashi hamda ijtimoiy hayotda ongli ishtirok etishga tayyorligi sifatida talqin qilinadi. Tezisda nazariy tahlil, qiyoslash va pedagogik umumlashtirishga asoslangan yondashuv taklif etiladi. Huquqiy vaziyatlarni tahlil qilish, munozara, rolli mashg'ulotlar, hamkorlikdagi topshiriqlar va ijtimoiy loyihalarning fuqarolik mas'uliyatini rivojlantirishdagi imkoniyatlari ko'rib chiqiladi. Ushbu faoliyatlarda milliy qadriyatlarning mazmunini tushuntirish bilan birga, ularni

shaxs huquqlari, tenglik va qonuniylik mezonlari bilan bog‘lashga e’tibor qaratiladi. Oila–maktab–mahalla hamkorligi o‘quvchilarning huquqiy bilimlarini kundalik munosabatlarda qo‘llashi uchun pedagogik sharoit yaratadigan omil sifatida tavsiflanadi. Fuqarolik mas’uliyatini baholashda o‘quvchining vaziyatga asosli yechim taklif qilishi, o‘z fikrini dalillar bilan tushuntirishi, kelishilgan vazifalarni bajarishi va hamkorlik qoidalariga rioya qilishi kabi kuzatiladigan ko‘rsatkichlar taklif etiladi. Milliy qadriyatlarga tayangan huquqiy ta’limning tarbiyaviy imkoniyatlarini amalga oshirish o‘qituvchining metodik tayyorgarligi, maktabdagi adolatli munosabatlar va o‘quvchilarning faol ishtirokiga bog‘liq ekani ta’kidlanadi. Tezis nazariy-metodik xarakterga ega bo‘lib, taklif etilgan yondashuvlarning samaradorligini aniqlash keyingi empirik tadqiqotlar vazifasi sifatida belgilanadi.

Kalit so‘zlar: huquqiy ta’lim, milliy qadriyatlar, fuqarolik mas’uliyati, huquqiy madaniyat, pedagogik imkoniyatlar, ijtimoiy ishtirok, vaziyatli topshiriqlar, oila–maktab–mahalla hamkorligi.

Kirish. Huquqiy ta’lim o‘quvchilarning huquq va majburiyatlar haqidagi bilimlarini shakllantirish, ijtimoiy munosabatlarni anglash va kundalik hayotda mas’uliyatli qaror qabul qilish ko‘nikmalarini rivojlantirishga yo‘naltiriladi. Uning mazmuni huquqiy tushunchalarni o‘rgatish bilan cheklanmaydi: o‘quvchi ushbu bilimlarni turli vaziyatlarda qo‘llash, boshqalarning huquqlarini hisobga olish va o‘z harakatining oqibatlarini baholashni ham o‘rganishi zarur. Shu jihatdan fuqarolik mas’uliyatini rivojlantirish huquqiy ta’limning muhim pedagogik vazifalaridan biridir.

O‘zbekiston Respublikasining “Ta’lim to‘g‘risida”gi Qonuni ta’lim-tarbiya jarayonining huquqiy asosini tashkil etadi [1]. Jamiyatda huquqiy ong va huquqiy madaniyatni yuksaltirishga oid konsepsiyada esa huquqiy bilimlarni kundalik hayotda qo‘llay olishga e’tibor qaratiladi [2]. Ushbu yo‘nalish huquqiy ta’limda o‘quvchining bilimini amaliy mulohaza va faoliyat bilan bog‘lash zaruratini ko‘rsatadi. Milliy qadriyatlarning

tarbiyaviy imkoniyatlarini mazkur jarayonga kiritish esa huquqiy tushunchalarni o‘quvchiga tanish ijtimoiy tajriba orqali tushuntirishga yordam berishi mumkin.

Inson qadriga hurmat, halollik, adolat, hamjihatlik, o‘zaro yordam va el-yurt oldidagi burch kabi qadriyatlar fuqarolik mas’uliyatining mazmunini ochishda muhim o‘rin tutadi. Ularni ta’lim jarayonida yoritish umumiy ta’riflarni bayon qilish bilan chegaralanmasligi lozim. Masalan, halollik bajarilgan ish haqida haqqoniy ma’lumot berish, mas’uliyat kelishilgan vazifani bajarish, hamjihatlik esa umumiy faoliyatda boshqa ishtirokchilarning imkoniyatlarini hisobga olish orqali tushuntirilishi mumkin. Bunday misollar qadriyatlarning kundalik hayotdagi ifodasini anglashga sharoit yaratadi.

Mavzuning pedagogik muammosi huquqiy bilim bilan mas’uliyatli faoliyat o‘rtasidagi bog‘liqlikni ta’minlashdan iborat. O‘quvchining “huquq”, “burch” yoki “adolat” tushunchalarini to‘g‘ri izohlashi uning nizoli vaziyatda asosli qaror qabul qilishini avtomatik ravishda anglatmaydi. Buning uchun muammoni aniqlash, tomonlarning huquq va majburiyatlarini farqlash, yechimlarni taqqoslash hamda tanlovni dalillar bilan tushuntirishga yo‘naltirilgan topshiriqlar zarur. Shu sababli milliy qadriyatlarni huquqiy ta’limga uyg‘unlashtirishning mazmuniy va metodik yo‘llarini belgilash dolzarbdir.

Ushbu yondashuvda milliy qadriyatlar va huquqiy me’yorlar o‘rtasidagi farq saqlanishi kerak. Axloqiy tavsiya har doim huquqiy majburiyat hisoblanmaydi, urf-odat yoki jamoa fikri esa shaxs huquqlarini cheklash uchun asos bo‘la olmaydi. Fuqarolik mas’uliyati faqat itoatkorlik orqali emas, o‘z fikrini odob bilan bildirish, boshqalarning nuqtayi nazarini tinglash va qarorini asoslash orqali ham namoyon bo‘ladi. Demak, ta’lim jarayoni o‘quvchining ongli ishtirokini qo‘llab-quvvatlashi lozim.

Tezisning maqsadi huquqiy ta’limda milliy qadriyatlar asosida o‘quvchilarning fuqarolik mas’uliyatini rivojlantirishning pedagogik imkoniyatlarini nazariy jihatdan yoritishdan iborat. Ushbu maqsad doirasida milliy qadriyatlar va fuqarolik

mas’uliyatining mazmuniy aloqalarini aniqlash, vaziyatli topshiriqlar, munozara va hamkorlikdagi faoliyatning imkoniyatlarini tavsiflash hamda baholash mezonlarini belgilash vazifalari qo‘yiladi. Ish nazariy-metodik xarakterga ega bo‘lib, taklif etiladigan yondashuvlarning amaliy samaradorligi keyingi tajriba-sinov tadqiqotlarida tekshirilishi zarur.

Asosiy qism

Huquqiy ta’limda milliy qadriyatlar asosida o‘quvchilarning fuqarolik mas’uliyatini rivojlantirish huquqiy bilim, axloqiy mulohaza va amaliy faoliyatning uyg‘unligini talab etadi. O‘quvchi o‘z huquq va majburiyatlarini bilishi bilan birga, boshqalarning manfaatlarini hisobga olishi, qarorining oqibatlarini tushuntirishi hamda kelishilgan vazifalarni bajarishi zarur. Milliy qadriyatlar ushbu ko‘nikmalarni o‘quvchiga tanish hayotiy misollar orqali yoritish uchun mazmuniy asos bo‘lib xizmat qilishi mumkin.

Fuqarolik mas’uliyatining pedagogik mazmuni

Fuqarolik mas’uliyati shaxsning jamiyatdagi o‘rnini anglashi, huquq va majburiyatlariga ongli munosabatda bo‘lishi hamda umumiy manfaatga daxldor faoliyatda asosli ishtirok etishini qamrab oladi. Maktab sharoitida bu sifat o‘quvchining sinf qoidalarini tushunishi, umumiy mulkni asrashi, hamkorlikdagi vazifalarni bajarishi va nizoli vaziyatlarni muhokama qilishida namoyon bo‘lishi mumkin. Biroq mas’uliyatni faqat tartibga bo‘ysunish bilan tenglashtirish yetarli emas. O‘quvchining qoida mazmunini tushunishi, uning adolatliligini muhokama qilishi va taklifini odob bilan bildirishi ham muhimdir.

Fuqarolik mas’uliyatini rivojlantirishda bilish, qadriyatga munosabat va amaliy ishtirok yo‘nalishlarini o‘zaro bog‘lash taklif etiladi. Bilish yo‘nalishida o‘quvchi huquqiy tushunchalarni o‘zlashtiradi. Qadriyatga munosabat yo‘nalishida adolat, halollik va hurmatning muayyan vaziyatdagi mazmunini izohlaydi. Amaliy ishtirok

yo‘nalishida esa o‘rganganlarini qaror qabul qilish va hamkorlikdagi faoliyatda qo‘llaydi. Har bir mashg‘ulotda ushbu yo‘nalishlarga mos o‘quv natijalarini belgilash ta’limning izchilligini ta’minlashga yordam beradi.

Milliy qadriyatlar va huquqiy tushunchalarning aloqasi

Milliy qadriyatlar orasidagi oilaga ehtirom, o‘zaro yordam, halollik, hamjihatlik va el-yurt oldidagi burch tushunchalari huquqiy ta’limda mas’uliyatli munosabatlarni muhokama qilish imkonini beradi. Ularning mazmunini kundalik vaziyatlar bilan bog‘lash o‘quvchiga qadriyatning amaliy ifodasini tushuntiradi. Masalan, halollik bajarilgan ish haqida haqqoniy ma’lumot berish, hamjihatlik umumiy vazifada boshqalarning imkoniyatlarini hisobga olish, mas’uliyat esa o‘z zimmasiga olgan vazifani bajarish orqali yoritiladi.

Abdulla Avloniyning *“Turkiy guliston yoxud axloq”* asaridagi tarbiya va axloqqa oid mulohazalar ushbu tushunchalarni tarixiy-pedagogik nuqtayi nazardan muhokama qilish uchun manba sifatida qo‘llanishi mumkin [4]. Asardagi fikrlarni ta’limga kiritishda ularning tarixiy konteksti tushuntirilishi va zamonaviy vaziyatlarga tatbiqi alohida tahlil qilinishi lozim. Tarixiy matn huquqiy me’yorning o‘rnini egallamaydi.

Milliy qadriyatlar va huquqiy talablar o‘rtasidagi farqni saqlash muhimdir. Axloqiy jihatdan ma’qullanadigan har bir harakat huquqiy majburiyat hisoblanmaydi. Shuningdek, urf-odat yoki jamoa fikri shaxs huquqlarini cheklashga asos bo‘la olmaydi. Kattalarga hurmat o‘quvchining savol berishi va fikr bildirishini cheklash sifatida emas, muloqotdagi odob va o‘zaro ehtirom orqali tushuntirilishi kerak.

Vaziyatli topshiriqlarning pedagogik imkoniyatlari

Vaziyatli topshiriqlar huquqiy bilimni amaliy mulohaza bilan bog‘lashga yo‘naltiriladi. Topshiriqda muammo, ishtirokchilar, mavjud tanlovlar va ehtimoliy oqibatlar aniq ifodalanadi. O‘quvchidan vaziyatdagi huquq va majburiyatlarni aniqlash, yechimlarni taqqoslash hamda tanlovini asoslash talab qilinadi. Bunda javobning bahosi

faqat yakuniy qarorga emas, unga olib kelgan mulohazaning asoslanganligiga ham bog‘lanadi.

Masalan, guruh loyihasida bir o‘quvchi ko‘proq ish bajargani, lekin barcha ishtirokchilarga bir xil baho berilishi haqidagi shartli vaziyat muhokama qilinishi mumkin. O‘quvchilar vazifalar qanday taqsimlangani, yordamga ehtiyoj bo‘lganmi va baholash mezonlari oldindan tushuntirilganmi, degan savollarni ko‘rib chiqadi. Shu orqali adolatni faqat natijalarni tenglashtirish bilan cheklamasdan, mehnat, imkoniyat va kelishuvlarni hisobga olish zarurati ochiladi.

Yana bir topshiriqda maktab kutubxonasidan olingan kitobning shikastlanishi bilan bog‘liq vaziyat berilishi mumkin. O‘quvchilar hodisa haqida xabar berish, sababni aniqlash va zararni bartaraf etish variantlarini muhokama qiladi. Ushbu misol halollik, umumiy mulkka munosabat va javobgarlik tushunchalarini bog‘lashga xizmat qiladi. Bunday vaziyatlar metodik misollar bo‘lib, o‘tkazilgan tajriba natijalari sifatida talqin qilinmaydi.

Munozara va rolli mashg‘ulotlar

Munozara o‘quvchilarga turli fikrlarni tinglash, dalillarni taqqoslash va o‘z nuqtayi nazarini aniqlashtirish imkonini beradi. Mashg‘ulot boshida shaxsga emas, fikrga munosabat bildirish, suhbatdoshni tinglash va dalilsiz ayblovlardan saqlanish qoidalari kelishiladi. O‘qituvchi muhokamada faol gapirayotgan o‘quvchilar bilan birga, fikrini yozma yoki boshqa qulay shaklda ifodalashni afzal ko‘radigan o‘quvchilarning ham ishtirokini ta’minlaydi.

Rolli mashg‘ulotlar bir vaziyatni turli tomonlar nuqtayi nazaridan ko‘rib chiqish uchun qo‘llanadi. Masalan, sinf qoidalarini ishlab chiqishda o‘quvchi, o‘qituvchi va sinf vakili rollari beriladi. Ishtirokchilar o‘z ehtiyojlarini tushuntiradi, takliflarni muhokama qiladi va kelishilgan qoida loyihasini tayyorlaydi. Mashg‘ulot yakunida qaysi

manfaatlar hisobga olingani, qanday kelishmovchiliklar yuzaga kelgani va qarorning asoslari tahlil qilinadi.

Hamkorlikdagi faoliyat va kichik loyihalar

Hamkorlikdagi topshiriqlarda mas’uliyat aniq vazifa orqali ifodalanadi. Vazifaning maqsadi, bajarish muddati va natijani baholash mezonlari oldindan tushuntiriladi. Guruh a’zolarining imkoniyatlari hisobga olinib, har bir o‘quvchiga mazmunli ishtirok etish sharoiti yaratiladi. Umumiy natija bilan birga, individual hissa va hamkorlik jarayoni ham ko‘rib chiqiladi.

Kichik loyihalar maktab muhitidagi muammoni aniqlash va unga yechim taklif etishga qaratilishi mumkin. Kutubxona kitoblarini asrash, sinfda o‘zaro yordamni tashkil etish yoki umumiy foydalanish joylari uchun tushunarli qoidalar ishlab chiqish shunday faoliyatga misol bo‘ladi. O‘quvchilar muammoni tavsiflaydi, zarur ma’lumotlarni yig‘adi, bajariladigan ishlarni kelishadi va natijani taqdim etadi. Loyihaning ta’limiy qiymati uning ko‘lami bilan emas, o‘quvchilarning qaror qabul qilish va vazifani bajarishdagi ishtiroki bilan baholanadi.

Oila–maktab–mahalla hamkorligi

Oila va mahalla bilan hamkorlik huquqiy ta’lim mazmunini kundalik munosabatlar bilan bog‘lash imkoniyatini kengaytirishi mumkin. Oila doirasida kelishilgan vazifalar, o‘zaro hurmat va yordamga oid misollar muhokama qilinadi. Mahalla bilan hamkorlik esa yoshga mos, xavfsiz va ixtiyoriy tashabbuslar orqali tashkil etiladi. Maktab faoliyatning o‘quv maqsadini belgilaydi va uning pedagogik mazmunini nazorat qiladi.

Oilalarning vaqt va ishtirok imkoniyatidagi farqlar hisobga olinishi zarur. Tashqi tadbirda qatnasha olmaydigan o‘quvchiga maktab sharoitida bajariladigan muqobil topshiriq berilishi mumkin. Ota-onaning faolligi o‘quvchining bahosini belgilamasligi, hamkorlik esa oilaviy qarashlar yoki shaxsiy ma’lumotlarni tekshirish vositasiga aylanmasligi kerak.

Baholash, qayta aloqa va refleksiya

Fuqarolik mas’uliyatini baholashda o‘quvchining shaxsiga umumiy axloqiy tavsif berishdan ko‘ra, kuzatiladigan harakatlarga tayanish taklif etiladi. Huquq va majburiyatlarni farqlash, qarorni asoslash, boshqalarning manfaatlarini hisobga olish, kelishilgan vazifani bajarish va muloqot qoidalariga rioya qilish asosiy ko‘rsatkichlar sifatida olinadi. Yozma javoblar, vaziyat tahlili va pedagogik kuzatuv natijalari birgalikda ko‘rib chiqiladi.

Refleksiya o‘quvchining o‘z qarorini tushuntirishi va qayta ko‘rib chiqishiga xizmat qiladi. “Qarorim nimaga asoslandi?”, “U boshqalarga qanday ta’sir qiladi?”, “Qaysi jihatini o‘zgartirishim mumkin?” kabi savollar berilishi mumkin. O‘qituvchining fikr-mulohazasi javobdagi asosli jihatni, aniqlashtirilishi kerak bo‘lgan masalani va keyingi harakatni ko‘rsatadi.

Mazkur yondashuvlarni amalga oshirish o‘qituvchining metodik tayyorgarligi va maktabdagi kundalik munosabatlarga bog‘liq. Darsda muhokama qilingan adolat, hurmat va mas’uliyat baholash hamda sinf qoidalarida ham izchil namoyon bo‘lishi lozim. Taklif etilgan metodlarning samaradorligi ushbu tezisda empirik jihatdan tasdiqlanmagan; ularni amaliy sinovdan o‘tkazish va o‘quv natijalaridagi o‘zgarishlarni tekshirish keyingi tadqiqot vazifasi hisoblanadi.

Xulosa. Huquqiy ta’limda milliy qadriyatlar asosida o‘quvchilarning fuqarolik mas’uliyatini rivojlantirish huquqiy bilimlarni hayotiy vaziyatlar va amaliy faoliyat bilan uyg‘unlashtirishni talab etadi. Inson qadriga hurmat, adolat, halollik, hamjihatlik va el-yurt oldidagi burch kabi qadriyatlar o‘quvchilarga o‘z harakatining ijtimoiy mazmunini tushunishda yordam beradigan tarbiyaviy manba sifatida qo‘llanishi mumkin. Bunda fuqarolik mas’uliyati huquq va majburiyatlarni anglash, boshqalarning huquqlarini hisobga olish, qaror oqibatlarini baholash hamda umumiy faoliyatda ongli ishtirok etish orqali ifodalanadi.

Tezisda huquqiy bilim, qadriyatlarni anglash va mas’uliyatli faoliyatni o‘zaro bog‘lash asosiy pedagogik yo‘nalish sifatida taklif etildi. Milliy qadriyatlarni huquqiy mazmun bilan uyg‘unlashtirishda axloqiy tavsiya va huquqiy majburiyat o‘rtasidagi farqni saqlash zarur. Urf-odat yoki jamoa fikri shaxs huquqlarini cheklashga asos bo‘lmasligi, hurmat va hamjihatlik esa o‘quvchining fikr bildirish hamda asosli e’tiroz qilish imkoniyatini qo‘llab-quvvatlashi kerak.

Vaziyatli topshiriqlar, munozaralar, rolli mashg‘ulotlar va hamkorlikdagi loyihalar o‘quvchilarga huquqiy tushunchalarni qo‘llashni mashq qilish imkonini beradi. Ushbu usullarda muammoni aniqlash, turli tomonlarning manfaatlarini ko‘rib chiqish, muqobil yechimlarni taqqoslash va qarorni dalillar bilan asoslashga e’tibor qaratiladi. Topshiriqlarning o‘quvchilar yoshi va tayyorgarligiga mosligi, faoliyat maqsadining tushunarliligi hamda har bir ishtirokchiga munosib vazifa berilishi ularni qo‘llashning muhim shartlaridir.

Oila–maktab–mahalla hamkorligi huquqiy bilimlarni kundalik munosabatlar bilan bog‘lash imkoniyatini kengaytirishi mumkin. Biroq hamkorlikdagi tadbirlarning soni fuqarolik mas’uliyati rivojlanganini tasdiqlovchi ko‘rsatkich sifatida olinmasligi lozim. Faoliyatning ta’limiy qiymati o‘quvchining vazifani anglab bajarishi, qarorlarni muhokama qilishi va o‘z hissasini tahlil qilishi orqali baholanadi. Ishtirok ixtiyoriy, xavfsiz va barcha o‘quvchilar uchun imkon qadar teng sharoitda tashkil etilishi zarur.

Baholashda o‘quvchining shaxsiga umumiy axloqiy baho berish o‘rniga, uning kuzatiladigan faoliyatiga tayanish taklif etiladi. Huquq va majburiyatlarni farqlash, yechimni asoslash, hamkorlik qoidalariga rioya qilish, kelishilgan vazifani bajarish va o‘z qarorini qayta ko‘rib chiqish asosiy mezonlar sifatida belgilandi. Turli topshiriqlar, pedagogik kuzatuv va refleksiv yozuvlarni birgalikda tahlil qilish o‘quvchining qaysi ko‘nikmalarini rivojlantirish zarurligini aniqlashga xizmat qiladi.

Taklif etilgan yondashuvlarning amaliy samaradorligi ushbu tezis doirasida empirik jihatdan tekshirilmagan. Shu sababli keyingi tadqiqotlarda topshiriqlar va baholash mezonlarini sinovdan o‘tkazish, boshlang‘ich hamda yakuniy natijalarni taqqoslash, o‘qituvchi faoliyati va maktab muhitining ta’sirini hisobga olish zarur. Bunday tekshiruvlar milliy qadriyatlarga tayangan huquqiy ta’limning fuqarolik mas’uliyatini rivojlantirishdagi imkoniyatlari va qo‘llanish chegaralarini aniqroq belgilashga yordam beradi.

Foydalanilgan adabiyotlar

1. O‘zbekiston Respublikasining “Ta’lim to‘g‘risida”gi Qonuni. 2020-yil 23-sentabr, O‘RQ-637-son. Lex.uz. www.lex.uz

2. O‘zbekiston Respublikasi Prezidentining “Jamiyatda huquqiy ong va huquqiy madaniyatni yuksaltirish tizimini tubdan takomillashtirish to‘g‘risida”gi Farmoni. 2019-yil 9-yanvar, PF-5618-son. Lex.uz. www.lex.uz

3. O‘zbekiston Respublikasi Vazirlar Mahkamasining “Uzluksiz ma’naviy tarbiya konsepsiyasini tasdiqlash va uni amalga oshirish chora-tadbirlari to‘g‘risida”gi qarori. 2019-yil 31-dekabr, 1059-son. Lex.uz. www.lex.uz

4. Avloniy, A. *Turkiy guliston yoxud axloq*. Elektron matn. Asar matni. ipkmvd.uz

5. UNESCO. *Global Citizenship Education: Topics and Learning Objectives*. Paris: UNESCO, 2015. Nashr matni. www.unesco.org

6. Council of Europe. *Reference Framework of Competences for Democratic Culture. Volume 1: Context, Concepts and Model*. Strasbourg: Council of Europe Publishing, 2018. Nashr matni. rm.coe.int

Mineral-Controlled Vapor Quality and Feedstock Operating Window for HZSM-5 Aromatization of Oil-Shale Pyrolysis Vapors

Mengliyev Sh. Sh.
Gulomov Sh. T.
Khabipov R. S.
Tashkent Institute of Chemical Technology
Khabipovruslan@gmail.com

Background and Rationale

The catalytic response of HZSM-5 during oil-shale conversion is governed not only by catalyst acidity and pore architecture but also by the composition of the vapor stream generated upstream. Minerals can modify heat transfer, primary decomposition, secondary cracking, adsorption of intermediates, and the partitioning of sulfur- and nitrogen-containing species. Consequently, two shale batches with similar total organic carbon can produce vapors with different catalytic suitability. For metalliferous shales from Uzbekistan, a practical feedstock qualification criterion is therefore needed before catalyst optimization. The central question is not simply how much oil a shale yields, but whether its organo-mineral matrix generates a vapor composition that lies inside a reproducible operating window for HZSM-5 aromatization.

Keywords

oil shale; HZSM-5; pyrolysis vapors; mineral matrix; feedstock operating window; aromatization.

Objective and Experimental Basis

The objective is to establish the relationship 'organo-mineral composition → thermolysis behavior → primary vapor quality → expected catalytic suitability'. At least three independent feedstock batches from one deposit are characterized by XRD, XRF, CHNS/O, TOC/TIC, moisture, and ash content. TGA-DSC is performed at 5, 10, 20,

and 30 °C min-1, while TG-FTIR tracks the temperature-resolved evolution of CO2, CO, hydrocarbon groups, and heteroatom-containing vapors. Bench reactor pyrolysis is used for material-balance closure and chromatographic characterization of condensable and gaseous products.

All batches are prepared under the same particle-size and drying protocol. Reactor experiments are normalized to dry feed mass and fixed thermal history. Material-balance closure of 95-105% is used as a minimum quality criterion before a batch is included in the feedstock-to-vapor model.

Methodological Principle

An apparent activation energy obtained from thermoanalysis is not interpreted directly as technological efficiency. Isoconversional analysis is used to identify transformation windows, whereas reactor measurements establish the actual vapor distribution under defined conditions. Mineral descriptors are interpreted together with TOC and vapor evolution rather than as isolated predictors.

A feedstock operating window is proposed instead of a universal 'best shale' ranking. The window is defined by a combination of carbon potential, carbonate-to-silicate balance, temperature of hydrocarbon-vapor release, heteroatom-vapor burden, and material-balance closure. Batches inside the window are considered suitable for subsequent HZSM-5 contact tests under a common catalytic protocol.

Proposed Scientific Contribution 1

The first contribution is a vapor-quality descriptor that couples feedstock composition with the temperature-resolved formation of catalytically relevant vapors. This avoids ranking a shale by total oil yield alone. A batch with high organic content but excessive COx or heteroatom release may be less suitable for direct aromatization than a lower-yield batch with a more favorable hydrocarbon-vapor profile.

Proposed Scientific Contribution 2

The second contribution is an operating-window validation strategy. Two independent batches are used to establish the composition-to-vapor relationship, while a third batch is reserved for transferability testing. The reserved batch is not used to tune the descriptor. Agreement between predicted suitability and measured vapor composition provides a stronger basis for deciding whether the framework is transferable beyond one pooled sample.

Block	Key parameter	Method	Use in operating window
Organic matter	TOC, H/C, CHNS/O	TOC/TIC + elemental analysis	Carbon and hydrogen potential
Minerals	Carbonates, silicates, sulfides	XRD/XRF	Mineral-control descriptor
Kinetics	T peaks, E_a(α)	TGA-DSC	Thermolysis window
Vapors	HC groups, COx, S/N species	TG-FTIR + reactor GC	Catalytic feed quality

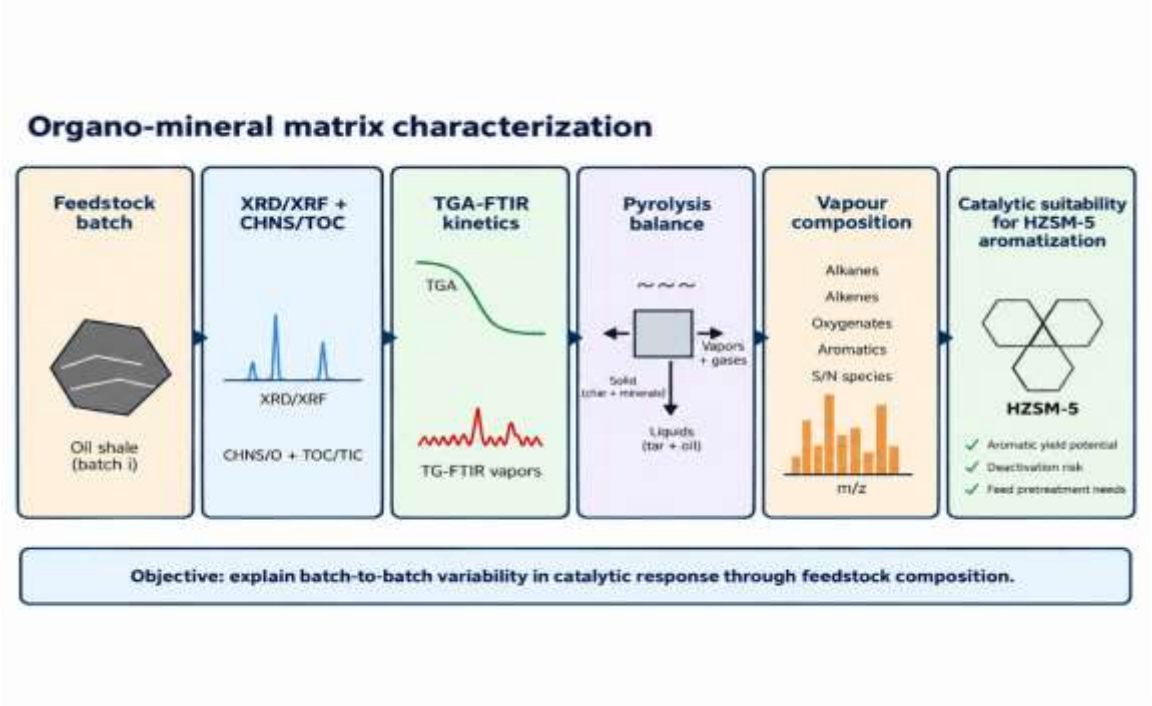


Figure 1. Feedstock-to-vapor workflow for defining a reproducible oil-shale operating window before HZSM-5 aromatization.

Expected Scientific Value

The expected value is a feedstock qualification step that precedes catalyst optimization. Instead of assigning one HZSM-5 condition to all shale batches, catalytic testing can be focused on batches whose measured vapor characteristics fall inside the defined operating window. This improves comparability between catalyst tests and reduces the risk of attributing feedstock variability to catalyst performance.

Conclusion

A reproducible oil-shale aromatization study should first qualify the primary vapor feed generated by the organo-mineral matrix. Combining independent feedstock batches, thermoanalytical kinetics, reactor material-balance closure, and vapor composition provides a causal route for defining a feedstock operating window and selecting appropriate HZSM-5 contact conditions.

References

[1] Kholikov A.B., Akhmedov M.Sh., Almatov I.M. Technology of extraction of useful components from shales of the Aktau deposit. Vestnik of Geosciences. 2023;3(339):42-47. https://doi.org/10.19110/geov.2023.3.4.

[2] Almatov I.M., Usenov R.B., Makhmarezhabov D.B. Comprehensive processing methods for oil shale from the Aktau deposit (Uzbekistan). Obogashchenie Rud. 2023;(6). https://doi.org/10.17580/or.2023.06.05.

[3] Wang Z., Wang T., Yan X. Investigation of the current state of catalytic pyrolysis technology for oil shale: A review. Journal of Analytical and Applied Pyrolysis. 2025;192:107238. https://doi.org/10.1016/j.jaap.2025.107238.

[4] Yuan S. et al. In-situ catalytic pyrolysis of oil shale: Recent advances and perspectives. Journal of Analytical and Applied Pyrolysis. 2026;197:107798. https://doi.org/10.1016/j.jaap.2026.107798.

[5] Lu H., Zhao Q., Zhang Y., Song Z., Zhang S., Dong Y., Jin H., Guo L. A multi-step kinetics study on Chang-7 shale pyrolysis: Impact of shale inherent minerals. Journal of Analytical and Applied Pyrolysis. 2024;184:106860. https://doi.org/10.1016/j.jaap.2024.106860.

[6] Zhang H. et al. Impact of inherent minerals on isothermal pyrolysis of oil shale: Characteristics and kinetics. Journal of Analytical and Applied Pyrolysis. 2025;191:107231. https://doi.org/10.1016/j.jaap.2025.107231.

[7] Zhao Z., Littke R., Hartkopf-Fröder C. The effects of sample preparation on the interpretation of pyrolysis-based organic matter analysis in immature oil shale. International Journal of Coal Geology. 2024;296:104648. https://doi.org/10.1016/j.coal.2024.104648.

[8] He L., Ma Y., Tan T., Yue C., Li S., Tang X. Mechanisms of sulfur and nitrogen transformation during Longkou oil shale pyrolysis. Energy. 2021;232:120977. https://doi.org/10.1016/j.energy.2021.120977.

INVESTIGATION OF NUMERICAL MODELING OF BUILDINGS WITH DRY-FRICTION SEISMIC ISOLATION

Boltaboyev Muslimbek Qodirjon o‘g‘li
Structural Designer, AKFA ASSEMBLY LLC, Tashkent, Uzbekistan;
Qodirov Sardor Sobir o‘g‘li
Assistant Lecturer, Department of Building and Structures Construction, Tashkent University of Architecture and Civil Engineering, Tashkent, Uzbekistan;
Maxmudov Said Maxmudovich
Professor, Department of Building and Structures Construction, Tashkent University of Architecture and Civil Engineering, Tashkent, Uzbekistan;

Abstract

This thesis develops a methodology for representing dry-friction sliding seismic isolators in numerical models of buildings and verifying the reliability of the resulting calculations. A set of comparison criteria is systematized for buildings with a fixed-base foundation (M1), a flat sliding bearing (M2), and a single-curvature friction pendulum bearing (M3). The dynamic equilibrium equation, Coulomb friction, and the restoring force of the curved-surface bearing are presented using a consistent system of notation. A K0–K3 verification sequence is proposed for static equilibrium, time integration, force–displacement hysteresis, and energy balance. As a result, a methodological framework is established to support consistent modeling and comparison of dynamic responses in the OpenSeesPy environment; numerical performance indicators based on real earthquake records are not presented in this study.

Keywords

Dry friction, seismic isolation, numerical modeling, friction pendulum, sliding bearing, OpenSeesPy, nonlinear dynamic analysis, computational verification.

QURUQ ISHQALANISHLI SEYSMOIZOLYATSIYALANGAN BINOLARNI SONLI MODELLASHTIRISHNI TADQIQ QILISH

Boltaboyev Muslimbek Qodirjon o‘g‘li

(konstruktor, «AKFA ASSEMBLY» MChJ, Toshkent, O‘zbekiston; boltabayevmuslimbek@gmail.com)

Qodirov Sardor Sobir o‘g‘li

(«Bino va inshootlar qurilishi» kafedrasi assistenti, Toshkent arxitektura-qurilish universiteti, Toshkent, O‘zbekiston; sardorqodirov110599@gmail.com)

Maxmudov Said Maxmudovich

(«Bino va inshootlar qurilishi» kafedrasi professori, Toshkent arxitektura-qurilish universiteti, Toshkent, O‘zbekiston; s.maxmudov@taqu.uz)

Annotatsiya. Tezisda quruq ishqalanish asosidagi sirpanma seysmoizolyatorlarni binolarning sonli hisobiy sxemalarida ifodalash va hisoblash natijalarining ishonchliligini tekshirish metodikasi ishlab chiqiladi. Poydevori qattiq mahkamlangan (M1), tekis sirpanma tayanchli (M2) va bir egrilikli friksion mayatnik tayanchli (M3) binolar uchun taqqoslash mezonlari tizimlashtirilgan. Dinamik muvozanat tenglamasi, Kulon ishqalanishi va egri sirtli tayanchning qaytaruvchi kuchi bir xil belgilar tizimida ko‘rsatilgan. Statik muvozanat, vaqt bo‘yicha integrallash, kuch–siljish gisterezisi va energiya balansi uchun K0–K3 tekshiruv ketma-ketligi taklif etiladi. Natijada OpenSeesPy muhitida izchil modellashtirish va dinamik javoblarni taqqoslashga xizmat qiluvchi metodik sxema shakllantiriladi; real zilzila yozuvlari bo‘yicha hisobiy samaradorlik ko‘rsatkichlari bu ishda berilmaydi.

Kalit so‘zlar: quruq ishqalanish, seysmoizolyatsiya, sonli modellashtirish, friksion mayatnik, sirpanma tayanch, OpenSeesPy, nochiziqli dinamik tahlil, hisobiy tekshiruv.

Kirish

Zilzilaviy hududlarda bino va inshootlarning seysmik ishonchliligini oshirish

muhandislik loyihalashining muhim vazifasidir. QMQ 2.01.03-19 “Zilzilaviy hududlarda qurilish” talablariga muvofiq konstruktiv yechimlarni tanlashda seysmik ta’sirni inobatga olish zarur [1]. Oddiy qattiq tayanchli sxemada poydevorning gorizontal tebranishlari ustki konstruksiyaga uzatiladi, seysmoizolyatsiyada esa maxsus tayanch qatlamining deformatsiyasi dinamik javobni o‘zgartiradi. Shu sababli seysmoizolyatorning mexanik modeli hisobning ishonchliligini belgilovchi omillardan biridir. Zayas, Low va Mahin friksion mayatnikli tayanchlarda egri sirt geometriyasi hamda og‘irlik kuchi asosida qaytaruvchi ta’sir yuzaga kelishini asoslagan [2]. Constantinou, Mokha va Reinhorn esa sirpanma kontaktlarning ishqalanishi tezlik, bosim va boshlang‘ich siljishga bog‘liq bo‘lishi mumkinligini ko‘rsatgan [3]. Dolce va hammualliflar po‘lat–PTFE kontaktining mexanik xususiyatlari ish rejimi bilan bog‘liqligini eksperimental tekshirgan [4]. Demak, doimiy ishqalanish koeffitsiyentiga asoslangan Kulon modeli metodik jihatdan qulay bo‘lsa-da, u materialning barcha real xususiyatlarini qamrab olmaydi. Tadqiqotning maqsadi — quruq ishqalanishli seysmoizolyatsiyalangan binolar uchun qiyosiy hisobiy modellar, asosiy tenglamalar va sifat nazorati nuqtalarini bir tizimga keltirish. Bunda mavjud tadqiqotlarda ochib berilgan kontakt mexanikasini takroran “yangilik” sifatida taqdim etish emas, balki uch xil konstruktiv sxemani izchil hisoblash va olingan natijalarni bir xil mezonlarda tekshirishga qaratilgan metodik yechim ishlab chiqish ko‘zda tutiladi.



1-rasm. Qattiq mahkamlangan va quruq ishqalanishli tayanchlarga ega binolarning taqqoslama hisobiy sxemalari.

Tadqiqot metodologiyasi

Hisobiy tajribada bir xil ustki konstruksiya uchun uchta variant qabul qilinadi: M1 — poydevori qattiq mahkamlangan bino; M2 — tekis sirpanma tayanchli bino; M3 — bir egrilikli friksion mayatnik tayanchli bino (1-rasm). Barcha variantlarda geometriya, massa, materiallar, ustki konstruksiya bikirligi va grunt tezlanishi bir xil olinadi. Dastlab bir yo‘nalishli ikki o‘lchamli hisobiy sxema tanlanadi; haqiqiy loyiha uchun fazoviy ta’sirlar ham alohida tekshiriladi.

Yerga nisbatan erkinlik darajalarida harakatning umumiy tenglamasi quyidagicha yoziladi:

$$\mathbf{M\ddot{u}} + \mathbf{C\dot{u}} + \mathbf{f}_s(\mathbf{u}) + \mathbf{b}F_b = -\mathbf{M}\mathbf{r}a_g(t) \qquad (1)$$

bu yerda M — massalar matritsasi (kg); C — viskoz so‘nish matritsasi (N·s/m); u — nisbiy siljishlar vektori (m); f_s — ustki konstruksiyaning ichki kuchlari (N); F_b — izolyatorning gorizontal qarshiligi (N); b — uni erkinlik darajalariga taqsimlash vektori; r — seysmik ta’sir yo‘nalishi vektori; $a_g(t)$ — grunt tezlanishi (m/s^2). Qattiq tayanchli M1 modelida izolyator erkinlik darajasi kiritilmaydi.

Tekis sirpanma tayanchning sirpanish holatidagi qarshiligi doimiy kinetik ishqalanish koeffitsiyenti bilan ifodalanadi:

$$F_{\text{sl}} = \mu N \,\text{sgn}(\dot{u}_b) \qquad (2)$$

bunda μ — kinetik ishqalanish koeffitsiyenti (o‘lchamsiz); N — normal siquvchi kuch (N); $\dot{u}_b$ — sirpanish tezligi (m/s); sgn — tezlik ishorasi. Qo‘zg‘almaslik–sirpanish o‘tishida chegaraviy statik ishqalanish sharti alohida hisobga olinadi. M3 modelida kichik burchak va doimiy vertikal yuk farazlarida:

$$F_{\text{FP}} = \frac{N}{R_{\text{eff}}} u_b + \mu N \,\text{sgn}(\dot{u}_b) \qquad (3)$$

bu yerda R_{eff} — tayanchning samarali egrilik radiusi (m), u_b — izolyatorning gorizontal siljishi (m). Birinchi had geometrik qaytaruvchi kuchni, ikkinchisi esa ishqalanish qarshiligini ifodalaydi. Tekis sirpanma M2 sxemasida mazkur geometrik

qaytaruvchi had mavjud emas. Ushbu sodda ifodalar sirpanish holatiga tegishli bo‘lib, to‘liq element modeli kontakt shartlarini ham hisobga oladi.

OpenSeesPy hisoblash muhitida M2 uchun flatSliderBearing, M3 uchun singleFPBearing elementlari, kontakt yuzasi uchun Coulomb ishqalanish modeli tanlanadi [5–7]. Grunt akselerogrammasi UniformExcitation orqali beriladi; vaqt bo‘yicha integrallashda Newmark algoritmidan ($\gamma = 0{,}5$; $\beta = 0{,}25$) foydalanish mumkin [8, 9]. Ushbu algoritm nochiziqli tenglamalarni iteratsion yechishni va qadam bo‘yicha yaqinlashishni nazorat qilishni talab etadi.

Natijalar va muhokama

Metodik tadqiqot natijasida uch model uchun hisobiy farqlarni ajratib beruvchi tasnif ishlab chiqildi (1-jadval). Undan ko‘rinadiki, M2 va M3 variantlarining asosiy umumiy jihati sirpanishdagi ishqalanish bo‘lsa, M3 da egrilikdan keladigan qaytaruvchi kuch ham mavjud. Demak, M1–M2 taqqoslanishi sirpanish qatlamining, M2–M3 taqqoslanishi esa egri sirtli tayanchning qo‘shimcha mexanik ta’sirini baholashga xizmat qiladi. Bu xulosa konstruktiv-matematik modeldan kelib chiqadi, hisoblangan foizli samaradorlik emas.

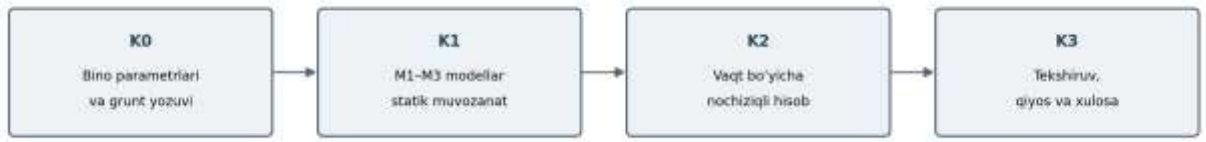
1-jadval

Qiyosiy hisobiy modellar va ularning verifikatsiya mezonlari

Model	Izolyatsiya qatlamining ishlashi	Asosiy tekshiruv mezoni
M1	Gorizontal sirpanish erkinligi yo‘q	Poydevor reaksiyasi; qavat tezlanishi
M2	Kulon ishqalanishi; geometrik qaytaruvchi had yo‘q	Sirpanish sharti; kuch–siljish gisterezisi
M3	Ishqalanish va $N \cdot u_b/R_{eff}$ qaytaruvchi kuch	Gisterezis; qaytaruvchi bikirlik; qoldiq siljish

Hisobning takrorlanuvchanligini ta’minlash uchun K0–K3 nazorat nuqtalari belgilandi (2-rasm). K0 da geometriya, massalar, tayanch xususiyatlari va zilzila

yozuvlari birliklari tekshiriladi. K1 da statik muvozanat hamda tayanchlarga tushadigan normal yuklamalar solishtiriladi. K2 da vaqt qadami, iteratsion yaqinlashish va kontaktning sirpanish holati nazorat qilinadi. K3 da mutlaq va nisbiy tezlanishlar, qavatlararo siljishlar, izolyator kuchlari hamda energiya balansi qiyoslanadi.



2-rasm. Sonli modellashtirish bosqichlari va hisoblash natijalarini nazorat qilish nuqtalari K0–K3.

Qavatlarning mutlaq tezlanishini baholashda yerga nisbatan hisoblangan tezlanishga grunt tezlanishi qo‘shiladi; bu UniformExcitation modelidagi nisbiy koordinatalardan kelib chiqadi [9]. Ishqalanishda dissipatsiyalangan energiya sirpanish davomida kontakt kuchining bajargan ishiga teng. Doimiy N va μ sharoitida to‘liq simmetrik sirpanish sikli uchun gisterezis maydonini nazorat bahosi sifatida $E_{fr} = 4\mu ND$ ifodasidan foydalanish mumkin; D — sirpanishning maksimal amplitudasi (m). Bu formula haqiqiy zilzila yozuvi bo‘yicha hisobiy natija o‘rnini bosa olmaydi. Metodikaning asosiy cheklovlari: tekis sirpanma tayanchda mustaqil qaytaruvchi kuchning yo‘qligi, ishqalanish koeffitsiyentining real kontakt sharoitlariga sezgirligi, vertikal yuk va ko‘p yo‘nalishli harakatning o‘zgarishi, shuningdek, hisoblash qadami tanlanishidir. Shu sababli tekshiruvsiz qabul qilingan birgina μ qiymati yoki birgina akselerogramma asosida seysmoizolyatsiya samaradorligi haqida umumiy xulosa chiqarish mumkin emas.

Xulosa

Quruq ishqalanishli seysmoizolyatsiyalangan binolar uchun uchta qiyosiy sonli model, yagona matematik tavsif va K0–K3 hisobiy nazorat ketma-ketligi shakllantirildi. Taklif etilgan sxema ishqalanishning o‘z ta’sirini friksion mayatnikning geometrik qaytaruvchi kuchidan ajratishga, shuningdek, akselerogramma asosidagi nochiziqli

hisoblashlarning ishonchliligini tekshirishga imkon beradi. Ushbu metodikani konkret binoda qo‘llash uchun geometrik, material va tayanch parametrlari hamda mos zilzila yozuvlari asosida alohida sonli hisoblashlar bajarilishi zarur. Sonli samaradorlik foizlari va parametrik optimallashtirish ushbu tezisning natijasi sifatida da’vo qilinmaydi.

Foydalanilgan adabiyotlar ro‘yxati

1. QMQ 2.01.03-19. Zilzilaviy hududlarda qurilish. – Toshkent: O‘zbekiston Respublikasi Qurilish vazirligi, 2019. – URL: https://gov.uz/oz/mc/pages/shaharsozlik-normalari-va-qoidalari (murojaat sanasi: 09.10.2026).

2. Zayas V. A., Low S. S., Mahin S. A. A Simple Pendulum Technique for Achieving Seismic Isolation // Earthquake Spectra. – 1990. – Vol. 6, No. 2. – P. 317–333. – DOI: 10.1193/1.1585573.

3. Constantinou M. C., Mokha A., Reinhorn A. M. Teflon Bearings in Base Isolation II: Modeling // Journal of Structural Engineering. – 1990. – Vol. 116, No. 2. – P. 455–474. – DOI: 10.1061/(ASCE)0733-9445(1990)116:2(455).

4. Dolce M., Cardone D., Croatto F. Frictional Behaviour of Steel-PTFE Interfaces for Seismic Isolation // Bulletin of Earthquake Engineering. – 2005. – Vol. 3. – P. 75–99. – DOI: 10.1007/s10518-005-0187-9.

5. Flat Slider Bearing Element // OpenSees Documentation. – URL: https://opensees.github.io/OpenSeesDocumentation/user/manual/model/elements/FlatSliderBearingElement.html (murojaat sanasi: 09.10.2026).

6. Single Friction Pendulum Bearing Element // OpenSees Documentation. – URL: https://opensees.github.io/OpenSeesDocumentation/user/manual/model/elements/SingleFrictionPendulumBearing.html (murojaat sanasi: 09.10.2026).

7. Coulomb Friction // OpenSees Wiki. – URL: https://opensees.berkeley.edu/wiki/index.php/Coulomb_Friction (murojaat sanasi: 09.10.2026).

8. Newmark Method // OpenSees Documentation. – URL: https://opensees.github.io/OpenSeesDocumentation/user/manual/analysis/integrator/Newmark.html (murojaat sanasi: 09.10.2026).

9. Uniform Excitation Pattern // OpenSees Documentation. – URL: https://opensees.github.io/OpenSeesDocumentation/user/manual/model/pattern/uniformExcitationPattern.html (murojaat sanasi: 09.10.2026).

International Legal Protection of the Right to a Clean, Healthy and Sustainable Environment

Kholboev Umarjon Fakhriddin ogli
Lecturer at the Department of Private Law Disciplines, Sarbon University

Abstract

The thesis analyses the international legal protection of the right to a clean, healthy and sustainable environment. It examines the formation of the right, its recognition in United Nations instruments, regional treaties and the case law of international courts. The study identifies the uncertain content of the right, the absence of a universal binding instrument and differences in the level of protection. Recommendations are made for improving the legislation of Uzbekistan in line with its international obligations.

Keywords

clean and healthy environment, human rights, international law, Aarhus Convention, case law, Uzbekistan.

Toza, sog‘lom va barqaror atrof-muhitga bo‘lgan huquqning xalqaro-huquqiy himoyasi

Xolboyev Umarjon Faxriddin o‘g‘li
Sarbon universiteti Xususiy-huquqiy fanlar kafedrasi o‘qituvchisi
e-mail: umarkholboev023@gmail.com Tel raqam: +998919103301

Annotatsiya. *Tezisda toza, sog‘lom va barqaror atrof-muhitga bo‘lgan huquqning xalqaro-huquqiy himoyasi tahlil qilinadi. Huquqning shakllanishi, BMT hujjatlarida tan olinishi, mintaqaviy shartnomalar va xalqaro sud amaliyoti ko‘rib chiqiladi. Huquq mazmunining noaniqligi, majburiy kuchga ega universal hujjatning yo‘qligi va himoya darajasidagi tafovutlar aniqlanadi. O‘zbekiston qonunchiligi va xalqaro majburiyatlari doirasida takomillashtirish bo‘yicha takliflar beriladi.*

Kalit so‘zlar: *toza va sog‘lom atrof-muhit, inson huquqlari, xalqaro huquq, Orxus konvensiyasi, sud amaliyoti, O‘zbekiston.*

Международно-правовая защита права на чистую, здоровую и устойчивую окружающую среду

Холбоев Умаржон Фахриддин угли,

Преподаватель кафедры частноправовых дисциплин Университета “Сарбон”

Аннотация. В тезисах анализируется международно-правовая защита права на чистую, здоровую и устойчивую окружающую среду. Рассматриваются формирование этого права, его признание в документах ООН, региональные договоры и практика международных судов. Выявляются неопределённость содержания права, отсутствие универсального обязательного документа и различия в уровне защиты. Предлагаются рекомендации по совершенствованию законодательства Узбекистана с учётом его международных обязательств.

Ключевые слова: *чистая и здоровая окружающая среда, права человека, международное право, Орхусская конвенция, судебная практика, Узбекистан.*

Kirish

Havoning ifloslanishi, suv tanqisligi, yerlarning degradatsiyasi va iqlim o‘zgarishi bugun insonning hayoti va salomatligiga bevosita ta’sir ko‘rsatmoqda. Shu sababli atrof-muhit masalasi tobora ko‘proq inson huquqlari nuqtayi nazaridan muhokama qilinmoqda. Uzoq vaqt davomida toza, sog‘lom va barqaror atrof-muhitga bo‘lgan huquq alohida inson huquqi sifatida tan olinmadi. Faqat so‘nggi yillarda BMT organlari, mintaqaviy sudlar va Xalqaro sud bu borada aniq qadamlar tashladi. Shunga qaramay, huquqning mazmuni, huquqiy kuchi va uni ta’minlash mexanizmlari hali to‘liq oydinlashmagan.

Tezisning maqsadi toza, sog‘lom va barqaror atrof-muhitga bo‘lgan huquqning xalqaro-huquqiy himoyasini tahlil qilish, mavjud muammolarni aniqlash va O‘zbekiston uchun tavsiyalar ishlab chiqishdir.

Maqsadga erishish uchun quyidagi vazifalar belgilandi: huquqning shakllanish bosqichlarini ko‘rsatish, shartnoma asoslari va sud amaliyotini tahlil qilish, asosiy

muammolarni aniqlash hamda milliy qonunchilikni takomillashtirish bo‘yicha takliflar berish.

Huquqning shakllanishi va BMT tomonidan tan olinishi

Atrof-muhit sifati bilan inson huquqlari o‘rtasidagi bog‘liqlik xalqaro hujjatlarda birinchi marta 1972-yilgi Stokgolm deklaratsiyasida aniq ifodalangan. Uning 1-tamoyilida inson qadr-qimmat va farovonlikka imkon beradigan sifatdagi muhitda erkinlik, tenglik va yetarli hayot sharoitlariga asosiy huquqqa ega ekani, shu bilan birga bu muhitni himoya qilish va yaxshilash mas’uliyatini ham o‘z zimmasiga olishi aytilgan.[1] Biroq deklaratsiya shartnoma emas edi, shuning uchun u davlatlarga majburiy talablar yuklamadi. Oradan yarim asrdan ko‘proq vaqt o‘tib, bu huquq global darajada rasman tan olindi. 2021-yil 8-oktyabrda BMT Inson huquqlari kengashi 48/13-sonli rezolyutsiyada toza, sog‘lom va barqaror atrof-muhitga bo‘lgan huquqni inson huquqi sifatida e’tirof etdi. Hujjat 43 ovoz bilan qabul qilindi, qarshi ovoz berilmadi, to‘rt davlat betaraf qoldi.[2] 2022-yil 28-iyulda BMT Bosh Assambleyasi ham 76/300-sonli rezolyutsiya orqali shu huquqni tan oldi va davlatlarni uni ta’minlash bo‘yicha sa’y-harakatlarni kuchaytirishga chaqirdi. Rezolyutsiyaga 161 davlat ovoz berdi, qarshi chiqqan bo‘lmadi, sakkiz davlat, jumladan Markaziy Osiyodan Qirg‘iziston, betaraf qoldi.[3] Ikkala rezolyutsiya ham yuridik majburiy emas, ammo ular davlatlarning bu masaladagi keng qo‘llab-quvvatlashini ko‘rsatadi.

Universal darajada bu huquq hozircha alohida shartnoma moddasi sifatida mustahkamlanmagan. Masalan, Iqtisodiy, ijtimoiy va madaniy huquqlar to‘g‘risidagi xalqaro pakt sog‘liq huquqini ta’minlash choralari qatorida atrof-muhit gigiyenasini

[1] UN Conference on the Human Environment. Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration), Principle 1. Stockholm, 5–16 June 1972. UN Doc. A/CONF.48/14/Rev.1.
[2] UN Human Rights Council. Resolution 48/13, The human right to a clean, healthy and sustainable environment. A/HRC/RES/48/13, 8 October 2021 (43 votes in favour, none against, 4 abstentions). https://www.ungeneva.org/ar/news-media/news/2021/10/access-healthy-environment-declared-human-right-un-rights-council
[3] UN General Assembly. Resolution 76/300, The human right to a clean, healthy and sustainable environment. A/RES/76/300, 28 July 2022 (161 votes in favour, none against, 8 abstentions). https://digitallibrary.un.org/record/3982659

yaxshilashni ham ko‘rsatadi, ammo atrof-muhitga alohida huquq belgilamaydi.[4] Shu sababli asosiy rivojlanish mintaqaviy darajada kechdi.

1998-yilgi Orxus konvensiyasi bu sohadagi eng mashhur hujjatlardan biri. U har bir insonning, hozirgi va kelajak avlod vakillarining, sog‘lig‘i va farovonligi uchun yetarli bo‘lgan muhitda yashash huquqini himoya qilishga hissa qo‘shishni maqsad qiladi. Buning uchun konvensiya uchta kafolatni belgilaydi: ekologik ma’lumotga kirish, qarorlar qabul qilishda ishtirok etish va sudga murojaat qilish.[5] Demak, u ko‘proq protsessual huquqlar orqali ishlaydi. Lotin Amerikasi va Karib havzasida 2018-yilda qabul qilingan Eskasu kelishuvi (Escazú) shu yo‘nalishni davom ettirdi. U 2021-yil 22-aprelda kuchga kirgan va sog‘lom atrof-muhitda yashash huquqini himoya qilishga qaratilgan.[6] Afrikada 1981-yilgi Banjul xartiyasining 24-moddasi barcha xalqlarning o‘z rivojlanishiga qulay bo‘lgan umumiy qoniqarli muhitga huquqini mustahkamlaydi. Bu moddaga birinchi marta SERAC Nigeriyaga qarshi ishida (2001) Afrika komissiyasi mazmun berdi.[7] Amerikaaro tizimda esa 1988-yilgi San-Salvador protokolining 11-moddasi har kimning sog‘lom muhitda yashash huquqini nazarda tutadi.[8] Yevropa inson huquqlari konvensiyasida bunday alohida modda yo‘q, shuning uchun bu huquq Yevropada sud talqini orqali himoyalanadi.

Xalqaro sud amaliyoti

Sud amaliyoti bu huquqning mazmunini aniqlashda muhim rol o‘ynamoqda. Amerikaaro inson huquqlari sudi 2017-yil noyabrdagi 23/17-sonli maslahat xulosasida

[4] International Covenant on Economic, Social and Cultural Rights, 16 December 1966, Art. 12(2)(b). United Nations Treaty Series, vol. 993, p. 3.
[5] Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, Aarhus, 25 June 1998, Art. 1. United Nations Treaty Series, vol. 2161, No. I-37770.
[6] Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean (Escazú Agreement), Escazú, 4 March 2018; entered into force on 22 April 2021. https://repositorio.cepal.org/bitstream/handle/11362/43583/1/S1800428_en.pdf
[7] African Charter on Human and Peoples’ Rights, 27 June 1981, Art. 24; African Commission on Human and Peoples’ Rights. Social and Economic Rights Action Center and Center for Economic and Social Rights v. Nigeria, Communication No. 155/96 (2001).
[8] Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (Protocol of San Salvador), 17 November 1988, Art. 11(1).

sog‘lom atrof-muhit huquqini Amerika konvensiyasining 26-moddasi asosida mustaqil huquq sifatida tan oldi. 2025-yil 3-iyuldagi 32/25-sonli xulosada esa sog‘lom iqlim huquqini ham alohida ajratib ko‘rsatdi.[9] Yevropa inson huquqlari sudi 2024-yil 9-aprelda «KlimaSeniorinnen» ishida Konvensiyaning 8-moddasi shaxsning iqlim o‘zgarishining jiddiy salbiy oqibatlaridan davlat organlari tomonidan samarali himoyalanish huquqini ham o‘z ichiga olishini bildirdi va Shveytsariya bu majburiyatni bajarmaganini aniqladi.[10] Eng muhim qadam Xalqaro sudning 2025-yil 23-iyuldagi maslahat xulosasi bo‘ldi. Sud toza, sog‘lom va barqaror atrof-muhit hayot huquqi, sog‘liq huquqi va munosib turmush darajasi kabi ko‘plab huquqlardan foydalanishning old sharti ekanini, shu sababli bu huquq boshqa inson huquqlaridan foydalanish uchun zarur ekanini ta’kidladi. Shu bilan birga, tahlilchilar xulosada huquqning mazmuni batafsil ochib berilmaganini qayd etadi.[11]

Asosiy muammolar

Birinchi muammo, huquqning mazmuni va huquqiy maqomi hali bahsli. BMT Bosh Assambleyasida bir qator delegatsiyalar bu huquqning mazmuni va ko‘lami bo‘yicha umumiy kelishilgan tushuncha yo‘qligini ta’kidladi. Rossiya vakili huquqni faqat xalqaro shartnomalarda tan olingandan keyingina huquqiy deb atash mumkinligini bildirdi, Pokiston esa rezolyutsiyani huquqiy tasdiq emas, siyosiy matn deb atadi.[12]

Ikkinchi muammo, majburiy kuchga ega universal hujjatning yo‘qligi. Rezolyutsiyalar siyosiy ahamiyatga ega, lekin davlatlarni yuridik jihatdan bog‘lamaydi.

[9] Inter-American Court of Human Rights. Advisory Opinion OC-23/17, The Environment and Human Rights, 15 November 2017; Advisory Opinion OC-32/25, Climate Emergency and Human Rights, 3 July 2025.
[10] European Court of Human Rights (Grand Chamber). Verein KlimaSeniorinnen Schweiz and Others v. Switzerland, application no. 53600/20, judgment of 9 April 2024.
[11] International Court of Justice. Obligations of States in Respect of Climate Change, Advisory Opinion of 23 July 2025, paras 387–393. https://www.icj-cij.org/sites/default/files/case-related/187/187-20250723-adv-01-00-en.pdf; see also Sabin Center for Climate Change Law, Columbia Law School. World’s Highest Court Embraces the Right to a Healthy Environment, 29 July 2025. https://blogs.law.columbia.edu/climatechange/2025/07/29/worlds-highest-court-embraces-the-right-to-a-healthy-environment
[12] IISD SDG Knowledge Hub. UNGA Recognizes Human Right to Clean, Healthy, and Sustainable Environment, 2022. https://sdg.iisd.org/news/unga-recognizes-human-right-to-clean-healthy-and-sustainable-environment/

Sudlarning maslahat xulosalari ham majburiy emas, garchi huquqning qanday talqin qilinishini ko‘rsatsa-da.

Uchinchi muammo, himoyaning notekisligi. Afrika va Amerikada huquq shartnomalarda mustahkamlangan, Yevropada u asosan sud talqini orqali himoyalanadi, Osiyoda esa mintaqaviy inson huquqlari sudi mavjud emas. Natijada bir xil huquqning himoya darajasi odamning yashash joyiga bog‘liq bo‘lib qoladi.

O‘zbekiston uchun ahamiyati va takliflar

O‘zbekistonda bu huquq konstitutsiya darajasida mustahkamlangan. Konstitutsiyaning 49-moddasiga ko‘ra, har kim qulay atrof-muhitga va uning holati haqida ishonchli ma’lumotga ega bo‘lish huquqiga ega. Davlat esa Orol bo‘yining ekologik tizimini himoya qilish va tiklash, hududni ijtimoiy-iqtisodiy rivojlantirish bo‘yicha chora ko‘radi.[13] Shuni ham qayd etish kerakki, Konstitutsiyada «qulay atrof-muhit» iborasi ishlatilgan, BMT rezolyutsiyalarida esa «toza, sog‘lom va barqaror atrof-muhit» deyiladi. Amaliyotda bu iboralarni o‘zaro moslashtirib talqin qilishga to‘g‘ri keladi.

2025-yilda O‘zbekiston Orxus konvensiyasiga qo‘shildi: qo‘shilish hujjati 25-martda topshirildi, konvensiya mamlakat uchun 23-iyundan kuchga kirdi.[14] Shu yili ekologik ekspertiza, atrof-muhitga ta’sirni baholash va strategik ekologik baholash to‘g‘risidagi qonun ham qabul qilindi. Unda ta’sirni baholash birinchi marta qonun darajasida mustahkamlandi.[15] Amaliy qiyinchiliklarga mahalliy olimlar ham e’tibor qaratmoqda. D. Nodirbekova Orxus konvensiyasini joriy etish muammolarini tahlil qilib, ekologik ma’lumotni mustaqil huquqiy kategoriya sifatida rivojlantirish, davlat

[13] Constitution of the Republic of Uzbekistan (2023 edition), Art. 49. https://gov.uz/en/eco/news/view/25454
[14] UN Secretary-General (depositary). Aarhus Convention. Uzbekistan: Accession. Depositary Notification C.N.152.2025.TREATIES-XXVII.13, 25 March 2025. https://treaties.un.org/doc/Publication/CN/2025/CN.152.2025-Eng.pdf
[15] Official portal of the Republic of Uzbekistan (gov.uz). Uzbekistan Presented Measures to Strengthen Capacity in Environmental Governance and the Implementation of the Aarhus Convention Principles, 25 June 2026. https://gov.uz/en/ecoekspertiza/news/view/183902

organlari uni o‘z tashabbusi bilan ochiq e’lon qilishi hamda sud va ma’muriy himoya mexanizmlarini kuchaytirish zarurligini ko‘rsatadi.[16] Bu huquqning amaliy ahamiyati ayniqsa Orol bo‘yida seziladi. Ekologiya vaziri 2025-yilda dengizning qurishi mintaqadagi qariyb bir million kishining salomatligi va tirikchiligiga xavf solayotganini ta’kidlagan. 2021-yil 18-mayda esa BMT Bosh Assambleyasi O‘zbekiston tashabbusi bilan Orol bo‘yini ekologik innovatsiyalar va texnologiyalar zonasi deb e’lon qildi.[17]

Shundan kelib chiqib, quyidagilar tavsiya etiladi: qonunchilikda toza, sog‘lom va barqaror atrof-muhit tushunchasini aniqlashtirish; Orxus konvensiyasi talablarini sud va ma’muriy amaliyotda to‘liq joriy etish; xalqaro va mintaqaviy sudlar amaliyotini milliy huquqni qo‘llashda inobatga olish.

Xulosa

Tadqiqot shuni ko‘rsatdiki, toza, sog‘lom va barqaror atrof-muhitga bo‘lgan huquq so‘nggi yillarda xalqaro darajada tan olindi. BMT Inson huquqlari kengashi va Bosh Assambleyasining rezolyutsiyalari, mintaqaviy shartnomalar hamda sud amaliyoti bu huquqning huquqiy asoslarini mustahkamlamoqda. Xalqaro sudning 2025-yilgi maslahat xulosasi bu jarayonda alohida ahamiyatga ega.

Shu bilan birga, huquqning mazmuni bahsli, universal majburiy hujjat yo‘q, himoya darajasi esa mintaqalar bo‘yicha farq qiladi. O‘zbekiston uchun Konstitutsiyaning 49-moddasi va Orxus konvensiyasi muhim tayanch bo‘lib xizmat qiladi. Bu huquqni amalda ta’minlash uchun milliy qonunchilikda tushunchalarni aniqlashtirish, ekologik ma’lumotga kirish va sudga murojaat qilish mexanizmlarini kuchaytirish hamda xalqaro sud amaliyotini inobatga olish maqsadga muvofiq.

[16] Nodirbekova, D.A. The Right to Access Environmental Information: Problems of Implementing the Aarhus Convention in Uzbekistan. TSUL Legal Report, 2026, vol. 7, no. 2, pp. 12–21. https://legalreport.tsul.uz/index.php/legalreport/article/view/117

[17] Ministry of Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan. Uzbekistan Highlights Climate Efforts at the Third UN Conference, 7 August 2025. https://gov.uz/en/eco/news/view/76248; UN General Assembly. Resolution 75/278, Declaring the Aral Sea region a zone of ecological innovations and technologies. A/RES/75/278, 18 May 2021.

Foydalanilgan adabiyotlar

1. Afrika birligi tashkiloti (1981) “African Charter on Human and Peoples’ Rights (Banjul Charter)”. Nayrobi, 1981-yil 27-iyun.

2. Afrika inson va xalqlar huquqlari komissiyasi (2001) “Social and Economic Rights Action Center and Center for Economic and Social Rights v. Nigeria”. Communication No. 155/96.

3. Amerika davlatlari tashkiloti (1988) “Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (Protocol of San Salvador)”. San-Salvador, 1988-yil 17-noyabr.

4. Amerikaaro inson huquqlari sudi (2017) “Advisory Opinion OC-23/17: The Environment and Human Rights”. 2017-yil 15-noyabr.

5. Amerikaaro inson huquqlari sudi (2025) “Advisory Opinion OC-32/25: Climate Emergency and Human Rights”. 2025-yil 3-iyul.

6. Birlashgan Millatlar Tashkiloti (1966) “International Covenant on Economic, Social and Cultural Rights”. Nyu-York, 1966-yil 16-dekabr. United Nations Treaty Series, vol. 993, p. 3.

7. Birlashgan Millatlar Tashkiloti (1972) “Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration)”. Stokgolm, 1972-yil 5–16-iyun. UN Doc. A/CONF.48/14/Rev.1.

8. BMT Bosh Assambleyasi (2021) “Resolution 75/278: Declaring the Aral Sea region a zone of ecological innovations and technologies”. A/RES/75/278, 18-may. https://digitallibrary.un.org/record/3928288

9. BMT Bosh Assambleyasi (2022) “Resolution 76/300: The human right to a clean, healthy and sustainable environment”. A/RES/76/300, 28-iyul. https://digitallibrary.un.org/record/3982659

10. BMT Bosh kotibi (2025) “Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, Aarhus, 25 June 1998. Uzbekistan: Accession”. Depozitariy bildirishnomasi C.N.152.2025.TREATIES-XXVII.13, 25-mart. https://treaties.un.org/doc/Publication/CN/2025/CN.152.2025-Eng.pdf

11. BMT Inson huquqlari kengashi (2021) “Resolution 48/13: The human right to a clean, healthy and sustainable environment”. A/HRC/RES/48/13, 8-oktyabr. https://www.ungeneva.org/ar/news-media/news/2021/10/access-healthy-environment-declared-human-right-un-rights-council

12. BMT Yevropa iqtisodiy komissiyasi (1998) “Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters”. Orxus, 1998-yil 25-iyun. United Nations Treaty Series, vol. 2161, No. I-37770.

13. IISD SDG Knowledge Hub (2022) “UNGA Recognizes Human Right to Clean, Healthy, and Sustainable Environment”. Manzil: https://sdg.iisd.org/news/unga-recognizes-human-right-to-clean-healthy-and-sustainable-environment/

14. Latin Amerikasi va Karib havzasi davlatlari (2018) “Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean (Escazú Agreement)”. Eskasu, 2018-yil 4-mart. https://repositorio.cepal.org/bitstream/handle/11362/43583/1/S1800428_en.pdf

15. Nodirbekova, D.A. (2026) “The Right to Access Environmental Information: Problems of Implementing the Aarhus Convention in Uzbekistan”, TSUL Legal Report, 7(2), 12–21-betlar. https://legalreport.tsul.uz/index.php/legalreport/article/view/117

16. O‘zbekiston Respublikasi (2023) “O‘zbekiston Respublikasi Konstitutsiyasi (2023-yil tahriri)”, 49-modda.

17. O‘zbekiston Respublikasi Ekologiya, atrof-muhitni muhofaza qilish va iqlim o‘zgarishi vazirligi (2025) “Uzbekistan Highlights Climate Efforts at the Third UN Conference”, 7-avgust. Manzil: https://gov.uz/en/eco/news/view/76248

18. O‘zbekiston Respublikasi rasmiy davlat portali (2026) “Uzbekistan Presented Measures to Strengthen Capacity in Environmental Governance and the Implementation of the Aarhus Convention Principles”, 25-iyun. Manzil: https://gov.uz/en/ecoekspertiza/news/view/183902

19. Sabin Center for Climate Change Law (2025) “World’s Highest Court Embraces the Right to a Healthy Environment”, Columbia Law School Climate Law Blog, 29-iyul.

https://blogs.law.columbia.edu/climatechange/2025/07/29/worlds-highest-court-embraces-the-right-to-a-healthy-environment

20. Xalqaro sud (2025) “Obligations of States in Respect of Climate Change, Advisory Opinion of 23 July 2025”. Gaaga: ICJ. https://www.icj-cij.org/sites/default/files/case-related/187/187-20250723-adv-01-00-en.pdf

21. Yevropa inson huquqlari sudi (2024) “Verein KlimaSeniorinnen Schweiz and Others v. Switzerland”. Ariza No. 53600/20, Katta palata hukmi, 2024-yil 9-aprel.

THE IMAGE OF HAKIMS (SAGES) IN THE "KHAMSA" EPICS

Madina Tolibova Muzaffar qizi

Annotation

This thesis examines the functional role of the hakim (sage) figures in the five epics comprising Alisher Navoiy's "Khamsa". The study analyzes the roles of such hakims as Suqrot (Socrates), Arastu (Aristotle), Aflotun (Plato), Buzurg Ummid, Suhaylo, Balinos, Buqrot (Hippocrates), Jomosb, Luqmoni Hakim, and others in the plot development of the epics "Hayrat ul-abror", "Farhod va Shirin", "Layli va Majnun", "Sab'ai sayyor", and "Saddi Iskandariy". Based on the frequency of mention (statistics) of the hakims in the epics, their level of participation in each doston (epic) has been determined. As a result of the analysis, it has been scientifically proven that the hakims are not merely artistic copies of historical figures in the plot, but active participants who ensure the evolution of the characters, alter the course of events, and resolve complex conflicts.

Keywords

Alisher Navoiy, "Khamsa", image of hakims, wisdom (hiradmandlik), frequency, Suqrot (Socrates), Arastu (Aristotle), artistic-poetic expression, Sufism, doston (epic).

“XAMSA” DOSTONLARIDA HAKIMLAR SIYMOSI

Madina Tolibova Muzaffar qizi

Annotatsiya: Ushbu tezisda Alisher Navoiyning “Xamsa” asari tarkibiga kiruvchi besh dostonida hakimlar siymosining vazifaviy o‘rni o‘rganilgan. Tadqiqotda “Hayrat ul-abror”, “Farhod va Shirin”, “Layli va Majnun”, “Sab’ai sayyor” va “Saddi Iskandariy” dostonlarida uchrovchi Suqrot, Arastu, Aflotun, Buzurg Ummid, Suhaylo, Balinos, Buqrot, Jomosb, Luqmoni Hakim va boshqa hakimlarning syujet taraqqiyotidagi roli tahlil qilingan. Hakimlarning dostonlardagi tilga olinish chastotasi (statistikasi) asosida ularning har bir dostondagi ishtirok darajasi aniqlangan. Tahlil natijasida hakimlar syujetda shunchaki tarixiy shaxslarning badiiy nusxasi emas, balki qahramonlar

evolyutsiyasini ta’minlovchi, voqealar oqimini o‘zgartiruvchi va murakkab tugunlarni yechuvchi faol ishtirokchilar sifatida namoyon bo‘lishi ilmiy dalillangan.

Kalit so‘zlar: Alisher Navoiy, “Xamsa”, hakimlar siymosi, xiradmandlik, tasavvuf, Suqrot, Arastu, badiiy-poetik ifoda, chastota, doston.

Kirish: Alisher Navoiyning “Xamsa” asari o‘zbek mumtoz adabiyotining cho‘qqisi sifatida nafaqat badiiy qiymati, balki falsafiy-irfoniy mazmuni bilan ham ajralib turadi. Asar tarkibidagi dostonlarda donishmandlar, hakimlar va xiradmandlar siymosining muhim o‘rni bor. Ular syujet rivojida passiv kuzatuvchi emas, balki voqealarni harakatlantiruvchi, qahramonlarni ma’naviy kamolotga yetaklovchi, murakkab tilsimlarni yechuvchi va davlat boshqaruvida adolatni ta’minlovchi faol ishtirokchilar sifatida namoyon bo‘ladi.

Sharq mumtoz adabiyotida “xirad” (hikmat) tushunchasi shunchaki dunyoviy aql-zakovatni emas, balki ilohiy ma’rifat bilan nurlangan “aqli kull”ni anglatadi. Hakim obrazining ontologik va gnoseologik mohiyati Firdavsiyning “Shohnoma”sidagi davlat arbobi (Buzurjmehr) maqomidan boshlanib, Nizomiy, Dehlaviy va Jomiy dostonlarida koinot sirlarini anglagan faylasuflar darajasiga ko‘tarilgan. Navoiy esa bu an’anani davom ettirgan holda hakimlarni ham amaliyotchi olim (muhandis, tabib), ham davlat maslahatchisi, ham nafsni yenggan tasavvufiy pir (murshidi komil) darajasida umumlashtirdi.

Hakimlarning syujetdagi vazifaviy o‘rni va chastotasi

Alisher Navoiy “Xamsa”si tarkibidagi har bir doston o‘zining g‘oyaviy yo‘nalishi va janr xususiyatiga ko‘ra hakimlarning ishtirokini turlicha taqozo qiladi. Hakimlarning asar syujetidagi faolligi va ko‘lamini ularning dostonlardagi tilga olinish chastotasi orqali ko‘rish mumkin:

1-jadval

“Xamsa” dostonlarida hakimlarning tilga olinish chastotasi

№	Hakim nomi	“Hayrat ul-abror”	“Farhod va Shirin”	“Layli va Majnun”	“Sab’ai sayyor”	“Saddi Iskandariy”	Umumiy hisob
1.	Suqrot	0	23	0	0	14	37
2.	Arastu	0	2	0	0	32	34
3.	Aflotun/Filotun	0	1	1	0	15	17
4.	Buzurg Ummid	0	9	0	0	0	9
5.	Suhaylo	0	8	0	0	0	8
6.	Balinos	0	0	0	0	6	6
7.	Buqrot	0	2	0	0	4	6
8.	Jomosb	0	2	0	2	2	6
9.	Luqmon	0	1	0	1	4	6
10.	Hurmus	0	0	0	0	3	3
11.	Arashmidus	0	0	0	0	2	2
12.	Paylaqus	0	0	0	2	0	2
13.	Asqalinus	0	0	0	0	1	1
14.	Farfurnus	0	0	0	0	1	1
15.	Faysog‘urs	0	0	0	0	1	1
16.	Naqumohis	0	0	0	0	1	1
17.	Qilinmun	0	0	0	0	1	1
18.	Volis	0	0	0	0	1	1
19.	Shaminos	0	0	0	0	1	1

Izoh: Statistik ma’lumotlar “Xamsa”ning 2006-yilgi nashri (Porso Shamsiyev ilmiy-tanqidiy matni, nashrga tayyorlovchi Vahob Rahmonov) asosida tuzildi.

Jadval ma’lumotlariga ko‘ra, hakimlar siymosi “Saddi Iskandariy” (89 marta) va “Farhod va Shirin” (51 marta) dostonlarida eng ko‘p tilga olingan. “Hayrat ul-abror”

dostonida esa aniq ismli hakimlar syujet qahramoni sifatida ishtirok etmaydi. Bu holat har bir dostonning g‘oyaviy yo‘nalishi bilan bog‘liq.

Navoiy dostonlarida hakimlar, asosan, ikki yirik funksiyani ado etadi: bir tomondan qahramonlarni ma’naviy kamolotga yetaklovchi tasavvufiy pir (murshid) maqomida kelsa, ikkinchi tomondan davlat boshqaruvida adolatni ta’minlovchi siyosiy maslahatchi hamda murakkab tilsimlarni yechuvchi qomusiy olim (muhandis, tabib, munajjim) sifatida gavdalanadi.

“Hayrat ul-abror” va “Layli va Majnun” dostonlarida hakimlar

“Hayrat ul-abror” dostoni falsafiy-ta’limiy yo‘nalishda yozilgan bo‘lib, unda aniq ismli hakimlar (Suqrot, Arastu, Aflotun kabi) syujet qahramoni sifatida ishtirok etmaydi. Asarning bosh g‘oyasi islomiy axloq va komillik bo‘lgani uchun Navoiy ko‘proq umumiy “hakim”, “hikmat” tushunchasidan yoki shayxlar, pirlar siymosidan foydalanadi. A.Qayumov ta’kidlaganidek: “Navoiyning “Hayrat ul-abror” dostonida lirik qahramonga aynan ‘xirad piri’ to‘g‘ri yo‘l ko‘rsatadi. Xirad piri obrazi shoirning tafakkuridir”. Demak, bu dostonda xiradmandlik aniq bir hakim siymosi sifatida bevosita uchramasa-da, hakimlik ruhi asar mazmuniga to‘la singdirib yuborilgan.

“Layli va Majnun” dostonida ham tarixiy hakimlar siujet doirasidan chekinib, zarur o‘rinlardagina badiiy-estetik mezon sifatida namoyon bo‘ladi. Asar sof irfoniy ishq va ruhiy iztiroblar tahliliga bag‘ishlangani uchun “hakim” tushunchasi o‘zining falsafiy maqomini yo‘qotib, ko‘proq jismoniy dardlarga davo izlovchi oddiy tabib ma’nosiga ko‘chadi. Majnunni davolashga urgan tabiblar ilohiy ishq dardi oldida insoniy ilm – tabobatning ojizligini ko‘rsatib beradi. Jadvalda ko‘rsatilganidek, Suqrot, Arastu va Aflotun nomlari mazkur asarda faqat bir martadan tilga olingan.

“Farhod va Shirin” dostonidagi hakimlar siymosi

Bu dostonda hakimlar obrazi g‘or ichida yashovchi, butun dunyo lazzatlaridan voz kechgan, koinot sirlarini o‘zida jamlagan “xirad piri” sifatida tasvirlanadi. Suqrot,

Buzurg Ummid va Suhaylo kabi hakimlar syujetda bevosita ishtirok etadi.

Suqrot obrazi Navoiy dostonlarida eng ko‘p murojaat qilingan siymolardan biridir (37 marta). “Farhod va Shirin”da u g‘or ichida uzlatga chekingan zohid, ayni paytda koinot sirlaridan ogoh bo‘lgan pir sifatida gavdalanadi. U Farhodga nafaqat tilsimlarni yechish yo‘lini, balki ilohiy ishq mohiyatini ham tushuntiradi — “murshidi komil” darajasiga ko‘tarilgan:

Erur g‘or ichra Suqroti yagona, Dema Suqrot, Buqroti zamona.

Shoir dastlab g‘ordagi donishmandni “Suqroti yagona” deb ataydi, so‘ng bu ta’rifni yetarli bilmay: “Yo‘q, uni faqat Suqrot dema, u o‘z zamonasining Buqrotidir”, deydi. Suqrot aql, mantiq va ruhiyat faylasufi, Buqrot esa tabobat ilmining asoschisi sifatida har ikki sohada komil bo‘lgan mutlaq hakimni tasvir etadi.

Suhaylo obrazi tilsim ko‘zgu sirini bevosita ochib bermaydi, sirni Suqrot hakim bilishini aytadi. Farhodga uch xatardan o‘tish maslahatini beradi, Samandar yog‘ini tutqazadi, bilmaganlarini o‘rgatadi. Bu obraz Farhodning birinchi homiysi, ilk piridir.

Buzurg Ummid – Xusrav Parvizning bosh vaziri, adolatli davlat boshqaruvida shohga to‘g‘ri yo‘l ko‘rsatuvchi dono maslahatchi. Bu o‘rinda Navoiyning ijtimoiy utopiyasi – jamiyat farovonligi adolatli shoh va dono hakim hamkorligiga bog‘liq ekani badiiy in’ikos topadi.

“Sab’ai sayyor” va “Saddi Iskandariy” dostonlarida hakimlar

“Sab’ai sayyor” dostonida hakimlar bevosita syujet qahramoni sifatida ishtirok etadi. Bahrom Gur dardi ishqdan ekanini aniqlab, uning uchun yetti qasr qurishni maslahat bergan 400 hakim syujet rivojida muhim o‘rin egallaydi. **Paylaqus hakim** Sa’dning tushini ta’bir qilib, kelajagini aytadi hamda “Jomosbnoma” sirlarini ochadi. **Jomosb** kitobi “Farhod va Shirin” va “Sab’ai sayyor” dostonlari orasida g‘oyaviy ko‘prik vazifasini o‘taydi.

“Saddi Iskandariy” dostoni “Xamsa”ning hakimlar siymosi eng keng ko‘lamda namoyon bo‘ladigan qismidir (89 marta). **Arastu obrazi** Iskandarning bosh vaziri, ustozi va davlatning asosiy maslahatchisi sifatida namoyon bo‘ladi. Iskandar taxtga chiqqanidan to umrining oxirigacha Arastuning o‘gitlariga amal qiladi. Arastu shunchaki tarixiy faylasuf emas, balki Iskandarning butun hayotini belgilab beruvchi markaziy ma’naviy qutbdir.

Arashmidus hakim – sirakuzalik buyuk matematik va muhandis Arximedning sharqoni nomi. **Naqumohis** – Aristotelning otasi Nikomaxning sharqona nomi bo‘lib, u Iskandarga bolaligidanoq ta’lim va tarbiya bergan. LVI bobda Iskandar huzurida Aflotun, Suqrot, Arastu, Buqrot, Hurmus, Balinos, Arashmidus kabi donishmandlar ishtiroki tasvirlangan.

E’tiborli jihati shundaki, donishmandlar qayerda va qanday holatda tasvirlanishidan qat’i nazar – xoh g‘orlarda uzlatga chekingan holatda (Suqrot, Paylaqus, Suhaylo), xoh shoh saroyida maslahatchi maqomida (Arastu, Aflotun, Buzurg Ummid) – ularning funksional ahamiyati zarracha o‘zgarmaydi.

Xulosa

1. Hakimlar asar syujetida shunchaki tarixiy shaxslarning badiiy nusxasi emas, balki qahramonlar evolyutsiyasini ta’minlovchi, voqealar oqimini o‘zgartiruvchi va murakkab tugunlarni yechuvchi faol ishtirokchilar sifatida namoyon bo‘ladi.

2. Ularning dostonlardagi ishtiroki asarning g‘oyaviy yo‘nalishiga qarab o‘zgaradi: “Farhod va Shirin”, “Sab’ai sayyor” va “Saddi Iskandariy”da ular bevosita syujet qahramoni bo‘lib, voqealar rivo‘iga ta’sir ko‘rsatsa, “Hayrat ul-abror” va “Layli va Majnun”da ko‘proq badiiy-estetik mezon vazifasini bajaradi.

3. Hakimlarning tilga olinish chastotasi bo‘yicha “Saddi Iskandariy” (89 marta) va “Farhod va Shirin” (51 marta) dostonlari yetakchi bo‘lib, “Hayrat ul-abror”

dostonida aniq ismli hakimlar uchramaydi. Bu ko‘rsatgich har bir dostonning g‘oyaviy-falsafiy yo‘nalishini aks ettiradi.

4. Navoiy uchun hakimlarning tarixiy realligi emas, balki asar bosh qahramoni ruhiyatidagi ziddiyatlarni hal qilish, ma’naviy kamoloti toptirishdagi vazifasi muhimroqdir.

Foydalanilgan adabiyotlar

1. Navoiy A. Mukammal asarlar to‘plami. 20 jildli. – Toshkent: Fan, 1987–2003.

2. Navoiy A. Xamsa. – Toshkent: G‘afur G‘ulom nomidagi nashriyot-matbaa ijodiy uyi, 2006. (Porso Shamsiyev ilmiy-tanqidiy matni, nashrga tayyorlovchi Vahob Rahmonov).

3. Qayumov A. Navoiyshunoslikning yangi qatlamlari. – Toshkent: Fan, 1987.

4. Komilov N. Navoiy tasavvufi. – Toshkent: Fan, 1996.

5. Mamadaliyeva Z.U. Alisher Navoiy “Xamsa”sidagi ramziy va majoziy obrazlar sistemasi. Filol. fan. d-ri (DSc) … diss. – Toshkent: O‘zMU, 2025. – 260 b.

METHODOLOGICAL FEATURES OF DEVELOPING FUNCTIONAL COMPETENCE IN FUTURE TEACHERS BASED ON AN ACMEOLOGICAL APPROACH

Kunnazarova Bibikhadicha Babanazarovna

Doctoral Student, Nukus State Pedagogical Institute named after Ajiniyaz

Abstract

This article examines the methodological features and pedagogical potential of developing functional competence in future teachers based on an acmeological approach. It analyzes the stages of achieving professional excellence, self-development, and problem-solving skills in practical activities among prospective educators. Furthermore, practical and methodological recommendations are provided on integrating acmeological technologies into higher pedagogical education, as well as enhancing students' functional literacy and competence.

Keywords

acmeology, acmeological approach, functional competence, future teachers, professional mastery, pedagogical mastery, self-development, reflective skills, methodological training.

AKMEOLOGIK YONDASHUV ASOSIDA BO‘LAJAK O‘QITUVCHILARDA FUNKSIONAL KOMPETENTLIKNI RIVOJLANTIRISHNING METODIK XUSUSIYATLARI

Kunnazarova Bibixadicha Babanazarovna

Ajiniyoz nomidagi Nukus davlat pedagogika instituti doktoranti

Annotatsiya. Ushbu maqolada akmeologik yondashuv asosida bo‘lajak o‘qituvchilarda funksional kompetentlikni rivojlantirishning metodik xususiyatlari va pedagogik imkoniyatlari yoritilgan. Bo‘lajak o‘qituvchilarning kasbiy maxoratga erishish bosqichlari, o‘z-o‘zini rivojlantirish va amaliy faoliyatda muammoli vaziyatlarni hal etish

ko‘nikmalari tahlil qilingan. Shuningdek, oliy pedagogik ta’lim jarayonida akmeologik texnologiyalardan foydalanish hamda talabalarning funksional savodxonligi va kompetentligini oshirish bo‘yicha amaliy va metodik tavsiyalar ishlab chiqilgan.

Kalit so‘zlar: akmeologiya, akmeologik yondashuv, funksional kompetentlik, bo‘lajak o‘qituvchilar, kasbiy maxorat, pedagogik mahorat, o‘z-o‘zini rivojlantirish, refleksiv ko‘nikmalar, metodik tayyorgarlik.

KIRISH

Zamonaviy ta’lim tizimining asosiy vazifalaridan biri nafaqat nazariy bilimlarga ega, balki ushbu bilimlarni o‘zgaruvchan pedagogik jarayonda samarli qo‘llay oladigan, moslashuvchan va yuqori darajadagi kasbiy mahoratga intiluvchi mutassis xodimlarni tayyorlashdan iborat. Bugungi kunda bo‘lajak o‘qituvchilarning funksional kompetentligini shakllantirish va ularni kasbiy kamolot (akme) poygachalariga yo‘naltirish oliy pedagogik ta’limning muhim strategik maqsadi hisoblanadi.

Akmeologik yondashuv insonning kasbiy faoliyatida va shaxsiy rivojlanishida eng yuqori natijalarga (cho‘qqiga) erishish qonuniyatlarini o‘rganadi. An’anaviy ta’lim modellari ko‘pincha bilim berish bilan cheklanib qolayotgan bir sharoitda, akmeologik yondashuv bo‘lajak o‘qituvchining ichki potensialini va o‘z-o‘zini rivojlantirish mexanizmlarini harakatga keltirishga xizmat qiladi. Shu sababli, bo‘lajak o‘qituvchilarda funksional kompetentlikni akmeologik tamoyillar asosida rivojlantirishning metodik xususiyatlarini ilmiy va amaliy jihatdan tadqiq etish alohida dolzarblik kasb etadi.

ASOSIY QISM

Akmeologik yondashuv va funksional kompetentlikning nazariy-metodologik mohiyati. Pedagogikada akmeologik yondashuv bo‘lajak o‘qituvchini o‘z kasbining ustasi, ijodkor va uzluksiz o‘z-o‘zini mukammallashtiruvchi shaxs sifatida

shakllantirishga yo‘naltirilgan. Bu yondashuvning markazida talabani shaxsiy va kasbiy kamolot cho‘qqisiga yetaklash duradi.

Funksional kompetentlik esa o‘qituvchining standart va nostandart kasbiy vaziyatlarda nazariy bilimlarni tezkor, aniq va natijador tarzda amaliyotga tatbiq eta olish qobiliyatidir. Bo‘lajak o‘qituvchining funksional kompetentligi tarkibiga quyidagi tarkibiy qismlar kiradi:

- Gnostik (bilimga oid) komponent: pedagogik, psixologik va mutaxassislik bilimlarini chuqur anglash;

- Amaliy-faoliyatli komponent: ta’lim texnologiyalarini qo‘llash, darsni loyihalash va tashkil etish ko‘nikmalari;

- Kommunikativ va konfliktologik komponent: o‘quvchilar, hamkasblar va ota-onalar bilan samarali muloqot o‘rnatish, pedagogik nizolarni konstruktiv hal etish;

- Refleksiv-baholovchi komponent: o‘z faoliyatini ob’ektiv tahlil qilish va o‘zini o‘zi korreksiya qilish (tuzatish) yetukligi.

Bo‘lajak o‘qituvchilarda funksional kompetentlikni rivojlantirishning metodik xususiyatlari. Akmeologik yondashuv asosida funksional kompetentlikni rivojlantirish jarayoni an’anaviy o‘qitish usullaridan o‘zining zamonaviy metodik xususiyatlari bilan ajralib turadi:

- Sub’ekt-sub’ektiv munosabatlarni qaror toptirish: O‘qituvchi va talaba o‘rtasidagi hamkorlik hamda muloqot doirasida talaba bilim oluvchi ob’ektdan o‘z kasbiy rivojlanishining faol sub’ektiga aylanadi.

- Mozaik va muammoli ta’lim texnologiyalarini qo‘llash: Talabalarga real dars jarayonlarida uchrashishi mumkin bo‘lgan kkeys-stadi (case-study), pedagogik sitatsiyalar va muammoli topsiriqlar beriladi. Bu ularning funksional savodxonligi va moslashuvchanligini oshiradi.

- Kasbiy trayektoriyani loyihalash (Akmeogramma): Har bir talaba uchun o‘zining kuchli va kuchsiz taraflarini baholash, kasbiy maqsadi hamda rivojlanish bosqichlarini belgilab beruvchi individual akmeogramma yaratiladi.

- Refleksiyani faollashtirish: Akmeologik o‘qitishning muhim xususiyati bu talabalarning o‘z pedagogik harakatlarini muntazam ravishda tahlil qilib borishidir («Men darsni qanday o‘tdim? Nima uchun ushbu metod samarali bo‘lmadi? Bu vaziyatni yana qanday hal qilish mumkin edi?»).

Akmeologik muhitni tashkil etish va amaliy metodik ishlanmalar. Oliy ta’lim muassasasida akmeologik rivojlantiruvchi muhitni yaratish uchun quyidagi metodik shakllar va vositalardan foydalanish yuqori natija beradi:

- Simulyatsion va mikro-o‘qitish (Microteaching) mashg‘ulotlari: Talabalar o‘z tengdoshlari guruhida mini-darslar o‘tib, ularni videoo‘zgarmalarga oladi va keyinchalik guruh bilan birga tahlil qiladi.

- Pedagogik treninglar va keyslar: Muloqot madaniyati, darsda yuzaga keladigan kelishmovchiliklarni hal etish hamda o‘quvchilarni motivatsiyalash bo‘yicha amaliy situatsion mashqlar o‘tkaziladi.

- Kasbiy portfolio va loyihalar usuli: Talabalarning metodik ishlanmalari, taqdimotlari va tadqiqot natijalarini jamlab boruvchi raqamli portfoliolarni shakllantirish ularning amaliy tayyorgarlik darajasini ko‘rsatib beradi.

XULOSA

Akmeologik yondashuv asosida bo‘lajak o‘qituvchilarda funksional kompetentlikni rivojlantirish bugungi davr ta’limining ustuvor yo‘nalishlaridan biridir. Ushbu yondashuv bo‘lajak pedagoglarda faqatgina nazariy bilimlarni shakllantirib qolmay, ularda o‘z kasbiy faoliyatini doimiy ravishda tahlil qilish, innovatsiyalarga ochiq bo‘lish va yuqori kasbiy natijalarga intilish tuyg‘usini rivojlantiradi.

Metodik nuqtai nazardan amaliy va simulyatsion metodlarni, muammoli keyslarni hamda refleksiv texnologiyalarni ta’lim jarayoniga tizimli joriy etish bo‘lajak o‘qituvchilarning real maktab muhitiga tez va samarali moslashuvini ta’minlaydi. Oliy pedagogik ta’limda akmeologik tamoyillarning qo‘llanilishi sifatli ta’lim kafolati hamda raqobatbardosh kadrlarni tayyorlashning mustahkam poydevori bo‘lib xizmat qiladi.

FOYDALANILGAN ADABIYOTLAR

1. Акмеология. Под общей редакцией доктора психологических наук, профессора, академика РАО А.А.Деркача Учебник. М.: Изд-во РАГС, 2004. - 298 с.

2. Кузьмина, Н. В. Предмет науки акмеологии и фундаментальная теория продуктивности национальной системы образования в свете единого критерия ее качества. АКМЕОЛОГИЯ, № 1, 2005. с. 12-16

3. Xodjayev, B. X. Umumiy pedagogika nazariyasi va amaliyoti. - Toshkent: Sano-standard, 2017. - 416 b.

The metaphysical world in the poetry of Boborahim Mashrab and William Blake

Turayev Jasurbek Qaxorovich
Jasurturaev88@gmail.com
Senior Lecturer at the University of Science and Technology

Abstract

This article provides a comparative analysis of the representation of the metaphysical world in the poetry of Boborahim Mashrab, a prominent representative of classical Uzbek literature, and William Blake, an important figure in English Romantic literature. In the poetic worldviews of both authors, the human aspiration to comprehend the essence of existence beyond the material world, spiritual perfection, the search for divine truth, good and evil, life and eternity occupy an important place. The article also explores the similarities and differences between Mashrab's Sufi and Gnostic perspectives and Blake's Christian-mystical and Romantic worldview.

Keywords

Boborahim Mashrab, William Blake, metaphysics, Sufism, mysticism, spirit, divine truth, symbol, Romanticism, comparative literary studies.

Boborahim Mashrab va Uilyam Bleyk she'riyatida metafizik olam

Turayev Jasurbek Qaxorovich
Jasurturaev88@gmail.com
Fan va texnologiyalar universiteti katta o'qituvchisi

Annotatsiya

Ushbu maqolada o'zbek mumtoz adabiyotining yirik vakili Boborahim Mashrab hamda ingliz romantik adabiyotining muhim namoyandalaridan biri Uilyam Bleyk she'riyatida metafizik olam tasviri qiyosiy jihatdan tahlil qilinadi. Har ikki ijodkorning poetik dunyoqarashida insonning moddiy borliqdan tashqari mavjudlik mohiyatini

anglashga intilishi, ruhiy kamolot, ilohiy haqiqatni izlash, yaxshilik va yomonlik, hayot va abadiyat kabi masalalar muhim o‘rin egallaydi. Shu bilan birga, Mashrabning tasavvufiy-irfoniy qarashlari bilan Bleykning xristian-mistik va romantik dunyoqarashi o‘rtasidagi mushtarak hamda farqli jihatlar ochib beriladi.

Аннотация

В данной статье проводится сравнительный анализ изображения метафизического мира в поэзии Боборахима Машраба, выдающегося представителя классической узбекской литературы, и Уильяма Блейка, одного из значимых представителей английской романтической литературы. В поэтическом мировоззрении обоих авторов важное место занимают стремление человека постичь сущность бытия, выходящего за пределы материального мира, духовное совершенствование, поиск божественной истины, проблемы добра и зла, жизни и вечности. Вместе с тем раскрываются общие и отличительные черты суфийско-ирфанистских взглядов Машраба и христианско-мистического и романтического мировоззрения Блейка.

Kalit so‘zlar: Boborahim Mashrab, Uilyam Bleyk, metafizika, tasavvuf, mistika, ruh, ilohiy haqiqat, ramz, romantizm, qiyosiy adabiyotshunoslik.

Jahon adabiyoti tarixida insonning ko‘zga ko‘rinadigan moddiy olam ortidagi sirli va ma’naviy borliqni anglashga bo‘lgan intilishi turli davr va madaniyatlarda o‘ziga xos badiiy shakllarda namoyon bo‘lgan. Ayniqsa, Sharq tasavvuf adabiyoti hamda G‘arb mistik-romantik she’riyatida metafizik olam tushunchasi muhim poetik hodisa sifatida ko‘zga tashlanadi. Bu jihatdan Boborahim Mashrab va Uilyam Bleyk ijodi alohida qiziqish uyg‘otadi.

Boborahim Mashrab XVII–XVIII asrlar o‘zbek adabiyotining yirik vakili bo‘lib, uning ijodida tasavvufiy tafakkur, ilohiy ishq, ruhiy ozodlik va insonning Haq bilan munosabati asosiy mavzulardan sanaladi. Uilyam Bleyk esa XVIII asr oxiri – XIX asr

boshlaridagi ingliz adabiyotining o‘ziga xos ijodkori bo‘lib, uning she’riyatida inson ruhiyati, ilohiylik, tasavvur, beg‘uborlik va tajriba, ezgulik va yovuzlik kabi qarama-qarshiliklar chuqur falsafiy mazmun kasb etadi. Ularning tarixiy, diniy va madaniy muhitlari bir-biridan keskin farq qilsa-da, har ikki shoir ijodida insonning tashqi olam bilan cheklanib qolmaydigan ruhiy mavjudot sifatidagi tabiati masalasi muhim o‘rin tutadi.

Metafizik olam deganda insonning bevosita hissiy tajribasi bilan idrok etilmaydigan, moddiy borliqdan tashqarida yoki uning chuqur ma’nosi sifatida talqin qilinadigan ruhiy, ilohiy va falsafiy mavjudlik sohasi tushuniladi. Adabiyotda metafizik olam ko‘pincha ramzlar, tushlar, ilohiy obrazlar, ruh, nur, abadiyat, o‘lim va qayta tug‘ilish motivlari orqali ifodalanadi. Mashrab she’riyatida bu olam, avvalo, tasavvufiy tushunchalar orqali namoyon bo‘ladi. Shoir uchun insonning haqiqiy maqsadi moddiy dunyoning o‘tkinchi ne’matlariga bog‘lanib qolish emas, balki ilohiy haqiqatni anglash va unga ruhiy jihatdan yaqinlashishdir. Shu sababli uning she’rlarida dunyoning foniyligi va ilohiy borliqning boqiyligi o‘rtasidagi qarama-qarshilik ko‘p uchraydi. Bleykda esa metafizik olam xristianlik, mistika va romantik tasavvur bilan uyg‘unlashadi. U inson tasavvurini oddiy hayotdan yuqori turuvchi ijodiy va ilohiy kuch sifatida ko‘radi. Uning nazarida inson borliqni faqat aql va sezgi orqali emas, balki tasavvur vositasida ham anglaydi. Demak, Bleyk poetikasida metafizik haqiqatga olib boruvchi asosiy vositalardan biri — insonning ichki ko‘rish qobiliyatidir.

Mashrab she’riyatida ilohiy ishq va ruhiy olam

Mashrab ijodining markazida ishq tushunchasi turadi. Biroq bu ishq oddiy dunyoviy muhabbat chegaralaridan ancha keng bo‘lib, tasavvufiy ma’noda inson ruhining ilohiy manbaga intilishini anglatadi. Shoir uchun ishq insonni mavjudlikning yuzaki qatlamlaridan olib chiqib, Haqiqat sari yetaklovchi kuchdir. Mashrabning lirik qahramoni ko‘pincha dunyoning yolg‘on va o‘tkinchi ekanini anglagan, moddiy

manfaatlardan voz kechishga intilgan va ilohiy haqiqatni izlayotgan shaxs sifatida namoyon bo‘ladi. Bu qahramonning ruhiy yo‘li — tashqi dunyodan ichki olamga, zohirdan botinga, insoniy mavjudlikdan ilohiy haqiqat sari harakatdir. Mashrab she’riyatida may, mastlik, yor, ishq, devonalik kabi obrazlar ham ko‘pincha ramziy mazmun kasb etadi. Masalan, “mastlik” oddiy jismoniy holat emas, balki ilohiy ishqdan sarxush bo‘lish, dunyoviy me’yorlardan ruhiy jihatdan ozod bo‘lish ma’nolarini ifodalashi mumkin. Shu nuqtayi nazardan Mashrabning metafizik olami insonning ichki ruhiy tajribasi bilan chambarchas bog‘liq. Ilohiy haqiqat tashqi olamdagi biror konkret makon emas, balki inson qalbida kashf etiladigan ma’naviy haqiqatdir.

Uilyam Bleyk ijodida ham ko‘rinadigan dunyo va ko‘rinmas ruhiy olam o‘rtasidagi munosabat muhim masalalardan biridir. Shoirning *Songs of Innocence* va *Songs of Experience* to‘plamlarida inson mavjudligining ikki xil holati — beg‘uborlik va tajriba qarama-qarshiligi orqali dunyoning murakkab tabiati ochib beriladi. Bleykning mashhur “The Tyger” she’rida yo‘lbars obrazi oddiy hayvon tasviri doirasidan chiqib, borliqdagi qudrat, sir va yaratuvchilik muammosining ramziga aylanadi. Shoir yo‘lbarsning hayratlanarli va qo‘rqinchli mavjudligini tasvirlash orqali uni yaratgan kuchning mohiyati haqida falsafiy savollar qo‘yadi.

Bleykning metafizik dunyosida Xudo, inson va tabiat o‘rtasidagi munosabat murakkab va ziddiyatli. Shoir borliqni faqat tashqi shakllar yig‘indisi sifatida emas, balki ichki ma’no va ruhiy energiyaga ega bo‘lgan yaxlit mavjudlik sifatida ko‘radi.

Bleyk uchun tasavvur oddiy xayol emas. U insonning mavjudlik sirlarini anglash imkonini beruvchi kuchdir. Shu jihatdan uning poetik tafakkuri romantizmning asosiy tamoyillaridan biri — insonning ichki dunyosi va ijodiy tasavvurini ulug‘lash bilan bog‘lanadi.

Mashrab va Bleyk turli madaniy makonlarga mansub bo‘lsalar-da, ularning she’riyatida bir qator mushtarak jihatlar mavjud. Birinchidan, har ikki shoir moddiy

olamni mutlaq haqiqat sifatida qabul qilmaydi. Mashrab dunyoning foniyligini ta’kidlab, insonni Haq sari intilishga chorlaydi. Bleyk esa ko‘rinadigan borliq ortida ruhiy va ilohiy mazmun mavjudligini ko‘rsatishga intiladi. Ikkinchidan, har ikki ijodkor uchun insonning ichki dunyosi alohida ahamiyatga ega. Mashrabda qalb ilohiy haqiqatni anglash maskani bo‘lsa, Bleykda tasavvur insonning borliqni chuqurroq ko‘rish imkonini beruvchi kuchdir. Uchinchidan, ramziylik har ikki shoir poetikasining muhim xususiyatidir. Mashrabda yor, may, mastlik, ishq kabi timsollar tasavvufiy ma’nolarni ifodalasa, Bleykda qo‘zichoq, yo‘lbars, nur, qorong‘ilik, bolalik va tajriba kabi obrazlar keng falsafiy mazmun kasb etadi. To‘rtinchidan, har ikki ijodkor qarama-qarshiliklardan samarali foydalanadi. Mashrabda foniylik va boqiylik, zohir va botin, dunyo va Haq o‘rtasidagi ziddiyatlar mavjud. Bleykda esa beg‘uborlik va tajriba, yorug‘lik va zulmat, ezgulik va yovuzlik kabi qarama-qarshiliklar markaziy poetik tamoyillardan biriga aylanadi.

Shu bilan birga, Mashrab va Bleykning metafizik qarashlarini aynan bir xil hodisa sifatida baholash to‘g‘ri bo‘lmaydi.

Mashrab metafizik olamni, avvalo, tasavvufiy-irfoniy tafakkur asosida talqin qiladi. Uning poetik dunyosida Haq yagona va mutlaq haqiqat sifatida namoyon bo‘ladi. Insonning ma’naviy yo‘li esa ana shu Haqiqatga yaqinlashish bilan bog‘liq.

Bleykning metafizik dunyoqarashi esa xristian mistikasi, romantik tasavvur va shaxsiy falsafiy qarashlarning murakkab sintezidan tashkil topadi. U yaxshilik va yomonlikni oddiy, biryoqlama kategoriyalar sifatida emas, inson tajribasining murakkab tomonlari sifatida ko‘rib chiqadi. Mashrabning poetik tili ko‘proq tasavvufiy istiloh va ramzlarga tayansa, Bleyk ko‘pincha sodda, obrazli va paradoksal shakllardan foydalanadi. Biroq bu soddalik ostida murakkab falsafiy mazmun yashiringan.

Mashrab va Bleyk ijodini birlashtiradigan eng muhim jihatlardan biri — insonning ilohiy borliq bilan munosabatini badiiy tadqiq etishdir. Mashrab uchun inson ruhiy

jihatdan komillikka intilishi lozim. Uning lirik qahramoni o‘z “men”ini dunyoviy istaklardan xalos etib, ilohiy haqiqatga yaqinlashishga harakat qiladi. Bu jarayon tasavvufdagi ruhiy poklanish va ma’rifat g‘oyalari bilan bog‘liq. Bleykda esa insonning ilohiylik bilan aloqasi ko‘proq tasavvur va ijodkorlik orqali ochiladi. Insonning ichki ko‘rish qobiliyati uning mavjudlik mohiyatini anglashida muhim rol o‘ynaydi. Shu ma’noda Bleyk insonni faqat tabiatning bir qismi emas, balki ma’naviy va ijodiy borliq sifatida tasavvur qiladi. Demak, Mashrabda insonning ilohiylikka intilishi **ishq va ruhiy poklanish** orqali amalga oshsa, Bleykda **tasavvur, ijod va ruhiy anglash** bu jarayonning asosiy vositalaridan biri sifatida namoyon bo‘ladi.

Xulosa

Boborahim Mashrab va Uilyam Bleyk ijodi turli tarixiy, diniy va madaniy muhitlarda shakllangan bo‘lsa-da, ularning she’riyatida insonning ko‘rinadigan olam chegaralaridan tashqaridagi ma’naviy haqiqatni izlash istagi muhim o‘rin tutadi. Mashrab metafizik borliqni tasavvufiy-irfoniy tafakkur asosida talqin qilib, insonni ilohiy ishq va ruhiy kamolot sari yetaklaydi. Bleyk esa metafizik olamni xristian mistikasi, romantik tasavvur va insonning ijodiy ruhiyati bilan bog‘laydi. Har ikki shoir uchun ham borliq faqat ko‘z bilan ko‘riladigan moddiy hodisalardan iborat emas. Uning ortida inson qalbi, ruh, ilohiylik va sirli ma’no bilan bog‘liq chuqur qatlam mavjud. Mashrab bu qatlamni Haqqa yetishish yo‘li sifatida ko‘rsa, Bleyk uni inson tasavvuri va ruhiy idroki orqali kashf etiladigan mavjudlik sohasi sifatida talqin qiladi. Shunday qilib, Mashrab va Bleyk she’riyatidagi metafizik olam ikki xil diniy-falsafiy an’anaga mansub bo‘lsa-da, ularni umumlashtiruvchi asosiy nuqta — insonning o‘z mavjudligi mohiyatini anglash va moddiy dunyo ortidagi oliy haqiqatni izlashidir. Shu jihatdan ularning ijodi Sharq va G‘arb poetik tafakkuridagi ruhiy-falsafiy mushtarakliklarni o‘rganish uchun muhim manba bo‘lib xizmat qiladi.

Foydalanilgan adabiyotlar

1. Mashrab, Boborahim. **Devon**. Toshkent: G‘afur G‘ulom nomidagi Adabiyot va san’at nashriyoti.

2. Blake, William. **Songs of Innocence and of Experience**.

3. Blake, William. **The Complete Poetry and Prose of William Blake**.

4. Komilov, N. **Tasavvuf**. Toshkent: Movarounnahr.

5. Alisher Navoiy va tasavvuf adabiyoti bo‘yicha ilmiy tadqiqotlar.

6. Ingliz romantizmi va Uilyam Bleyk ijodiga bag‘ishlangan adabiyotshunoslik tadqiqotlari.

PEDAGOGICAL POSSIBILITIES OF DEVELOPING AN INDIVIDUAL APPROACH TO STUDENTS BASED ON DIGITAL LEARNING TOOLS

Zayniddinova Nafisa Axmed qizi
Zayniddinovanafisa96@gmail.com
Lecturer at Acharya University

Abstract.

This thesis analyzes the pedagogical potential of developing an individualized approach in the modern educational process by taking into account students' individual characteristics, level of knowledge, educational needs, interests, and pace of learning. It highlights the didactic potential of digital educational tools in providing learning content adapted to students' needs, developing individual learning pathways, monitoring learning activities, and providing timely feedback. Particular attention is paid to the teacher's pedagogical and diagnostic activities, digital competence, and the support of students' independent learning activities through the use of digital technologies. As a result of the study, a pedagogical model for implementing an individualized approach through digital tools is proposed, based on the principle of "diagnosis – planning – adaptation – monitoring – feedback – correction."

Keywords

digital education, individual approach, individual learning trajectory, digital pedagogy, adaptive learning, educational diagnostics, digital competence, e-learning, student engagement, pedagogical technology.

RAQAMLI TA'LIM VOSITALARI ASOSIDA O'QUVCHILARGA INDIVIDUAL YONDASHUVNI SHAKLLANTIRISHNING PEDAGOGIK IMKONIYATLARI

Zayniddinova Nafisa Axmed qizi - Achariya University o'qituvchisi

Annotatsiya. Mazkur tezisda zamonaviy ta’lim jarayonida o‘quvchilarning individual xususiyatlari, bilim darajasi, ta’limiy ehtiyojlari, qiziqishlari va o‘zlashtirish sur’atlarini hisobga olish asosida individual yondashuvni shakllantirishning pedagogik imkoniyatlari tahlil qilinadi. Raqamli ta’lim vositalarining o‘quvchilarga moslashtirilgan ta’lim mazmunini taqdim etish, individual ta’lim trayektoriyasini shakllantirish, o‘quv faoliyatini monitoring qilish va tezkor qayta aloqa berishdagi didaktik imkoniyatlari yoritiladi. Shuningdek, raqamli texnologiyalardan foydalanishda o‘qituvchining pedagogik-diagnostik faoliyati, raqamli kompetensiyasi hamda o‘quvchining mustaqil ta’lim faoliyatini qo‘llab-quvvatlash masalalariga alohida e’tibor qaratiladi. Tadqiqot natijasida raqamli vositalar asosida individual yondashuvni tashkil etishning “diagnostika – rejalashtirish – moslashtirish – monitoring – qayta aloqa – korreksiya” tamoyiliga asoslangan pedagogik modeli taklif etiladi.

Аннотация. В данной тезисной работе анализируются педагогические возможности формирования индивидуального подхода в современном образовательном процессе с учетом индивидуальных особенностей учащихся, уровня их знаний, образовательных потребностей, интересов и темпа усвоения учебного материала. Раскрываются дидактические возможности цифровых образовательных средств в предоставлении адаптированного к потребностям учащихся содержания обучения, формировании индивидуальной образовательной траектории, мониторинге учебной деятельности и обеспечении оперативной обратной связи. Особое внимание уделяется педагогико-диагностической деятельности учителя, его цифровой компетентности, а также вопросам поддержки самостоятельной учебной деятельности учащихся при использовании цифровых технологий. В результате исследования предлагается педагогическая модель организации индивидуального подхода на основе цифровых средств, основанная на принципе «диагностика – планирование –

адаптация – мониторинг – обратная связь – коррекция».

Kalit so‘zlar: raqamli ta’lim, individual yondashuv, individual ta’lim trayektoriyasi, raqamli pedagogika, adaptiv ta’lim, ta’lim diagnostikasi, raqamli kompetensiya, elektron ta’lim, o‘quvchi faolligi, pedagogik texnologiya.

Bugungi kunda ta’lim jarayonining asosiy vazifalaridan biri barcha o‘quvchilarga bir xil mazmundagi bilimlarni yetkazishdan ko‘ra, ularning individual imkoniyatlari va ta’limiy ehtiyojlarini hisobga olgan holda rivojlanishiga shart-sharoit yaratishdan iborat. O‘quvchilarning bilim darajasi, qiziqishi, o‘zlashtirish tezligi, motivatsiyasi va mustaqil ishlash qobiliyatidagi farqlar ta’lim jarayonini individuallashtirish zaruratini kuchaytirmoqda. Mazkur jarayonda raqamli ta’lim vositalari muhim pedagogik resurs sifatida namoyon bo‘lmoqda. Elektron ta’lim platformalari, multimedia resurslari, raqamli testlar, adaptiv ta’lim tizimlari, virtual laboratoriyalar, elektron portfoliolar va sun’iy intellektga asoslangan vositalar o‘quvchining individual ta’lim ehtiyojlariga mos ta’limiy muhitni yaratish imkonini kengaytirmoqda. Biroq raqamli vositalarning mavjudligi o‘z-o‘zidan individual yondashuvni ta’minlamaydi. Muhim masala — mazkur vositalarni o‘quvchilarning real ehtiyojlarini aniqlash, ta’lim mazmunini moslashtirish va individual rivojlanish trayektoriyasini boshqarish bilan pedagogik jihatdan bog‘lashdir. Individual yondashuv o‘quvchining shaxsiy imkoniyatlarini, bilim darajasini, qiziqishlarini va rivojlanish ehtiyojlarini hisobga olgan holda ta’lim jarayonini tashkil etishni nazarda tutadi. Bunda o‘quvchi ta’lim jarayonining passiv obyekti emas, balki o‘z ta’lim faoliyatini boshqarishda ishtirok etuvchi faol subyekt sifatida qaraladi. Raqamli texnologiyalar individual yondashuvni amalga oshirish uchun uchta muhim imkoniyatni yaratadi. Birinchidan, **individual ta’limiy ehtiyojlarni diagnostika qilish** imkoniyati kengayadi. Elektron testlar, diagnostik topshiriqlar va ta’lim platformalaridagi analitik ma’lumotlar yordamida o‘quvchining muayyan mavzu bo‘yicha bilim darajasini aniqlash mumkin. Bunda diagnostika faqat yakuniy natijani

aniqlash emas, balki o‘quvchining qaysi bilim va ko‘nikmalarda qiyinchilikka duch kelayotganini aniqlashga xizmat qiladi. Ikkinchidan, **ta’lim mazmunini moslashtirish** imkoniyati paydo bo‘ladi. O‘quvchilarning tayyorgarlik darajasidan kelib chiqib, ularga turli murakkablikdagi topshiriqlar, qo‘shimcha o‘quv materiallari yoki rivojlantiruvchi mashqlar taklif etilishi mumkin. Shu tariqa bir xil o‘quv maqsadiga turli yo‘llar orqali erishish imkoniyati yuzaga keladi. Uchinchidan, **individual ta’lim trayektoriyasini shakllantirish** imkoniyati kengayadi. O‘quvchi o‘zining bilim darajasiga mos ravishda ta’lim materialini o‘zlashtirishi, topshiriqlarni bajarishi, xatolar ustida ishlashi va qo‘shimcha resurslardan foydalanishi mumkin. Shu nuqtai nazardan individual ta’lim trayektoriyasini quyidagi ketma-ketlik asosida tashkil etish maqsadga muvofiq: **diagnostika → individual maqsad → mos ta’lim resursi → mustaqil faoliyat → monitoring → qayta aloqa → korreksiya.** Mazkur modelning muhim jihati shundaki, unda o‘quvchining ta’limdagi har bir keyingi qadami avvalgi faoliyat natijalariga asoslanadi. **Raqamli vositalarning individual yondashuvdagi pedagogik funksiyalari** Raqamli ta’lim vositalarining individual yondashuvni shakllantirishdagi imkoniyatlarini quyidagi funksiyalar orqali tavsiflash mumkin:

Diagnostik funksiya. O‘quvchining bilim va ko‘nikmalaridagi mavjud holatni aniqlashga xizmat qiladi.

Moslashtiruvchi funksiya. O‘quvchining tayyorgarlik darajasiga mos topshiriq va resurslarni tanlash imkonini beradi.

Kommunikativ funksiya. O‘qituvchi va o‘quvchi o‘rtasidagi muntazam qayta aloqani ta’minlaydi.

Monitoring funksiyasi. O‘quvchining o‘zlashtirish dinamikasi va ta’lim faoliyatini kuzatish imkonini yaratadi.

Refleksiv funksiya. O‘quvchiga o‘z bilimini, xatolarini va rivojlanish natijalarini tahlil qilish imkonini beradi.

Korreksion funksiya. Aniqlangan bilim bo‘shliqlarini bartaraf etish uchun qo‘shimcha topshiriqlar va o‘quv resurslarini belgilashga yordam beradi.

Shunday qilib, raqamli vositalar individual yondashuvni faqat texnik jihatdan emas, balki didaktik jihatdan ham qo‘llab-quvvatlaydi.

Individual yondashuvning raqamli muhitdagi samaradorligi o‘qituvchining professional faoliyatiga bevosita bog‘liq. Raqamli platformalar ma’lumotlarni yig‘ishi va qayta ishlashi mumkin, biroq ushbu ma’lumotlarning pedagogik mazmunini aniqlash o‘qituvchining kasbiy kompetensiyasini talab qiladi.

Raqamli ta’lim vositalaridan oqilona foydalanish o‘quvchining mustaqil ta’lim olish ko‘nikmalarini shakllantirishga ham xizmat qiladi. O‘quvchi o‘ziga kerakli materialni tanlash, topshiriqni mustaqil bajarish, natijasini baholash va xatolarini tuzatish jarayonida ta’limning faol subyektiga aylanadi.

Bu jarayonda o‘quvchining **metakognitiv kompetensiyasi**, ya’ni “men nimani bilaman?”, “nimani bilmayman?”, “qanday o‘rganishim kerak?” kabi savollarga javob topa olish qobiliyati muhim ahamiyat kasb etadi.

Shuning uchun raqamli individual ta’limni faqat tayyor elektron materiallarni taqdim etish bilan chegaralash mumkin emas. U o‘quvchini o‘z ta’lim faoliyatini rejalashtirish va nazorat qilishga o‘rgatishi lozim.

Raqamli ta’lim vositalari o‘quvchilarga individual yondashuvni shakllantirish uchun katta pedagogik imkoniyatlarga ega. Ular o‘quvchilarning individual ta’limiy ehtiyojlarini aniqlash, ta’lim mazmunini moslashtirish, o‘quv faoliyatini monitoring qilish, tezkor qayta aloqa berish va individual ta’lim trayektoriyasini shakllantirish imkonini kengaytiradi. Shu bilan birga, raqamli vositalarning samaradorligi ularning texnik imkoniyatlari bilan emas, balki pedagogik maqsadga muvofiq qo‘llanilishi bilan belgilanadi. Individual yondashuvni shakllantirishda o‘qituvchining diagnostik, metodik va analitik kompetensiyalari hal qiluvchi ahamiyatga ega. Tadqiqot doirasida

taklif etilgan **“diagnostika – individual maqsad – moslashtirish – faoliyat – monitoring – qayta aloqa – korreksiya – qayta diagnostika”** modeli raqamli ta’lim vositalaridan foydalangan holda o‘quvchilarning individual rivojlanishini tizimli tashkil etish uchun metodik asos bo‘lib xizmat qilishi mumkin. Shunday qilib, raqamli texnologiyalarning ta’limdagi haqiqiy pedagogik qiymati ularning o‘quvchini o‘qituvchi o‘rniga qo‘yishida emas, balki **har bir o‘quvchining individual imkoniyatlarini aniqlash, qo‘llab-quvvatlash va rivojlantirish uchun o‘qituvchining pedagogik imkoniyatlarini kengaytirishida** namoyon bo‘ladi.

Foydalanilgan adabiyotlar

1. Deunk, M. I., Smale-Jacobse, A. E., de Boer, H., Doolaard, S., & Bosker, R. J. Effective differentiation practices: A systematic review and meta-analysis of studies on the cognitive effects of differentiation practices in primary education. *Educational Research Review*, 24, 31–54, 2018.

2. Tomlinson, C. A. *The Differentiated Classroom: Responding to the Needs of All Learners*. 2nd ed. ASCD, 2014.

3. UNESCO. *Global Education Monitoring Report 2023: Technology in Education – A Tool on Whose Terms?* Paris: UNESCO, 2023.

4. OECD. *Digital Education Outlook 2023: Towards an Effective Digital Education Ecosystem*. Paris: OECD Publishing, 2023.

5. Karst, K., Bonefeld, M., Dotzel, S., Fehringer, B. C. O., & Steinwascher, M. Data-based differentiated instruction and its impact on students’ learning outcomes. *Learning and Instruction*, 2022.

6. Langelaan, B. N., Gaikhorst, L., Smets, W., & Oostdam, R. J. Differentiating instruction: Understanding key elements for successful teacher preparation and development. *Teaching and Teacher Education*, 2024.

RELATIONSHIPS BETWEEN ORAL AND WRITTEN LITERATURE IN TURKIC PEOPLES' LITERATURE

Vaisova Mohigul Shokirovna
Researcher
mohigulvaisova487@gmail.com

Abstract

This thesis examines the relationship between oral folklore and written literature in Turkic peoples' literary traditions from historical-comparative and artistic interpretive perspectives. It explores how plots, motifs, characters, and expressive devices characteristic of oral folklore are transferred into written works, reworked by authors, and given new meanings. Particular attention is paid to the connections between oral traditions and genres, narrative techniques, and national artistic thought in written literature. The influence of written works on oral performance and their dissemination among the people is also discussed. By studying these relationships, the thesis aims to highlight the connections between shared heritage, national characteristics, and creative renewal in Turkic literatures.

Keywords

Turkic peoples' literature, oral folklore, written literature, folklorism, literary tradition, artistic interpretation, shared heritage, comparative analysis.

TURKIY XALQLAR ADABIYOTIDA OG'ZAKI VA YOZMA ADABIYOT MUNOSABATLARI

Vaisova Mohigul Shokirovna - Tadqiqotchi

Annotatsiya. Mazkur tezis turkiy xalqlar adabiyotida og'zaki ijod va yozma adabiyot o'rtasidagi munosabatlarni tarixiy-qiyosiy hamda badiiy talqin nuqtayi nazaridan o'rganishga bag'ishlanadi. Xalq og'zaki ijodiga xos syujet, motiv, obraz va ifoda vositalarining yozma asarlarga o'tishi, muallif tomonidan qayta ishlanishi va yangi

mazmun kasb etishi ko‘rib chiqiladi. Og‘zaki an’analarning yozma adabiyotdagi janrlar, hikoya qilish usullari va milliy badiiy tafakkur bilan aloqasiga e’tibor qaratiladi. Shuningdek, yozma asarlarning og‘zaki ijro va xalq orasida tarqalish jarayonlariga ta’siri muhokama qilinadi. Ushbu munosabatlarni o‘rganish orqali turkiy adabiyotlarda mushtarak meros, milliy xususiyatlar va ijodiy yangilanish o‘rtasidagi bog‘liqlikni yoritish maqsad qilinadi.

Kalit so‘zlar: turkiy xalqlar adabiyoti, og‘zaki ijod, yozma adabiyot, folklorizm, adabiy an’ana, badiiy talqin, mushtarak meros, qiyosiy tahlil.

KIRISH

Turkiy xalqlar adabiyotida og‘zaki ijod va yozma adabiyot munosabatlarini o‘rganish badiiy an’analarning davomiyligi hamda yangilanishini anglash uchun muhimdir. Xalq og‘zaki ijodida shakllangan syujet, motiv, obraz va ifoda usullari yozma asarlarda turli shakllarda namoyon bo‘ladi. Ularning muallif tomonidan tanlanishi, qayta ishlanishi va yangi badiiy vazifaga yo‘naltirilishi og‘zaki meros bilan individual ijod o‘rtasidagi aloqani yuzaga chiqaradi.

Og‘zaki va yozma adabiyotning farqi faqat asarning aytilishi yoki yozib qo‘yilishi bilan belgilanmaydi. Og‘zaki ijodda ijro vaziyati, tinglovchilar bilan munosabat va variantlilik muhim bo‘lsa, yozma adabiyotda muallifning individual uslubi hamda matnning muayyan shaklda qayd etilishi alohida ahamiyat kasb etadi. Shu bois folklor namunasini yozib olish bilan uning asosida yangi badiiy asar yaratishni farqlash zarur. Birinchi holatda og‘zaki matn qayd etiladi, ikkinchi holatda esa folklor materiali muallifning ijodiy talqiniga kiradi.

Mazkur munosabatlar o‘zaro ta’sir jarayoni sifatida ko‘rib chiqilishi lozim. Og‘zaki an’analar yozma adabiyot uchun badiiy manba bo‘lishi bilan birga, yozma asarlar ham og‘zaki ijro, qayta hikoyalash va ommalashish jarayonlariga kirishi

mumkin. Bunday holatlarda matnning mazmuni, ifoda shakli va qabul qilinishida yuz beradigan o‘zgarishlarni aniqlash muhimdir.

Mavzuning dolzarbligi turkiy adabiyotlardagi mushtarak meros va milliy xususiyatlarni aniq matniy dalillar asosida o‘rganish zarurati bilan belgilanadi. O‘xshash syujet yoki obrazning mavjudligi uning barcha adabiyotlarda bir xil mazmun va vazifa bajarishini anglatmaydi. Shuningdek, har qanday o‘xshashlikni bevosita adabiy ta’sir natijasi deb baholash yetarli emas. Qiyoslashda tarixiy-madaniy muhit, janr, ijro an’anasi va muallif talqini hisobga olinishi kerak.

Tadqiqotning maqsadi — turkiy xalqlar adabiyotida og‘zaki va yozma an’analar o‘rtasidagi aloqaning asosiy shakllari hamda badiiy vazifalarini yoritish. Ushbu maqsad doirasida folklor unsurlarining yozma matnda o‘zlashtirilishini tavsiflash, an’anaviy materialning muallif talqinida o‘zgarishini ko‘rsatish va yozma asarlarning og‘zaki muhitda tarqalish xususiyatlarini ko‘rib chiqish vazifalari belgilanadi. Mavzu keng qamrovli bo‘lgani sababli tezisda masalaning asosiy nazariy jihatlari bayon etiladi; alohida turkiy adabiyotlarga oid xulosalar esa tanlangan asarlar tahlili bilan asoslanishi lozim.

ASOSIY QISM

Turkiy xalqlar adabiyotida og‘zaki va yozma an’analar munosabatini tahlil qilishda folklor materialining yozma matnga qanday o‘tishi va unda qanday vazifa bajarishi asosiy mezon hisoblanadi. Og‘zaki ijod namunasining yozib olinishi, yozma asarda bevosita keltirilishi va muallif tomonidan ijodiy qayta ishlanishi o‘zaro bog‘liq, ammo farqli jarayonlardir. Ularni ajratish folklor merosini saqlash bilan yangi badiiy mazmun yaratish o‘rtasidagi munosabatni aniqlashtiradi.

Folklor materialining yozma adabiyotda o‘zlashtirilishi. Og‘zaki ijod unsurlari yozma asarda maqol, matal, qo‘shiq yoki rivoyat shaklida bevosita berilishi mumkin. Bunday birliklarning badiiy ahamiyati ularning matndagi o‘rniga bog‘liq. Qahramon

nutqida qo‘llangan maqol uning dunyoqarashi va hayotiy tajribasini ifodalashi, rivoyat esa voqealar kechayotgan makon yoki qahramon taqdirini anglashga xizmat qilishi mumkin. Shu sababli folklor unsurini aniqlash uning kim tomonidan, qanday vaziyatda va qanday maqsadda qo‘llanganini tushuntirish bilan davom ettirilishi lozim.

Folklor an’anasi matnda alohida parcha sifatida ko‘rinmasdan, syujet va obrazlar tizimiga ham singdirilishi mumkin. Bunda an’anaviy motiv yozuvchi tomonidan yangi tarixiy yoki ijtimoiy sharoitga ko‘chiriladi, qahramonning tanlovi va ichki kechinmalari bilan bog‘lanadi. Natijada folklor materiali muallifning badiiy niyatiga muvofiq qayta talqin etiladi. Biroq safar, sinov yoki qaytish kabi keng tarqalgan motivlarning mavjudligi o‘z-o‘zidan folklor ta’sirini isbotlamaydi. Bunday aloqani asoslash uchun voqealar tuzilishi, obrazlar vazifasi va ifoda xususiyatlari birgalikda tekshirilishi zarur.

Muallif talqini va an’anaviy mazmunning o‘zgarishi. Yozma adabiyotda folklor materialini o‘zlashtirish tanlash, qisqartirish, kengaytirish va mazmuniy o‘zgartirish orqali amalga oshishi mumkin. Muallif an’anaviy qahramon yoki voqeani saqlagan holda uning baholanishini o‘zgartirishi, ilgari ikkinchi darajali bo‘lgan obrazga alohida e’tibor qaratishi yoki voqeani boshqa qahramon nuqtayi nazaridan bayon qilishi mumkin. Shuning uchun og‘zaki manba bilan yozma asarni qiyoslashda saqlangan unsurlar bilan birga o‘zgartirilgan jihatlar ham tahlil qilinishi kerak.

Mazkur jarayonda kollektiv ijodiy tajriba va individual mualliflik munosabati muhimdir. Folklor namunasi turli ijrolarda variantlar hosil qilishi mumkin bo‘lsa, yozuvchi undan foydalanib o‘z asarining muayyan badiiy tuzilishini yaratadi. Shu bilan birga, og‘zaki ijrochini an’anani takrorlovchi shaxs sifatida ko‘rish ham yetarli emas: ijro usuli, voqealarni bayon qilish va tinglovchiga moslashtirish uning ijodiy ishtirokini ko‘rsatadi.

Yozma matnning og‘zaki muhitda tarqalishi. Og‘zaki va yozma adabiyot aloqasining ikkinchi yo‘nalishi yozma asarning aytib berilishi, yod olinishi yoki ijro

etilishi bilan bog‘liq. Bu jarayonda matn qisqarishi, ayrim epizodlarga urg‘u berilishi yoki ifodalar ijro sharoitiga moslashishi mumkin. Biroq yozma asarning ovoz chiqarib o‘qilishi uning avtomatik ravishda folklor namunasiga aylanganini anglatmaydi. Og‘zaki an’anaga singish haqida xulosa chiqarishda matnning tarqalishi, variantlari va muallifga munosabat kabi jihatlar o‘rganilishi lozim.

Qayta hikoyalashda voqealarning asosiy mazmuni saqlansa ham, bayon shakli o‘zgarishi mumkin. Tinglovchi tarkibi, ijro maqsadi va mahalliy madaniy muhit ayrim obraz yoki epizodlarning talqiniga ta’sir qiladi. Shu jihatdan yozma matnning og‘zaki muhitdagi hayoti uning yangi sharoitda qabul qilinishi va qayta yaratilishi sifatida tahlil etiladi.

Mushtaraklik va milliy xususiyatlarni qiyoslash. Turkiy adabiyotlardagi o‘xshash motiv va obrazlarni o‘rganishda ularning kelib chiqishi hamda matndagi vazifasini farqlash zarur. O‘xshashlik umumiy madaniy meros, adabiy aloqalar yoki bir-biridan mustaqil shakllangan tipologik yaqinlik bilan bog‘liq bo‘lishi mumkin. Ushbu imkoniyatlardan birini tanlash tarixiy va matniy dalillarga tayanishi kerak.

Milliy o‘ziga xoslik esa faqat mahalliy nomlar va urf-odatlar orqali belgilanmaydi. U hikoya qilish tarzi, qahramonning qadriyatlarga munosabati, obrazlarning ma’nosi va an’anaviy syujetning qayta talqinida ham namoyon bo‘lishi mumkin. Bunda bir asarga xos uslubiy belgini butun bir xalq adabiyotining umumiy xususiyati sifatida baholashdan saqlanish lozim.

Og‘zaki va yozma adabiyot munosabatlarini quyidagi mezonlar asosida tizimlashtirish mumkin:

Munosabat shakli	**Tahlilda aniqlanadigan jihat**
Og‘zaki matnni yozib olish	Ijro sharoiti, qayd etish usuli va variantning xususiyatlari

Munosabat shakli	Tahlilda aniqlanadigan jihat
Folklor unsurini bevosita keltirish	Uning qahramon nutqi yoki muallif bayonidagi vazifasi
Ijodiy qayta ishlash	Syujet, motiv va obrazlarning muallif talqinida o‘zgarishi
Yozma asarni og‘zaki ijro etish	Matnning ijro vaziyati va tinglovchiga moslashtirilishi
Og‘zaki an’anaga singish	Tarqalish, variantlilik va mualliflikka munosabat
Adabiyotlararo qiyoslash	Mushtaraklik va farqlarning tarixiy hamda matniy asoslari

Ushbu mezonlar og‘zaki va yozma adabiyot aloqasini unsurlar o‘xshashligini qayd etishdan kengroq doirada o‘rganishga yordam beradi. Tahlilning asosiy vazifasi an’anaviy materialning qaysi shaklda saqlanishi, qanday o‘zgarishi va yangi matnda qanday badiiy mazmun yaratishini ochib berishdan iborat.

XULOSA

Turkiy xalqlar adabiyotida og‘zaki va yozma ijod munosabatlari an’anaviy badiiy merosning saqlanishi, qayta talqin qilinishi va tarqalishini qamrab oladigan o‘zaro ta’sir jarayonidir. Ushbu aloqani o‘rganishda folklor namunasini yozib olish, yozma asarda undan foydalanish va muallif tomonidan yangi badiiy mazmun yaratishni farqlash zarur. Og‘zaki manbaning mavjudligi yozma asarning mazmunini to‘liq belgilamaydi; uning badiiy vazifasi muallif talqini va matn tuzilishi orqali aniqlanadi.

Folklor syujetlari, motivlari, obrazlari va ifoda vositalari yozma adabiyotda turli vazifalarni bajarishi mumkin. Ular qahramon dunyoqarashini ochish, voqealarni tashkil etish, madaniy xotirani ifodalash va asarning mazmuniy qatlamlarini boyitishga xizmat qiladi. Bunday vazifalar har bir matnda alohida tekshirilishi lozim. Tashqi

o‘xshashlikning o‘zi folklor ta’siri yoki adabiyotlararo aloqani tasdiqlash uchun yetarli emas.

Yozma asarlarning og‘zaki ijro va qayta hikoyalash orqali tarqalishi ham mazkur munosabatlarning muhim yo‘nalishidir. Bu jarayonda matn ijro vaziyati va tinglovchiga moslashishi mumkin. Biroq asarning og‘zaki aytilishini uning folklorlashuvi bilan tenglashtirish asosli emas. Folklorlashuv haqidagi xulosalar variantlilik, tarqalish xususiyatlari va mualliflikka munosabatni o‘rganishga tayanishi kerak.

Turkiy adabiyotlardagi mushtaraklik va milliy xususiyatlarni qiyoslash tarixiy-madaniy sharoit hamda aniq matniy dalillarni hisobga olishni talab etadi. Ushbu tezisda bayon etilgan nazariy mezonlar og‘zaki va yozma an’analar aloqasini tizimli tahlil qilishga yo‘naltirilgan. Keyingi tadqiqotlarda muayyan davr, janr va asarlar doirasini belgilash, og‘zaki manba variantlarini yozma talqinlar bilan qiyoslash orqali bu munosabatlarning o‘ziga xos ko‘rinishlarini dalillar asosida yoritish mumkin.

FOYDALANILGAN ADABIYOTLAR

1. Quronov D., Mamajonov Z., Sheraliyeva M. **Adabiyotshunoslik lug‘ati**. — Toshkent: Akademnashr, 2010.

2. Reichl K. **Turkic Oral Epic Poetry: Tradition, Forms, Poetic Structure**. — New York: Garland Publishing, 1992.

3. Lord A. B. **The Singer of Tales**. — 2nd ed. — Cambridge, Massachusetts: Harvard University Press, 2000.

4. Жирмунский В. М. **Народный героический эпос: сравнительно-исторические очерки**. — Москва; Ленинград: Государственное издательство художественной литературы, 1962. — 435 с.

GENRE CHARACTERISTICS OF THE POEMS IN “BAYOZI SULTON”

Sodiqova Maftuna Baxtiyor qizi
Teacher, General Secondary School No. 34

Abstract

This paper examines the genre features of the poems included in “Bayozi Sulton”, an important written source associated with the literary environment of Khorezm in the nineteenth century. It discusses the distinctive characteristics and relative frequency of the ghazal, mukhammas, musaddas, and qasida, as well as the significance of the collection’s genre composition for studying Sultani’s literary heritage.

Keywords

“Bayozi Sulton”, Sultani, Khorezm literary environment, ghazal, mukhammas, musaddas, qasida, genre, manuscript studies, textual scholarship.

“BAYOZI SULTON” ASARIDAGI SHE’RLARNING JANRIY TAVSIFI

Sodiqova Maftuna Baxtiyor qizi [34-son umumiy o‘rta ta’lim o‘qituvchisi]

Annotatsiya. Mazkur tezisda XIX asr Xorazm adabiy muhitining muhim yozma manbalaridan biri bo‘lgan “Bayozi Sulton” qo‘lyozmasidagi she’rlarning janriy xususiyatlari tahlil qilinadi. Asarda uchraydigan g‘azal, muxammas, musaddas va qasida janrlarining o‘ziga xos jihatlari, ularning miqdoriy nisbati hamda mavzuviy yo‘nalishlari yoritiladi. Shuningdek, janriy tarkibning Sultoniy ijodiy merosini o‘rganishdagi ahamiyati ko‘rsatib beriladi.

Kalit so‘zlar: “Bayozi Sulton”, Sultoniy, Xorazm adabiy muhiti, g‘azal, muxammas, musaddas, qasida, janr, qo‘lyozma, matnshunoslik.

Kirish. O‘zbek mumtoz adabiyoti tarixini o‘rganishda qo‘lyozma bayozlar alohida ahamiyat kasb etadi. Bunday manbalar shoirlar ijodini saqlash, she’riy janrlarning taraqqiyotini kuzatish va muayyan davr adabiy muhitining o‘ziga xos xususiyatlarini aniqlash imkonini beradi. Ayniqsa, XIX asr oxiri – XX asr boshlarida Xorazmda

shakllangan adabiy muhitda bayozchilik va devonchilik an’analari rivojlangan. “Bayozi Sulton” Xorazm adabiy merosini o‘rganishda muhim manbalardan biridir. Mazkur qo‘lyozmadagi she’rlarning janriy tarkibini o‘rganish shoir ijodining shakliy va mavzuviy xususiyatlarini aniqlash, uning mumtoz she’riyat an’analari bilan aloqasini yoritishda ahamiyatga ega.

Asosiy qism. “Bayozi Sulton” asari janriy tarkibining rang-barangligi bilan ajralib turadi. Abu Rayhon Beruniy nomidagi Sharqshunoslik instituti qo‘lyozmalar fondida saqlanayotgan 1163-raqamli bayozda 117 ta g‘azal, 16 ta muxammas, 1 ta musaddas va 2 ta qasida mavjud. Qayd etilgan she’rlar jami 136 tani tashkil etadi [1].

Janrlar miqdorining bunday nisbati bayozda g‘azalning yetakchi o‘rin tutishini ko‘rsatadi. Shu bilan birga, muxammas, musaddas va qasidalarning mavjudligi Sultoniy ijodida mumtoz she’riyatning turli shakllaridan foydalanilganini ko‘rsatadi.

G‘azal janri. “Bayozi Sulton”dagi eng ko‘p sonli janr g‘azaldir. Mumtoz adabiyotda g‘azal ishqiy kechinmalar, yor vasfi, hijron, visol va insoniy tuyg‘ularni ifodalashga xizmat qiladi. Bayozdagi g‘azallarni tahlil qilishda ularning mavzusi, qofiya-radif tizimi, vazni va badiiy san’atlariga e’tibor qaratish lozim. Bayozning hamd mazmunidagi g‘azal bilan boshlanishi mumtoz she’riyatdagi an’anaviy kompozitsion tamoyillar bilan bog‘liq bo‘lishi mumkin; bu xususiyat qo‘lyozma matni asosida tekshirilishi zarur. Muxammas janri. Asarda 16 ta muxammasning mavjudligi ushbu janrning Sultoniy ijodida muhim o‘rin tutganini ko‘rsatadi. Muxammas besh misrali bandlardan tashkil topadi. Mumtoz adabiyotda muxammas mustaqil yaratilishi yoki boshqa shoir g‘azaliga bog‘lanishi mumkin. Shu sababli bayozdagi muxammaslarning qaysi g‘azallarga bog‘langanini, taxmis xususiyatlarini va qofiya tizimini aniqlash Sultoniyning adabiy an’analar bilan munosabatini o‘rganishga yordam beradi.

Musaddas janri. Bayozda bir dona musaddas qayd etilgan. Musaddas olti misrali bandlardan tashkil topuvchi she’riy shakldir. Ushbu janr namunasini alohida o‘rganish

orqali Sultoniy she’riyatida bandli shakllardan foydalanish mahorati, mazmuniy yo‘nalish va badiiy ifoda xususiyatlarini aniqlash mumkin.

Qasida janri. “Bayozi Sulton”da ikki qasidaning mavjudligi shoir ijodida qasida shakliga ham murojaat qilinganini ko‘rsatadi. Mumtoz adabiyotda qasida hamd, madh, tarixiy voqea yoki muhim shaxsni ulug‘lash kabi maqsadlarda yaratilgan. Biroq bayozdagi qasidalarning aniq mavzusi va g‘oyaviy yo‘nalishini belgilash uchun ularning to‘liq matnini tahlil qilish lozim. Janriy tavsifni faqat she’rlar sonini sanash bilan cheklash yetarli emas. Har bir she’rning vazni, qofiyasi, radifi, kompozitsiyasi, mavzusi va badiiy san’atlarini tahlil qilish janriy xususiyatlarni chuqurroq ochib beradi. Xususan, muxammaslarning taxmis yoki mustaqil muxammas ekanini, qasidalarning madhiyaviy yoki boshqa mazmunda yozilganini bevosita matn asosida aniqlash zarur.

Xulosa. “Bayozi Sulton” asarining janriy tarkibi Sultoniy ijodining rang-barangligini hamda Xorazm mumtoz adabiy muhitida shakllangan poetik an’analarning davomiyligini ko‘rsatadi. Qo‘lyozmada 117 ta g‘azal, 16 ta muxammas, 1 ta musaddas va 2 ta qasidaning mavjudligi g‘azal janrining yetakchi o‘rinda ekanini tasdiqlaydi. Asarni janriy, mavzuviy va matniy jihatdan kompleks o‘rganish Sultoniyning ijodiy mahoratini va Xorazm adabiy muhitidagi o‘rnini yanada aniqroq belgilashga xizmat qiladi.

Foydalanilgan adabiyotlar

1. “Bayozi Sulton”. O‘zbekiston Respublikasi Abu Rayhon Beruniy nomidagi Sharqshunoslik instituti qo‘lyozmalar fondi. — 1163-raqamli qo‘lyozma.

2. Sodiqova, M. B. “Bayozi Sulton” asari tavsifi va tasnifi // International Journal of Scientific Researchers. — 2025. — Vol. 10, Issue 1. — B. 397–401.

3. Umarova, S. Xorazm adabiy muhitida devonchilik an’anasi // O‘zbekiston: til va madaniyat. Adabiyotshunoslik. — 2022. — 2-son. — B. 14–25.

4. http: // xorazmiy.uz

5. www. Student.ru

MORPHOGENETIC CHARACTERISTICS OF HYDROMORPHIC SOILS IN THE ARID AGRICULTURAL LANDSCAPES OF THE FERGANA VALLEY AND THEIR ANTHROPOGENIC TRANSFORMATION

Akbarov Sarvarbek Baxromboy

Trainee Lecturer, Department of Geography and Economics, Kokand State University (23 Turon Street, Kokand, 150101).

Abstract

This article analyzes the formation conditions and morphogenetic structure of irrigated hydromorphic soils in the Central Fergana region, as well as the processes of anthropogenic transformation resulting from long-term irrigation. Based on field research and soil profile analyses, the study examines the formation of the characteristic arziq and shox horizons, gleying, secondary salinization, and waterlogging affecting the region's soils. The granulometric composition of soil horizons and the dynamics of its changes are also presented.

Keywords

hydromorphic soil, arziq, shox horizon, anthropogenic transformation, gleying, granulometric composition.

FARG'ONA VODIYSINING QURG'OQCHIL AGROLANDSHAFTLARIDAGI GIDROMORF TUPROQLARNING MORFOGENETIK XUSUSIYATLARI VA ULARNING ANTROPOGEN O'ZGARISHI

Akbarov Sarvarbek Baxromboy Qo'qon davlat universiteti, Geografiya va iqtisodiyot kafedrasi stajyor o'qtuvchisi (150101, Qo'qon sh., Turon ko'chasi, 23).

Annotatsiya

Maqolada Markaziy Farg'ona hududining sug'oriladigan gidromorf tuproqlarining shaklanish sharoitlari, ularning morfogenetik tuzilishi hamda ko'p yillik irrigatsiya

ta’sirida yuzaga kelgan antropogen transformatsiya jarayonlari tahlil qilingan. Dala tadqiqotlari va tuproq kesmalari tahlili asosida mintaqa tuproqlari uchun xos bo‘lgan "arziq" va "shox" qatlamlarining paydo bo‘lishi, gleylanish, ikkilamchi sho‘rlanish hamda botqoqlanish muammolari yoritilgan. Shuningdek, tuproq qatlamlarining granulometrik tarkibi va uning o‘zgarish dinamikasi ko‘rsatib berilgan.

Kalit so‘zlar: Gidromorf tuproq, arziq, shox qatlami, antropogen transformatsiya, gleylanish, granulometrik tarkib.

KIRISH

Farg‘ona vodiysi O‘zbekistonning eng muhim qishloq xo‘jaligi hududlaridan biri bo‘lib, bu yerdagi tuproq qoplamining holati agrar tarmoq barqarorligini belgilaydi. Markaziy Farg‘ona hududining o‘ziga xos xususiyati shundaki, umumiy qurg‘oqchil iqlim sharoitiga qaramasdan, bu yerda yer osti suvlarining yuzaga yaqin joylashishi hisobiga gidromorf (ortiqcha namlanish ta’sirida rivojlangan) tuproqlar keng tarqalgan.

XX asrda amalga oshirilgan yirik gidrotexnik inshootlarning qurilishi va yangi yerlarning jadal o‘zlashtirilishi tuproq hosil bo‘lish jarayonlarining yo‘nalishini keskin o‘zgartirib yubordi. Bu jarayon qishloq xo‘jaligi ekinlari maydonlarini kengaytirgan bo‘lsa-da, ikkinchi tomondan sizot suvlari sathining ko‘tarilishi va tuproqlarning ikkilamchi sho‘rlanishi hamda botqoqlanishi kabi salbiy ekologik o‘zgarishlarga olib keldi. Ushbu tadqiqotning asosiy maqsadi Markaziy Farg‘ona hududidagi asosiy tuproq turlarining morfogenetik tuzilishini o‘rganish va ularga antropogen omillarning ta’sirini baholashdan iborat.

MATERIALLAR VA USULLAR

Tadqiqotlar Markaziy Farg‘ona suv omborining ta’sir zonasi va unga tutash hududlarda olib borildi. Hududning zamonaviy tuproq qoplami o‘tmishdagi ko‘l-prolyuvial tekislik merosi asosida shakllangan. Tadqiqot jarayonida V.V.

Dokuchayevning morfologik-genetik va qiyosiy-geografik usullari hamda dala tadqiqotlari qo‘llanildi.

Dala sharoitida sizot suvlarining sathigacha bo‘lgan 25 ta tuproq kesmasi qazilib, ularning morfologik belgilari (qatlamlar qalinligi, rangi, strukturasi, yangi hosilalari) o‘rganildi. Laboratoriya tahlillari uchun genetik qatlamlardan namunalar olindi. Tuproq namunalarining granulometrik tarkibi N.A. Kachinskiyning pipetka usuli yordamida aniqlandi.

NATIJALAR VA MUHOKAMA (RESULTS AND DISCUSSION)

O‘tkazilgan tadqiqotlar natijasida hududda bir nechta o‘ziga xos morfogenetik tuzilishga ega tuproq turlari aniqlandi:

Sug‘oriladigan o‘tloqi saz tuproqlar: Bu tuproqlar sizot suvlari kapillyarlar orqali tuproq kesmasini doimiy namlab turadigan sharoitda shakllanadi. Buvayda tumani hududidagi 23-kesma tahlili shuni ko‘rsatdiki, haydalma qatlam (0–38 sm) ko‘kimtir-sur tusli qumoqdan iborat bo‘lib, pastki qatlamlarda (56 sm dan boshlab) karbonat konkretsiyalari va mergel-sho‘xli qatlamlar hosil bo‘lgan.

Sug‘oriladigan o‘tloq arziqli tuproqlar: Bu tuproqlarning asosiy belgisi kesmaning o‘rta qismida gips va karbonatlarga boy, suv o‘tkazuvchanligi past bo‘lgan zich "arziq" qatlamining mavjudligidir. Uchko‘prik tumanidagi 15-kesmada 51 sm dan boshlanuvchi bu qatlamda gips-karbonatli sharsimon agregatlar va temir-marganetsli konkretsiyalar aniqlandi.

Sug‘oriladigan o‘tloq-botqoq va sho‘rxok-botqoq tuproqlar: Sizot suvlari juda yaqin (0,5–1 m) joylashgan hududlarda shakllanib, butun kesma bo‘ylab kuchli gleylanish va tuz to‘planishi (sho‘rxoklanish) kuzatiladi.

Granulometrik tarkib tahlili:

Hududni o‘zlashtirish va yer tekislash ishlari tuproq qoplamining mexanik tarkibiga jiddiy ta’sir ko‘rsatgan. Qumli do‘ngliklarning kesilib pastqamliklarga

yotqizilishi natijasida qalinligi turlicha bo‘lgan qumli qatlamlar paydo bo‘lgan. Kesmalarning o‘rta qismlari esa asosan og‘ir qumoq va gil zarrachalari (fizik loyqa miqdori 65,66% gacha) bilan tavsiflanib, qatlamlarning murakkab va notekis tuzilishga ega ekanligini tasdiqlaydi.

XULOSALAR

Markaziy Farg‘onaning zamonaviy tuproq qoplami tabiiy gidromorf jarayonlar (gleylanish, arziq va shox qatlamlarining shakllanishi) hamda ko‘p yillik sug‘oriladigan dehqonchilik ta’sirida yuzaga kelgan antropogen o‘zgarishlarni o‘zida mujassam etadi.

O‘tmishdagi ko‘l-prolyuvial yotqiziqlar o‘rnida shakllangan zich gips-karbonatli "arziq" qatlamlari hozirgi kunda ham tuproqlarning meliorativ holatini qiyinlashtiruvchi va ikkilamchi sho‘rlanishga moyilligini oshiruvchi asosiy omil hisoblanadi.

XX asrdagi keng ko‘lamli irrigatsiya ishlari qishloq xo‘jaligi imkoniyatlarini kengaytirgan bo‘lsa-da, sizot suvlari sathining ko‘tarilishi va sho‘rxok-botqoq tuproqlarning paydo bo‘lishiga olib kelgan.

ADABIYOTLAR / REFERENCES

1. Aktamov, M. I. Geochemistry of water-soluble salts in irrigated soils. Zenodo, 2024.

2. Исаков В.Ю. Свойства арзыковых почв Центральной Ферганы. Ташкент: "Узинформагропром", 1991.

3. Исаков В.Ю., Акбаров С.Б. Агрохимические свойства орошаемых луговых арзыковых почв территорий, прилегающих к Центрально-Ферганскому водохранилищу // Научное обозрение. Биологические науки. 2025. № 3.

4. Камилов О.К., Исаков В.Ю. Генезис и свойства окарбоначенно-загипсованных почв Центральной Ферганы. Ташкент: «Фан», 1992.

5. Xoldarov D.M. Биогеохимия засоленных почв Ферганской долины и пути их использования. Автореф. дис... докт. наук. Ташкент, 2024.

THE CONTRIBUTION OF THE TIMURID RENAISSANCE TO MODERN SCIENCE

Norov O.

Deputy Director for Academic Affairs, Nuriston Academic Lyceum, Karshi State Technical University

Annotation

The paper examines the contribution of the Timurid Renaissance (late 14th – 15th centuries) to astronomy, mathematics, education and the humanities, and shows the relevance of the Samarkand scientific school for modern science and education.

Keywords

Timurid Renaissance, Samarkand scientific school, Mirzo Ulugbek, Zij-i Jadid-i Kuragani, Jamshid al-Kashi, Third Renaissance, integrative education.

TEMURIYLAR DAVRI RENESSANSINING ZAMONAVIY ILM-FANGA QO‘SHGAN HISSASI

Norov O.

Qarshi davlat texnika universiteti Nuriston akademik litsiyi o‘quv ishlari bo‘yicha direktor o‘rin bosari

Annotatsiya. Tezisda XIV asr oxiri – XV asrda Movarounnahr va Xurosonda shakllangan Temuriylar davri renessansining astronomiya, matematika, ta’lim tizimi va gumanitar fanlar rivojiga qo‘shgan hissasi tahlil qilinadi. Samarqand ilmiy maktabi natijalarining zamonaviy fan va ta’lim uchun ahamiyati ochib beriladi.

Kalit so‘zlar: Temuriylar renessansi, Samarqand ilmiy maktabi, Mirzo Ulug‘bek, Ziji jadidi Ko‘ragoniy, Jamshid Koshiy, Uchinchi Renessans, integrativ ta’lim.

Temuriylar davri (XIV asr oxiri – XV asr) Markaziy Osiyo tarixida ilm-fan va madaniyat gullab-yashnagan davr sifatida e’tirof etiladi. Samarqand, Buxoro va Hirot nafaqat siyosiy, balki yirik ilmiy markazlarga aylandi. Bu davrning o‘ziga xosligi

shundaki, ilmiy yutuqlar yakka olimlarning tasodifiy kashfiyotlari emas, balki rasadxona, madrasa, kutubxona va ilmiy kengashdan iborat yaxlit tizim natijasi edi. Shu bois Temuriylar renessansi bugungi ilmiy siyosat va ta’lim modellari uchun ham o‘rganishga arziydigan tajriba hisoblanadi.

Astronomiya sohasidagi yutuqlar. Mirzo Ulug‘bek (1394–1449) 1420-yillarda Samarqandda o‘z davrining eng yirik rasadxonalaridan birini qurdirdi. Rasadxonaning asosiy asbobi – radiusi taxminan 40 metrga teng Faxriy sekstanti yuqori aniqlikdagi kuzatuvlarga imkon berdi. Kuzatuvlar natijalari 1437 yilda yakunlangan «Ziji jadidi Ko‘ragoniy» asarida jamlandi. Unda 1018 ta yulduzning koordinatalari keltirilgan bo‘lib, bu katalog Ptolemey davridan keyingi eng muhim yulduz kataloglaridan biri sifatida teleskopdan oldingi astronomiyaning yuksak cho‘qqisi hisoblanadi. Ulug‘bek jamoasi yulduz yilining davomiyligini 365 kun 6 soat 10 daqiqa 8 soniya deb aniqladi, bu zamonaviy qiymatdan atigi bir daqiqa atrofida farq qiladi. Zij XVII asrda Oksfordda J. Grivz va T. Xayd tomonidan nashr etilib, Yevropa astronomlariga ma’lum bo‘ldi. Ulug‘bek nomi Oy yuzasidagi kraterga va 2439-raqamli asteroidga berilgani uning xalqaro ilmiy e’tirofidan dalolat beradi.

Matematika va trigonometriya. Samarqand maktabi matematikasi hisoblash usullarining rivojiga katta ta’sir ko‘rsatdi. G‘iyosiddin Jamshid Koshiy «Muhit haqida risola» (1424) asarida 2π ning qiymatini o‘nli kasrning 16 xonasigacha aniqlikda hisobladi, «Hisob kaliti» (1427) asarida esa o‘nli kasrlar bilan amallarni tizimli bayon etdi. Koshiy ishlab chiqqan iteratsion yaqinlashish usullari trigonometrik jadvallarni, xususan, 1° sinusini yuqori aniqlikda hisoblashda qo‘llanildi va bugungi sonli usullarning tarixiy ildizlaridan biri sanaladi. Qozizoda Rumiy va Ali Qushchi kabi olimlar bu an’anani davom ettirib, uni Usmonli saltanati ilmiy muhitiga ham yetkazdilar.

Ta’lim va ilmiy muhit. Ulug‘bek Buxoro (1417), Samarqand (1417–1420) va G‘ijduvonda (1433) madrasalar qurdirib, ularda diniy fanlar bilan bir qatorda riyoziyot,

hay’at (astronomiya) va boshqa dunyoviy fanlarni o‘qitishni yo‘lga qo‘ydi. Bu yondashuv fanlararo integratsiyaga asoslangan zamonaviy ta’lim modellarining prototipi sifatida qaralishi mumkin. Hirotda Alisher Navoiy, Abdurahmon Jomiy, Kamoliddin Behzod faoliyati adabiyot, tilshunoslik va tasviriy san’at rivojiga, Sharafuddin Ali Yazdiy va Hofizi Abru asarlari tarixshunoslikka, Zahiriddin Muhammad Boburning «Boburnoma»si geografiya va etnografiya fanlariga bebaho hissa bo‘ldi.

Zamonaviy ahamiyati. Temuriylar renessansi tajribasidan bugun uch muhim xulosa chiqarish mumkin: birinchidan, fundamental ilm amaliy ehtiyojlar (kalendar, geodeziya, navigatsiya) bilan uzviy bog‘langanda samarali bo‘ladi; ikkinchidan, davlat tomonidan ilm-fanga ko‘rsatiladigan izchil e’tibor va xalqaro ilmiy almashinuv natijani ta’minlaydi; uchinchidan, tabiiy va gumanitar fanlarning uyg‘unligi komil shaxs tarbiyasining asosidir. 1994 yilda YUNESKO tashabbusi bilan Ulug‘bekning 600 yilligi dunyo miqyosida nishonlanishi bu merosning global ahamiyatini tasdiqladi. Bugungi O‘zbekistonda ilgari surilayotgan Uchinchi Renessans g‘oyasi ham aynan shu tarixiy poydevorga tayanadi.

Xulosa. Temuriylar davri renessansi astronomiya, matematika, ta’lim va gumanitar fanlar sohasida zamonaviy ilm-fan uchun mustahkam asos yaratdi. Bu merosni litsey va oliy ta’lim tizimida matematika, fizika, astronomiya va tarix fanlarini integratsiyalashgan holda o‘qitish orqali o‘rganish yoshlarda ilmiy tafakkur, tarixiy xotira va milliy g‘ururni shakllantirishga xizmat qiladi.

Foydalanilgan adabiyotlar

1. Amir Temur. Temur tuzuklari. – Toshkent: G‘afur G‘ulom nomidagi nashriyot-matbaa ijodiy uyi, 1991.

2. Bobur Z.M. Boburnoma. – Toshkent: Yulduzcha, 1989.

3. Mirziyoyev Sh.M. Yangi O‘zbekiston strategiyasi. – Toshkent: O‘zbekiston, 2021.

4. Кары-Ниязов Т.Н. Астрономическая школа Улугбека. – М.–Л.: Изд-во АН СССР, 1950.

5. Аль-Каши. Ключ арифметики. Трактат об окружности. – М.: ГИТТЛ, 1956.

6. Матвиевская Г.П., Розенфельд Б.А. Математики и астрономы мусульманского средневековья и их труды (VIII–XVII вв.). Т. 1–3. – М.: Наука, 1983.

7. Sayili A. The Observatory in Islam and Its Place in the General History of the Observatory. – Ankara: Turkish Historical Society, 1960.

8. Starr S.F. Lost Enlightenment: Central Asia's Golden Age from the Arab Conquest to Tamerlane. – Princeton: Princeton University Press, 2013.

The Significance of Combining Professions and Positions and Secondary Employment Contracts in Labour Law and Social Security Law

Kholxo‘jayev Azizxon Avaz o‘g‘li

Abstract

This thesis analyzes the legal nature, theoretical foundations, practical significance, and legal regulation of combining professions and positions and secondary employment contracts from the perspective of labour law. In a market economy, factors such as the population’s need for additional income, increasing competition between employers and employees in the labour market, and the need for efficient use of personnel in the workplace are enhancing the importance of these legal institutions and their interrelationship. Currently, combining professions and positions in organizations and enterprises not only expands employees’ right to work but is also directly related to issues such as working hours, remuneration, rest periods, social insurance, and pension provision. This thesis examines the legal characteristics of these employment relationships, the differences between them, their impact on labour law, and potential directions for improving legislation.

Keywords

labour law, social security law, secondary employment, combining professions and positions, employment contract, working hours, social insurance, pension provision, employment guarantees.

Бир неча касбда ишлаш ва ўриндошлик шартномасининг меҳнат ҳуқуқи ва ижтимоий таъминот ҳуқуқидаги аҳамияти

Холхўжаев Азизхон Аваз ўғли

Аннотация

Мазкур тезисда меҳнат ҳуқуқи нуқтаи назаридан бир неча касбда ва лавозимда ишлаш ҳамда ўриндошлик шартномасининг ҳуқуқий моҳияти, назарий асослари, амалий аҳамияти ва ҳуқуқий тартибга солиниши таҳлил этилган. Бозор

иқтисодиёти шароитида аҳолининг қўшимча даромадга бўлган эҳтиёжи, меҳнат бозорида иш берувчилар ва ходимлар ўртасида рақобатнинг ортиши, кадрлардан иш жараёнида самарали фойдаланиш зарурати каби омиллар мазкур институтларнинг ўзаро аҳамиятини оширмоқда. Хозирги кунда ташкилот ва корхоналарда бир неча касбда ва лавозимда ишлаш ходимнинг меҳнат қилиш ҳуқуқини кенгайтириш билан бирга, иш вақти, меҳнатга ҳақ тўлаш, дам олиш вақти, ижтимоий суғурта, пенсия таъминоти каби масалалар билан бевосита боғликдир. Ушбу тезисда мазкур муносабатларнинг ҳуқуқий хусусиятлари, ўзаро мавжуд фарқлари, мкхнат ҳуқуқи соҳасига бўлган таъсири ва қонунчиликни такомиллаштириш йўналишлари очиб берилган.

Калит сўзлар:

меҳнат ҳуқуқи, ижтимоий таъминот ҳуқуқи, ўриндошлик, бир неча касбда ва лавозимда ишлаш, меҳнат шартномаси, иш вақти, ижтимоий суғурта, пенсия таъминоти, меҳнат кафолатлари.

Кириш. Ҳозирги даврда бутун дунёда меҳнат муносабатлари шакл ва мазмун жиҳатидан анча мураккаблашиб бормоқда. Ривожланган ва ривожланаётган давлатларда Иқтисодий муносабатларнинг бозор тамойиллари асосида ривожланиши, мехнат бозорида иш берувчи сифатида хусусий сектор улушининг ортиши, аҳолининг қўшимча даромад манбаига эҳтиёжининг кучайиши фуқароларнинг асосий иш жойидан ташқари бошқа ташкилотда ташқи ёки айнан уша ташкилотда ички ўриндошлик иши билан ҳам банд бўлишини кенгайтирмоқда. Бу ҳолат меҳнат ҳуқуқида бир неча касбда ва лавозимда ишлаш ва ўриндошлик муносабатларининг долзарблигини янада оширади.

Меҳнат ҳуқуқининг асосий вазифаларидан бири фуқароларнинг меҳнат қилиш ҳуқуқини таъминлаш, уларнинг меҳнат эркинлигини кафолатлаш ва меҳнат муносабатларини адолатли тартибга солишдан иборатдир. Бир неча касбда

ва лавозимда ишлаш хамда ўриндошлик институти ана шу вазифаларнинг амалий ифодаси ҳисобланади. Чунки мазкур институтлар орқали шахс ўз меҳнат қобилиятидан самарали фойдаланиш, қўшимча даромад олиш ва касбий фаоллигини ошириш имкониятига эга бўлади.

Шу билан бирга, бу муносабатлар фақат меҳнат ҳуқуқи доирасида эмас, балки ижтимоий таъминот ҳуқуқи нуқтаи назаридан ҳам муҳим ҳисобланади. Чунки қўшимча иш билан боғлиқ меҳнат стажи, иш ҳақи, суғурта бадаллари, нафақалар ва пенсия таъминоти каби масалалар ходимнинг ижтимоий ҳимоя даражасига бевосита таъсир кўрсатади. Демак бундан келиб чиқиб шуни айтиш мумкинки мазкур мавзу илмий ва амалий жиҳатдан муҳим аҳамиятга эга.

Бир неча касбда ва лавозимда ишлаш деганда шахснинг бир вақтнинг ўзида икки ёки ундан ортиқ меҳнат вазифаларини бажариши, тушунилади. Бу ҳолат замонавий меҳнат бозорида кенг тарқалган бўлиб, турли сабабларга кўра юзага келади. Жумладан, қўшимча даромад топиш истаги, мутахассислик бўйича ўз малакасини сақлаш, бошқа соҳаларда ҳам тажриба орттириш, оилавий эҳтиёжларни қоплаш шулар жумласидандир.

Бир неча касбда ва лавозимда ишлаш ҳар доим ҳам бир хил ҳуқуқий шаклга эга бўлмайди. Унинг айрим ҳолатлари бир ташкилот доирасида қўшимча вазифа бажариш тарзида, бошқа ҳолатлари эса алоҳида иш берувчи билан тузилган меҳнат шартномаси асосида намоён бўлади. Шу боис ушбу тушунча кенг маънода қўлланилади ва меҳнат муносабатларининг бир нечта турини қамраб олади.

Мазкур институтнинг ҳуқуқий аҳамияти шундаки, у фуқаронинг меҳнат эркинлиги ҳуқуқини амалга оширишга хизмат қилади. Инсон ўз меҳнат қобилиятини тарзда амалга ошириши, ўз имконияти ва малакаси доирасида татбиқ этиш ҳуқуқига эгадир. Бироқ бу ҳуқуқ мутлақ эмас, чунки ходимнинг

саломатлиги, дам олиш ҳуқуқи, меҳнат муҳофазаси ва ишлаб чиқариш хавфсизлиги билан боғлиқ талаблар ҳам ҳисобга олиниши керак.

Ўриндошлик - бу ходимнинг асосий иш жойидан ташқарида ва асосий иш жойида бўш вақтида бошқа ишни мунтазам равишда ҳақ эвазига алоҳида шартнома асосида бажаришидир. Ўриндошликда ходимнинг асосий иш жойи сақланади ва қўшимча иш алоҳида меҳнат шартномаси асосида амалга оширилади. Шу нуқтаи назардан ўриндошлик меҳнат муносабатларининг махсус ҳуқуқий шакли сифатида намоён бўлади.

Ўриндошликнинг асосий белгилари қуйидагилардан иборат:

ходимнинг асосий иш жойи мавжуд бўлади;

қўшимча иш асосий ишдан бўш вақтда бажарилади;

меҳнат муносабати алоҳида шартнома билан расмийлаштирилади;

меҳнатга ҳақ тўлаш мустақил амалга оширилади;

иш вақти муайян чекловлар доирасида бўлади.

Ўриндошлик ички ва ташқи шаклларда амал қилиши мумкин. Ички ўриндошликда ходим шу ташкилотнинг ўзида қўшимча лавозим ёки вазифани бажаради. Ташқи ўриндошликда эса бошқа ташкилот билан шартома асосида меҳнат муносабатига киришади. Ҳар икки ҳолатда ҳам ходимнинг меҳнат ҳуқуқлари ва ижтимоий кафолатлари қонун асосида ҳимоя қилиниши лозим.

Бир неча касбда ишлаш ва ўриндошликнинг ўзаро фарқи Амалий жиҳатдан мазкур икки тушунча бир-бирига яқин бўлса-да, уларнинг ҳуқуқий табиатида муайян фарқлар мавжуд. Бир неча касбда ишлаш кенг тушунча бўлиб, у шахснинг бир нечта меҳнат вазифаларини бажаришининг турли кўринишларини англатади. Ўриндошлик эса шу муносабатларнинг аниқ ҳуқуқий шакли бўлиб, асосий иш жойидан ташқарида ёки бўш вақтда қўшимча меҳнат қилишни англатади.

Ўриндошлик шартномаси меҳнат шартномасининг мустақил тури сифатида ҳуқуқий аҳамиятга эга. Унда одатий меҳнат шартномасига хос барча элементлар - меҳнат вазифаси, иш ҳақи, иш берувчининг мажбуриятлари, меҳнат шароити, томонларнинг ҳуқуқ ва мажбуриятлари мавжуд бўлади. Бироқ унинг ўзига хос жиҳати шундаки, мазкур шартнома қўшимча меҳнат фаолиятини тартибга солади.

Ўриндошлик шартномаси ходимнинг меҳнат қилиш ҳуқуқини кенгайтиришга хизмат қилади. Айни пайтда у иш берувчи учун ҳам муайян афзалликлар яратади. Хусусан, муайян соҳа ёки лавозим бўйича тўлиқ штат бирлигини жорий этмасдан туриб, мутахассисни жалб қилиш имконини беради. Бу, айниқса, таълим, тиббиёт, маданият, хизмат кўрсатиш ва бошқа соҳаларда муҳим аҳамиятга эга.

Иш вақти ва дам олиш вақти масаласи Ўриндошлик муносабатларида иш вақти энг муҳим ҳуқуқий масалалардан биридир. Чунки қўшимча иш ходимнинг асосий ишидан кейинги бўш вақтида бажарилади, бу эса ўриндошлик асосида ишлашнинг асосий шартидир.

Шунингдек, ўриндошликда ишловчи шахсга нисбатан меҳнат ҳуқуқининг умумий кафолатлари қўлланилиши керак. Жумладан, меҳнат шароити хавфсиз бўлиши, камситишга йўл қўйилмаслиги, меҳнат учун ҳақ ўз вақтида тўланиши, меҳнат низолари вужудга келган тақдирда уларни қонун асосида ҳал қилиш имкони яратилиши шарт.

Ўриндошлик институти ижтимоий таъминот ҳуқуқи билан узвий боғлиқ. Чунки қўшимча иш жойидаги меҳнат муносабатлари ходимнинг ижтимоий муҳофазасига бевосита таъсир қилади. Ижтимоий суғурта тўловлари, вақтинча меҳнатга лаёқатсизлик бўйича нафақалар, ҳомиладорлик ва туғиш билан боғлиқ тўловлар, пенсия таъминоти каби масалаларда қўшимча иш жойидаги даромад ва стаж катта аҳамият касб этади.

Агар ўриндошлик қонуний ва расмий тарзда юритилса, бу ходимнинг ижтимоий ҳимоясини кучайтиради.

Амалдаги муаммолар Амалий фаолиятда ўриндошлик муносабатларида қатор муаммолар учраб туради.

Биринчидан, айрим ҳолатларда меҳнат муносабатининг асл ҳуқуқий табиати нотўғри белгиланади.

Иккинчидан, иш вақти ҳисобини юритишда ноаниқликлар кузатилади. Учинчидан, меҳнатга ҳақ тўлашда ёки ижтимоий суғурта ажратмаларини тўлашда камчиликлар бўлиши мумкин.

Тўртинчидан, пенсия таъминоти учун қўшимча ишдан олинган даромадларни ҳисобга олишда амалиётда айрим мураккабликлар юзага келиши эҳтимолдан холи эмас.

Бу муаммоларнинг асосий сабаби - қонунчилик нормаларини амалда бир хил қўллашнинг етарли эмаслиги, ва айрим иш берувчилар томонидан меҳнат муносабатларини норасмий юритишга уринишлар мавжудлигидир.

Таклиф ва тавсиялар

Мазкур соҳани такомиллаштириш мақсадида қуйидаги таклифларни илгари суриш мумкин:

1. Бир неча касбда ишлаш ва ўриндошлик тушунчаларини қонунчиликда янада аниқ белгилаш, мавжуд норматив-ҳуқуқий ҳужжатларга тегишли қўшимча ва ўзгартиришлар киритиш.
2. Қўшимча меҳнат муносабатларида ходим ҳуқуқларини ҳимоя қилиш бўйича назоратни кучайтириш.
3. Суд ва ҳуқуқни қўллаш амалиёти учун тегишли тушунтиришлар ишлаб чиқиш.

Хулоса

Хулоса қилиб айтганда, бир неча касбда ишлаш ва ўриндошлик шартномаси меҳнат ҳуқуқи ҳамда ижтимоий таъминот ҳуқуқининг ўзаро боғлиқ муҳим институтларидан бири ҳисобланади. Мазкур институтлар ходимнинг меҳнат эркинлигини амалга ошириш, қўшимча даромад олиш, касбий фаоллигини ошириш ва ижтимоий ҳимоясини мустаҳкамлашга хизмат қилади.

Шу билан бирга, ушбу муносабатларнинг қонуний ва аниқ тартибга солиниши ўта муҳимдир. Акс ҳолда иш вақти меъёрларининг бузилиши, меҳнатга ҳақ тўлашда адолатсизлик, каби муаммолар келиб чиқиши мумкин. Шу боис мазкур институтларни янада такомиллаштириш, амалиётни бир хиллаштириш ва ходимларнинг ижтимоий ҳуқуқларини ишончли ҳимоя қилиш ҳуқуқий сиёсатнинг муҳим йўналишларидан бири бўлиб қолмоқда.

Фойдаланилган адабиётлар

1. Ўзбекистон Республикаси Конституцияси.
2. Ўзбекистон Республикасининг Меҳнат кодекси.
3. Ўзбекистон Республикасининг пенсия таъминотига оид қонун ҳужжатлари.
4. Ўзбекистон Республикасининг ижтимоий суғурта ва ижтимоий ҳимоя соҳасига оид норматив-ҳуқуқий ҳужжатлари.
5. Меҳнат ҳуқуқи бўйича дарсликлар ва ўқув қўлланмалар.
6. Ижтимоий таъминот ҳуқуқи бўйича дарсликлар ва илмий адабиётлар.
7. Халқаро меҳнат ташкилоти материаллари.
8. Қўшимча меҳнат ва ўриндошлик масалаларига бағишланган илмий мақолалар.

ENHANCING THE METHODOLOGY FOR ECONOMIC ANALYSIS OF CONSTRUCTION SERVICE EXPENDITURES AT SOCIAL FACILITIES

Gapparov Azim Kayumovich

acting associate professor at the Samarkand institute of economics and service, PhD,

E-mail: *gapparovazim82@gmail.com*

Abstract

The development of social infrastructure requires effective management of financial resources allocated for the construction, reconstruction and modernization of socially significant facilities. In this context, improving the methodology for economic analysis of construction service costs is important for ensuring the rational use of investment resources, controlling project costs and increasing the efficiency of construction activities. This article examines methodological approaches to the economic analysis of construction service costs at social facilities and identifies the main factors affecting their formation.

Keywords

construction services, social facilities, construction costs, economic analysis, cost methodology, cost efficiency, construction resources, estimate cost, factor analysis, digitalization, investment efficiency.

Introduction. Social infrastructure is one of the fundamental components of sustainable regional development. Educational institutions, healthcare facilities, cultural and sports facilities, social service centers and other public infrastructure directly affect the quality and accessibility of social services. Therefore, the efficient use of financial resources allocated for their construction and reconstruction is an important economic and managerial task.

The relevance of this issue is particularly evident in Uzbekistan, where the scale of construction activity has increased significantly in recent years. According to the National Statistics Committee, the volume of completed construction work in Uzbekistan reached **313.8 trillion soums in 2025**, increasing by 14.2% compared with 2024. At the same time, construction of civil facilities amounted to **64.9 trillion soums**, which was 43.9% higher than in 2024.

The expansion of construction activity creates a need for more precise approaches to cost planning and economic analysis. Traditional analysis based mainly on comparison of planned and actual expenditures is insufficient when construction projects involve changing material prices, labor costs, machinery utilization, technological innovations, project delays and changes in project specifications.

The regulatory framework of Uzbekistan is also moving toward more modern approaches. In particular, Resolution No. 165 of the President of the Republic of Uzbekistan dated April 29, 2024 established the transition, from January 1, 2025, to a **"volume" method of assessing construction costs**, taking into account volume and quality indicators. It also established the formation of estimated project costs based on the electronic platform of the **National Classifier of Construction Resources**.

Consequently, the economic analysis methodology should correspond to these changes and provide an integrated assessment of not only the amount of expenditure but also its structure, efficiency, quality and relationship with the physical results of construction.

Methodology.

The research process utilized methods such as systems analysis, comparative analysis, economic-statistical analysis, grouping, induction and deduction, and analysis and synthesis.

Literature review.

The economic analysis of construction service costs has been widely investigated in the fields of construction economics, project management, cost engineering and infrastructure investment. Existing studies demonstrate that construction cost analysis has gradually evolved from traditional estimate-based approaches toward integrated methods incorporating risk, digital technologies, life-cycle costing and data-driven analytical techniques.

Fazil, Lee and Tamyez [1], based on a systematic review of 238 studies published in 23 journals over a 31-year period, emphasize that the accuracy and performance of construction cost estimation are critical for preventing cost overruns. The authors identify organizational, technological and methodological factors affecting the effectiveness of cost estimation. Their findings indicate that improving the reliability of cost estimation requires consideration of both technical characteristics of construction projects and organizational factors associated with the estimation process.

Bottero, Caprioli and Oppio [2] conducted a bibliometric review of research on construction cost estimation and identified major trends in the development of cost assessment methodologies. Their study shows a transition from conventional cost estimation toward approaches based on **Building Information Modelling (BIM), Life Cycle Assessment (LCA), life-cycle costing and multicriteria analysis**. The authors emphasize that cost evaluation should increasingly be considered throughout the project life cycle rather than being limited to the initial investment stage.

The problem of cost overruns is another important direction in the literature. A recent scoping review by [3], based on more than 300 publications and 73 studies selected for detailed analysis, identifies a wide range of factors contributing to time and cost overruns in construction projects. The study demonstrates that cost deviations may result from both internal project-management factors and external economic and institutional conditions. This supports the need for analytical methodologies capable of

decomposing total cost deviations according to their individual determinants rather than simply comparing planned and actual expenditures.

Afana et al. [4] provide a systematic classification of factors associated with construction cost overruns. Their research emphasizes that cost overruns should be analyzed through a structured classification of influencing factors rather than treated as a single aggregated phenomenon. This approach is particularly relevant to social facilities because the cost of publicly financed construction projects is influenced by procurement, design changes, resource prices, project management, delays and other factors.

Another important direction concerns the application of digital technologies to construction cost management. Zhang et al. [5] systematically reviewed the literature on BIM and other digital tools for construction cost management. Their review, based on a dataset of 176 publications, identifies four major research areas: conventional cost estimation methods, new estimation methods and BIM applications, web-based BIM cost estimation and the causes of construction cost overruns. The findings demonstrate the increasing role of digital technologies in both estimating and monitoring construction costs.

Jadhav [6] specifically examined BIM-based cost estimation practices for building projects. The study emphasizes that BIM provides opportunities for improving quantity take-off, visualization and cost-management processes. At the same time, the literature review identifies challenges associated with data integration, cost databases and the practical adoption of BIM among cost-management professionals.

The relationship between BIM and life-cycle cost analysis has also received considerable attention. Alasmari, Martinez-Vazquez and Baniotopoulos [7] conducted a systematic literature review of BIM adoption in life-cycle cost analysis. Their findings indicate that BIM can facilitate the integration of information generated during the

design stage with subsequent operating, maintenance and end-of-life cost analysis. Consequently, the economic assessment of a construction project can be extended beyond initial construction expenditure toward a broader life-cycle perspective.

Similarly, Lu et al. [8] reviewed 45 peer-reviewed studies concerning BIM-based life-cycle cost analysis. The authors found that BIM can support data exchange, precision management, optimization and parameter analysis in life-cycle cost assessment. Their proposed methodological framework also demonstrates the possibility of combining life-cycle cost indicators with environmental and social dimensions of sustainability.

Analysis and results.

The construction of social facilities is characterized by a complex combination of economic, organizational, technological and social factors. Unlike commercial construction projects, the primary objective of social infrastructure projects is not necessarily to maximize direct financial returns. Schools, preschool institutions, healthcare facilities, sports complexes, cultural centers and other social facilities are primarily intended to satisfy public needs and improve the quality and accessibility of social services. Therefore, the economic analysis of costs associated with their construction should consider not only the amount of financial resources spent, but also the volume, quality, functionality and social outcomes achieved.

Construction service costs represent the monetary expression of resources consumed during the preparation, construction, reconstruction, modernization and commissioning of a facility. Their formation is influenced by the architectural and technical characteristics of the facility, construction technology, prices of construction materials, labor costs, machinery utilization, transportation expenses, project duration, financing conditions and organizational efficiency.

From the perspective of economic analysis, construction service costs can be divided into several interconnected components:

$$C = C_m + C_l + C_{mach} + C_t + C_o + C_f + C_q$$

where:

C represents total construction service costs; C_m represents material costs; C_l represents labor costs; C_{mach} represents machinery and equipment costs; C_t represents transportation costs; C_o represents overhead and administrative costs; C_f represents financial costs; and C_q represents quality-related costs.

Such classification makes it possible to move from a general assessment of total expenditure to a detailed analysis of individual cost-forming factors. This is particularly important for social facilities because even relatively small deviations in individual cost elements can result in significant additional expenditure when projects are implemented on a large scale.

The methodological approach proposed in this study is based on the principle of **"resource-cost-result-efficiency"**. According to this approach, each resource used in construction should be assessed in relation to its financial cost and the corresponding physical and qualitative result.

The first stage of economic analysis involves determining the structure of construction service costs. Structural analysis makes it possible to identify which expenditure components have the greatest influence on the total cost of a social facility.

The share of each cost component can be determined using the following formula:

$$S_i = \frac{C_i}{C} \times 100$$

where:

S_i is the share of the i-th cost component, C_i is the corresponding expenditure, and CC is the total construction cost.

For example, if material expenditure constitutes the largest share of total costs, the analytical process should focus on material prices, consumption norms, procurement conditions, transportation losses and inventory management. If labor expenditure has a significant share, labor productivity, working time utilization and wage costs should be analyzed.

Table 1. Proposed analytical structure of construction service costs[1]

Cost component	Main factors influencing costs	Main analytical indicators
Construction materials	Price, quantity, quality, losses	Material cost per unit of output
Labor	Number of workers, wages, productivity	Labor cost and productivity
Machinery and equipment	Operating time, fuel, maintenance	Machinery utilization coefficient
Transportation	Distance, tariffs, fuel consumption	Transportation cost per unit
Overhead	Management, administration, temporary facilities	Overhead cost ratio
Financing	Financing source, interest, payment schedule	Financial cost ratio
Quality-related costs	Defects, rework, delays	Quality loss coefficient

Dynamic analysis should then determine changes in total costs over time. The absolute change is calculated as:

$$\Delta C = C_1 - C_0$$

while the growth rate is:

[1]Author's development

$$T_c = \frac{C_1}{C_0} \times 100$$

where:

C_0 represents the cost in the base period and C_1 represents the cost in the reporting period.

However, simply identifying an increase or decrease in construction costs does not provide sufficient information about efficiency. Therefore, changes in costs should be compared with changes in construction output.

One of the most important methodological problems in construction is the difference between estimated and actual costs. The traditional approach generally determines the deviation between the planned and actual expenditure:

$$\Delta C = C_a - C_p$$

where C_a is actual expenditure and C_p is planned expenditure.

The relative deviation is:

$$D = \frac{C_a - C_p}{C_p} \times 100$$

However, the proposed methodology extends this approach by decomposing the deviation according to its causes.

For material costs, for example:

$$\Delta C_m = \Delta C_{price} + \Delta C_{quantity}$$

Thus, an increase in material expenditure can be caused by either an increase in the price of materials or excessive consumption. These causes require different management decisions.

The same approach can be applied to labor costs:

$$\Delta C_l = \Delta C_{wage} \mid \Delta C_{labor}$$

where:

the first component reflects changes in wage rates and the second reflects changes in labor requirements and productivity.

This approach allows management to distinguish between **external cost changes** and **internal inefficiency**. Such differentiation increases the practical value of economic analysis because the objective is not simply to explain why costs changed, but to identify which factors can be managed or reduced.

The formation of construction costs at social facilities is affected by a large number of factors. For methodological purposes, they can be grouped into five categories.

Resource factors include the quantity and quality of materials, labor resources, machinery, equipment and energy.

Price factors include changes in the prices of construction materials, wages, fuel, machinery services and transportation.

Technological factors include the construction technology used, level of mechanization, design solutions and application of innovative materials.

Organizational factors include procurement management, scheduling, contractor coordination, project management and quality control.

External factors include changes in legislation, market conditions, supply disruptions, climatic conditions and macroeconomic changes.

The total effect of these factors can be expressed as:

$$\Delta C = f(P, Q, L, M, T, O, E)$$

where:

P represents prices, Q represents quantities of resources, L represents labor, M represents machinery, T represents technological factors, O represents organizational factors and E represents external factors.

The practical significance of factor analysis lies in identifying the factors that have the greatest influence on the final cost. This enables construction organizations and project customers to develop targeted measures rather than applying generalized cost-reduction measures.

The use of digital systems enables the following analytical sequence:

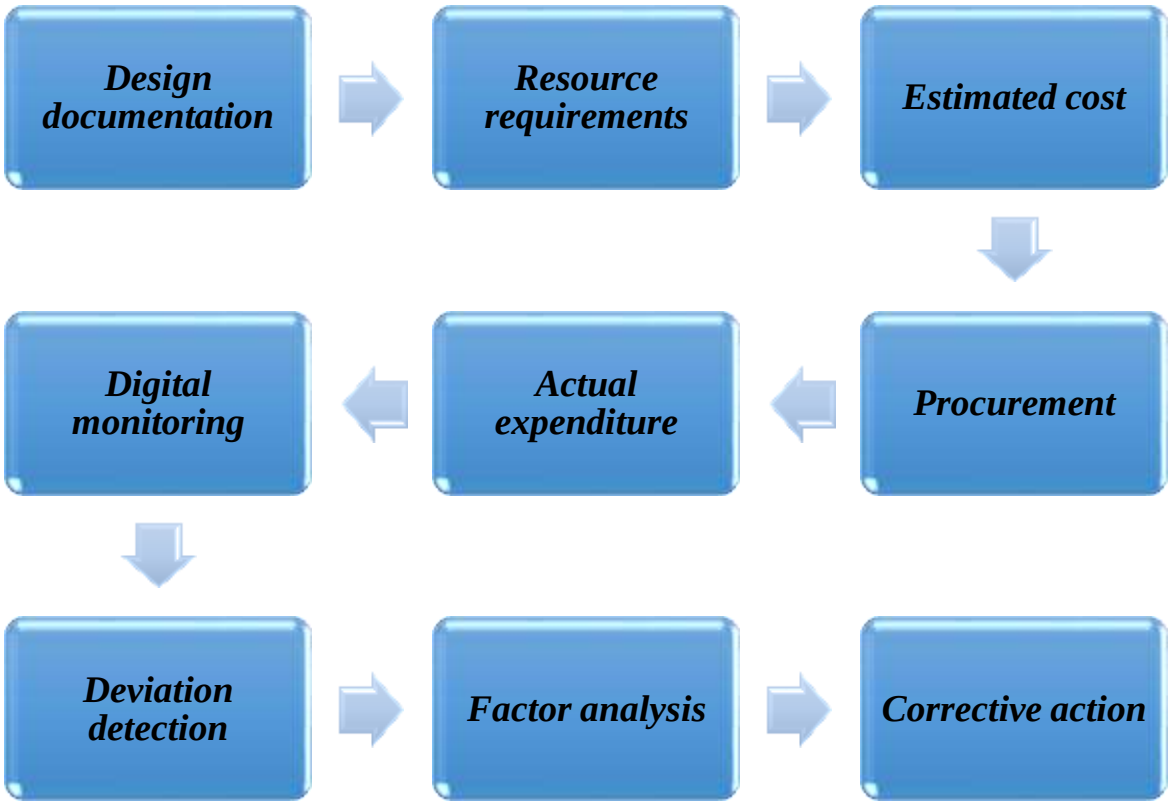


Figure 1. Methodological framework for digital monitoring and economic analysis of construction service costs[2]

This approach changes economic analysis from a predominantly retrospective activity into a continuous management instrument.

[2]Author's development

In particular, digital monitoring makes it possible to compare planned and actual consumption of materials, labor and machinery during construction. Significant deviations can therefore be identified before the completion of the project.

Based on the proposed methodological approaches, an integrated assessment can be formed using four main dimensions:

1. **Financial efficiency** – achievement of planned costs and prevention of unjustified expenditure;
2. **Resource efficiency** – rational use of materials, labor and machinery;
3. **Technological efficiency** – effective application of construction technologies and project solutions;
4. **Quality and social efficiency** – achievement of the required functionality, quality and social capacity.

The improvement of economic analysis of construction service costs at social facilities should focus on the following directions:

- expanding the analytical classification of construction costs;
- introducing systematic planned–actual deviation analysis;
- applying factor decomposition to major cost elements;
- calculating costs per unit of social infrastructure capacity;
- including quality-related losses in economic analysis;
- increasing the use of digital construction-resource databases;
- integrating financial, physical and qualitative indicators;
- conducting continuous monitoring throughout the construction lifecycle;
- strengthening comparative analysis between similar facilities;
- using analytical results as a basis for corrective management decisions.

Consequently, the proposed methodology transforms construction cost analysis from a simple comparison of financial indicators into a **comprehensive system for**

evaluating resource utilization, cost formation, project implementation, quality and social results. This creates a methodological basis for improving the efficiency and transparency of financial resources used in the construction of socially significant facilities.

Conclusion.

The study shows that improving the methodology for economic analysis of construction service costs at social facilities requires a transition from a traditional approach based primarily on comparing planned and actual expenditures to an integrated system that considers financial, resource, technological, organizational, quality and social factors. The complexity of social infrastructure projects necessitates a more comprehensive assessment of the relationship between the resources used, construction costs and the results achieved.

The proposed methodology makes it possible to analyze construction service costs according to their main components, including material, labor, machinery, transportation, overhead, financial and quality-related costs. The use of structural and dynamic analysis allows the main sources of expenditure and changes in their proportions to be identified, while planned–actual analysis and factor decomposition make it possible to determine the specific causes of cost deviations.

A significant methodological improvement is the application of unit-cost indicators. Assessing construction expenditure per square meter, student place, hospital bed, preschool place or other functional capacity indicator provides a more objective basis for comparing social construction projects of different scales. At the same time, the inclusion of quality-related costs associated with defects, rework and construction delays prevents cost savings from being interpreted independently of the quality and functionality of the completed facility.

The study also establishes the importance of digitalization in improving construction cost analysis. The application of electronic construction-resource databases, BIM technologies, ERP systems and digital project-monitoring tools creates opportunities for continuous comparison of planned and actual resource consumption and for timely identification of deviations.

The practical application of this approach can contribute to more rational allocation of financial resources, reduction of unjustified construction expenditures, improvement of resource utilization and strengthening of cost control at social facilities. It can also provide customers, contractors, design organizations and public authorities with a more comprehensive analytical basis for making economic and managerial decisions throughout the construction project lifecycle.

References:

1. Fazil, M. W., Lee, C. K., & Tamyez, P. F. M. (2021). *Cost Estimation Performance in the Construction Projects: A Systematic Review and Future Directions*. International Journal of Industrial Management, 11(1), 217-234. https://journal.ump.edu.my/ijim/article/view/6131

2. Bottero, M., Caprioli, C., & Oppio, A. (2021). *A literature review on construction costs estimation: Hot topics and emerging trends*. **International Journal of Construction Management**. https://re.public.polimi.it/handle/11311/1167740?utm_source

3. *Causes of time and cost overruns in construction projects: a scoping review*. (2023). **International Journal of Construction Management**, 24(10). https://www.tandfonline.com/doi/full/10.1080/15623599.2023.2252288

4. Afana, O., Al Zubaidi, R., Abu Dabous, S., & Ibrahim, F. (2024). *Categories and Factors of Cost Overrun in Construction Projects: A Systematic Review*. **Engineering, Technology & Applied Science Research**, 14(6), 18330-18347.

https://etasr.com/index.php/ETASR/article/view/9006?utm_source

5. *BIM and Digital Tools for State-of-the-Art Construction Cost Management*. (2022). **Buildings**, 12(4), 396. https://www.mdpi.com/2075-5309/12/4/396?utm_source

6. Jadhav, T. (2024). *Review of cost estimation practices for building projects using BIM*. **Sustainable Engineering**, 1(1). https://jurcon.ums.edu.my/ojums/index.php/SE/article/view/5218?utm_source

7. Alasmari, E., Martinez-Vazquez, P., & Baniotopoulos, C. (2022). *A Systematic Literature Review of the Adoption of Building Information Modelling (BIM) on Life Cycle Cost (LCC)*. **Buildings**, 12(11), 1829. https://www.mdpi.com/2075-5309/12/11/1829?utm_source

8. Lu, K., Deng, X., Jiang, X., Cheng, B., & Tam, V. W. Y. (2023). *A review on life cycle cost analysis of buildings based on building information modeling*. **Journal of Civil Engineering and Management**. https://journals.vilniustech.lt/index.php/JCEM/article/view/18473?toggle_hypothesis=off&utm_source

Termination of Criminal Proceedings with the Consent of the Individual Without Determining Guilt: Problems and Ways to Improve Legislation

Bayniyazova Elmira Sarsenbay kyzy
Senior Lecturer, Department of Legal Disciplines, M. S. Vosikova Academic Lyceum under Tashkent State University of Law

Abstract

This paper analyzes the problems associated with terminating criminal proceedings with the consent of the individual without determining guilt. It examines key law enforcement issues concerning the grounds for such termination, including gaps in the regulation of obtaining consent from a suspect or accused person. It also considers issues related to protecting victims' rights when criminal proceedings are terminated with the consent of a suspect or accused person.

Keywords

termination of proceedings, consent of the individual, guilt, grounds for termination of proceedings, accused person, suspect, protection of victims' rights.

Прекращение уголовного дела с согласия лица без решения вопроса о его виновности: проблемы и пути совершенствования законодательства

Байниязова Эльмира Сарсенбай кызы
старший преподаватель кафедры правовых дисциплин академического лицея имени М. С. Восиковой при Ташкентском государственном юридическом университете

Аннотация. В работе анализируются проблемы прекращения уголовного дела с согласия лица без решения вопроса о его виновности, исследованы ключевые проблемы правоприменения основании для прекращения дела с согласия лица без решения вопроса о его виновности, включая пробелы в

регламентации получения согласия подозреваемого или обвиняемого, рассматриваются вопросы защиты прав потерпевших при прекращении уголовного дела с согласия подозреваемого или обвиняемого.

Ключевые слова: прекращение дела, согласие лица, виновность, основания прекращение дела, обвиняемый, подозреваемый, защита прав потерпевшего.

Прекращение уголовного дела с согласия лица без решения вопроса о его виновности представляет собой институт уголовного процесса, применяемый, в частности, при признании, что ко времени расследования или рассмотрения дела в суде деяние потеряло характер общественно опасного либо вследствие изменения обстановки лицо перестало стать общественно опасным, также при том, что лицо, впервые совершившее преступление, не представляющее большой общественной опасности, или менее тяжкое преступление, явилось с повинной, чистосердечно раскаялось, активно способствовало раскрытию преступления и загладило причиненный вред, другим основанием прекращения дела с согласия лица без решения вопроса о виновности считается целесообразность передачи материалов дела на рассмотрение в комиссию по вопросам детей, с учетом характера совершенного деяния, личности лица, впервые совершившего преступление, не представляющее большой общественной опасности.

Указанный институт направлен на реализацию принципов гуманизма, процессуальной экономии и справедливости. Вместе с тем его применение вызывает ряд теоретических и практических вопросов, связанных с правовой природой согласия лица, пределами усмотрения органов расследования и суда, а также обеспечением права на защиту.

В научной литературе неоднократно отмечалось, что прекращение уголовного дела с согласия лица без решения вопроса о его виновности относится к не реабилитирующим основаниям прекращения дела и затрагивает права и

законные интересы лица, поскольку не влечет его оправдания и не исключает факта совершения общественно опасного деяния. Так, профессор Л.В.Головко указывает, что прекращение уголовного дела по таким основаниям представляет собой особую форму завершения уголовного процесса, при которой государство отказывается от дальнейшего уголовного преследования по мотивам целесообразности, не разрешая вопрос о виновности лица в обвинительном или оправдательном порядке[1]. Схожую позицию занимал бывший Председатель Верхового Суда РФ и ученый-правовед В.М. Лебедев, отмечая, что согласие обвиняемого на прекращение уголовного дела должно рассматриваться как важнейшая гарантия защиты его прав, поскольку применение не реабилитирующих оснований способно повлечь для лица определенные правовые и социальные последствия[2]. Дача лицом согласия на прекращение уголовного дела означает, что лицо согласна на прекращение дела по этому основанию, но не признает совершения преступления при этом принимает все процессуальные последствия такого прекращения. Поэтому необходимо разъяснить последствия прекращение дела подозреваемому или обвиняемому. Недаром законодатель обращает внимание на разъяснение последствия прекращения уголовного дела без решения вопроса о виновности в соответствующих статьях уголовно-процессуального кодекса Республики Узбекистан. Несмотря на то, что при прекращении уголовного дела непосредственно затрагиваются права и интересы потерпевшей стороны, согласие потерпевшего на прекращение дела полностью игнорируются. Уголовно-процессуальный Кодекс Республики Узбекистан в отличие от Уголовно-процессуального кодекса Республики Казахстан не содержит статью, закрепляющую недопустимость прекращение дела против воли

[1] Курс уголовного процесса / Под ред. д.ю.н., проф. Л.В. Головко. - 2-е изд., испр. - М.:Статут, 2017. https://www.consultant.ru/edu/student/download_books/book/golovko_kurs_ugolovnogo_processa/

[2] Научно-практический комментарий к уголовно-процессуальному кодексу РФ / под общей редакцией В. М. Лебедева, В. П. Божьева. - 9-е изд., перераб. и доп. - Москва : Издательство Юрайт, 2014 URL: https://urait.ru/bcode/378986

потерпевшего[3]. Было бы целесообразно дополнить статью 374 УПК Республики Узбекистан частью согласно которому прекращение уголовного дела с согласия подозреваемого или обвиняемого без решения вопроса о его виновности не допускается вопреки воле потерпевшего, в таком случае производство должно продолжатся в обычном порядке.

Одной из наиболее существенных проблем является отсутствие достаточной регламентации порядка получения согласия подозреваемого или обвиняемого. На практике согласие нередко оформляется в виде краткой подписи в постановлении о прекращении дела без надлежащего разъяснения правовых последствий. Между тем Верховный суд РУЗ не определил правовую позицию прекращения уголовного дела с согласия лица без решения вопроса о виновности, нет ни единого постановления затрагивающая вопросы прекращения дела с согласия лица без решения вопроса о его виновности и порядке получения согласия, тем самым оставляя на усмотрение правоприменителя вопрос о прекращении по этим основаниям. В целях минимизации рисков следственного давления, и обеспечения конституционных гарантий прав личности, предлагается совершенствовать статью 374 УПК Республики Узбекистан, дополнив её самостоятельной частью пятой следующего содержания: «Прекращение уголовного дела с согласия лица без решения вопроса о виновности допускается исключительно при наличии выраженного в письменной форме добровольного и осознанного согласия подозреваемого, обвиняемого. Перед получением согласия следователь обязан в присутствии защитника разъяснить лицу материально-правовую природу и правовые последствия прекращения дела по не реабилитирующим основаниям, включая отсутствие права на реабилитацию и возмещение вреда, а также право

[3] Уголовно-процессуальный кодекс Республики Казахстан от 4 июля 2014 года № 231-V (с изменениями и дополнениями по состоянию на 12.08.2026 г.)
https://adilet.zan.kz/rus/docs/Z970000206_

требовать продолжения производства по делу в общем порядке. О фиксации согласия составляется протокол с соблюдением требований статьи 90 настоящего Кодекса, подписываемый следователем, подозреваемым, обвиняемым и его защитником».

Основания прекращения уголовного дела с согласия лица без решения вопроса о виновности закрепляются в ст.84 УПК РУз, в котором закрепляется, что дело подлежит прекращению если ко времени расследования или рассмотрения дела в суде деяние потеряло характер общественно опасного либо вследствие изменения обстановки лицо перестало стать общественно опасным, также при деятельном раскаянии подозреваемого/обвиняемого и передачей материалов дела на рассмотрение комиссии по вопросам детей при совершении преступлении детьми не представляющей большой общественной опасности[4]. Однако, нигде не закрепляется, что понимается именно под «изменением обстановки» и как определяется «общественная опасность лица». К тому же ни в постановлении либо в самом УПК не упоминаются, что поднимается под «деятельным раскаянием» и при прекращении дела под этим основанием обязательно ли выполнить все условия, закрепленные в этой статье или же достаточно выполнения некоторых. Отсутствие единого руководящего разъяснения приводит к тому, что ведомственные подходы и трактовки оценочных понятий существенно различаются. Постановление Пленума Верховного суда - единственный правовой инструмент, способный дать универсальные и обязательные для всех правоприменителей правила толкования. Во многих правовых системах, например, в РФ действует Постановление Пленума ВС РФ № 19 «О применении судами законодательства, регламентирующего основания и порядок освобождения

[4] Уголовно-процессуальный кодекс Республики Узбекистан: утв. Законом Республики Узбекистан от 22 сентября 1994 г. № 2013-XII; введён в действие с 1 апреля 1995 г. (с изменениями и дополнениями). URL: https://lex.uz/docs/111463

от уголовной ответственности» который успешно функционируют и минимизируют ошибки правоприменения[5]. Принятие отдельного Постановления Пленума Верховного суда необходимо не просто для толкования статей, предусматривающих прекращение уголовного дела без решения вопроса о виновности, а для создания единого, прозрачного и защищенного от злоупотреблений механизма уголовно-правового компромисса, где права личности как обвиняемого, так и потерпевшего будут защищены четкими процессуальными фильтрами, исключающими правовой субъективизм. Предлагается целесообразным принять отдельное постановление Пленума Верховного Суда Республики Узбекистан «О практике применении судами законодательства регулирующего основания и порядок прекращения уголовного дела с согласия лица без решения вопроса о виновности».

СПИСОК ИСПОЛЬЗОВАННОЙ ЛИТЕРАТУРЫ:

1. Курс уголовного процесса / Под ред. д.ю.н., проф. Л.В. Головко. - 2-е изд., испр. - М.: Статут, 2017. https://www.consultant.ru/edu/student/download_books/book/golovko_kurs_ugolovnogo_processa/

2. Научно-практический комментарий к уголовно-процессуальному кодексу РФ / под общей редакцией В. М. Лебедева, В. П. Божьева. - 9-е изд., перераб. и доп. - Москва : Издательство Юрайт, 2014 URL: https://urait.ru/bcode/378986

3. Уголовно-процессуальный кодекс Республики Казахстан от 4 июля 2014 года № 231-V (с изменениями и дополнениями по состоянию на 12.08.2026 г.) https://adilet.zan.kz/rus/docs/Z970000206_

[5] Постановление Пленума Верховного Суда Российской Федерации от 27 июня 2013 г. № 19 «О применении судами законодательства, регламентирующего основания и порядок освобождения от уголовной ответственности» // Российская газета. 2013, 5 июля https://rg.ru/documents/2013/07/05/primenenie-dok.html

4. Уголовно-процессуальный кодекс Республики Узбекистан: утв. Законом Республики Узбекистан от 22 сентября 1994 г. № 2013-XII; введён в действие с 1 апреля 1995 г. (с изменениями и дополнениями). URL: https://lex.uz/docs/111463

5. Постановление Пленума Верховного Суда Российской Федерации от 27 июня 2013 г. № 19 «О применении судами законодательства, регламентирующего основания и порядок освобождения от уголовной ответственности» // Российская газета. 2013, 5 июля https://rg.ru/documents/2013/07/05/primenenie-dok.html

Long-Term Hydrological Changes in the Aydar-Arnasay Lake System and Modern Methods for Their Study

Author: Jumayev Zohid Zarif o‘g‘li
National Research University “TIIAME”

Annotation.

This article examines the long-term hydrological changes of the Aydar-Arnasoy lake system (AALS) in Uzbekistan and reviews modern methods of studying them. The lake system is an artificial-natural complex in the Arnasoy depression on the eastern edge of the Kyzylkum desert, in the Jizzakh and Navoi regions. It began to form in 1969, when about 21.8 cubic kilometres of water were discharged from the Chardara reservoir into the depression. Today the lakes are fed mainly by collector-drainage water from irrigated lands, together with part of the surplus Syr Darya flow. The system was included in the Ramsar List of Wetlands of International Importance in 2008.

The study is based on monthly and annual monitoring data for 2005–2025, collected at hydrological posts on four main collectors: Oq buloq, Chegaraviy, QLI and ARK-1. The analysis covers water discharge, water volume and mineralization. The combined annual inflow varied between about 515 and 900 million cubic metres and showed no clear long-term trend. Its distribution among the collectors changed: the share of the Oq buloq collector rose from about 25 per cent in 2005–2018 to about 43 per cent in 2019–2025, while the QLI share fell from about 56 per cent to about 43 per cent. The volume-weighted mineralization was 2.95 g/l in 2005–2012, 3.73 g/l in 2013–2018 and 3.32 g/l in 2019–2025, and the total salt load increased by about 18 per cent. Water balance models, groundwater exchange and remote sensing are discussed as methods for future research. The results show that sustainable management of the lake system requires control of both water volume and water quality.

Keywords

Aydar-Arnasoy lake system, hydrological change, collector-drainage water, mineralization, salt load, water balance, remote sensing.

Aydar-Arnasoy ko‘llar tizimining ko‘p yillik gidrologik o‘zgarishlari va ularni tadqiq etishning zamonaviy metodlari

Muallif: Jumayev Zohid Zarif o‘g‘li
TIQXMMI Milliy tadqiqot universiteti
Elektron pochta: zohidjumayev705@gmail.com
Telefon: +998 93 340 29 95

Annotatsiya.

Maqolada Aydar-Arnasoy ko‘llar tizimining (AAKT) ko‘p yillik gidrologik o‘zgarishlari va ularni o‘rganishning zamonaviy metodlari tahlil qilinadi. Tizim Jizzax va Navoiy viloyatlari hududida, Qizilqum cho‘lining sharqiy chetidagi Arnasoy botig‘ida joylashgan sun’iy-tabiiy ko‘l majmuasidir. U 1969 yilda Chordara suv omboridan taxminan 21,8 km³ suv shu botiqqa tashlangach shakllana boshlagan. Hozir ko‘llar asosan sug‘oriladigan yerlardan chiqadigan kollektor-drenaj suvlari hamda Sirdaryoning ortiqcha oqimining bir qismi hisobiga to‘yinadi. Tizim 2008 yilda Ramsar konventsiyasi ro‘yxatiga kiritilgan.

Tadqiqot Oq buloq, Chegaraviy, QLI va ARK-1 kollektorlaridagi gidrologik postlarning 2005–2025 yillardagi oylik va yillik ma’lumotlariga asoslangan. Tahlilda suv sarfi, suv hajmi va mineralizatsiya ko‘rsatkichlari o‘rganilgan. To‘rt kollektordan keladigan yillik umumiy suv kirimi taxminan 515 dan 898 mln m³ gacha tebrangan, ammo uzoq muddatli aniq tendensiya kuzatilmagan. Kirim tarkibi esa o‘zgargan: Oq buloq ulushi 2005–2018 yillarda taxminan 25 foizdan 2019–2025 yillarda 43 foizga oshgan, QLI ulushi 56 foizdan 43 foizga tushgan. Hajmga tortilgan o‘rtacha mineralizatsiya 2005–2012 yillarda 2,95 g/l, 2013–2018 yillarda 3,73 g/l, 2019–2025 yillarda 3,32 g/l bo‘lgan, tuz miqdorining ortishi esa taxminan 18 foizga ko‘paygan. Maqolada suv balansi modellari,

yer osti suvlari bilan o‘zaro ta’sir va masofadan zondlash usullari ham ko‘rib chiqiladi. Xulosa shuki, ko‘l tizimini barqaror boshqarish uchun suv hajmi va suv sifatini birgalikda nazorat qilish zarur.

Kalit so‘zlar: Aydar-Arnasoy ko‘llar tizimi, gidrologik o‘zgarish, kollektor-drenaj suvlari, mineralizatsiya, tuz miqdorining ortishi, suv balansi, masofadan zondlash.

Аннотация.

В статье рассматриваются многолетние гидрологические изменения системы озёр Айдар-Арнасай (ААСО) в Узбекистане и современные методы их изучения. Система представляет собой искусственно-природный комплекс озёр в Джизакской и Навоийской областях, в Арнасайской впадине на восточной окраине Кызылкума. Формирование системы началось в 1969 году, когда в эту впадину было сброшено около 21,8 км³ воды из Чардаринского водохранилища. В настоящее время озёра питаются главным образом коллекторно-дренажными водами с орошаемых земель и частью избыточного стока Сырдарьи. В 2008 году система включена в Список водно-болотных угодий, имеющих международное значение, по Рамсарской конвенции.

Исследование основано на месячных и годовых данных гидрологических постов за 2005–2025 годы на четырёх основных коллекторах: Ок булак, Чегаравий, QLI и АРК-1. Суммарный годовой приток колебался примерно от 515 до 900 млн м³ без явной долгосрочной тенденции. Однако распределение притока между коллекторами изменилось: доля Ок булака выросла примерно с 25 процентов в 2005–2018 годах до 43 процентов в 2019–2025 годах, а доля QLI снизилась с 56 до 43 процентов. Средневзвешенная по объёму минерализация составила 2,95 г/л в 2005–2012 годах, 3,73 г/л в 2013–2018 годах и 3,32 г/л в 2019–2025 годах, суммарная солевая нагрузка увеличилась примерно на 18 процентов. В статье также рассматриваются модели водного баланса, обмен с грунтовыми водами и

дистанционное зондирование. Результаты показывают, что устойчивое управление системой требует контроля как объёма, так и качества воды.

Ключевые слова: система озёр Айдар-Арнасай, гидрологические изменения, коллекторно-дренажные воды, минерализация, солевая нагрузка, водный баланс, дистанционное зондирование.

KIRISH

Markaziy Osiyoda suv resurslaridan jadal foydalanish Orol dengizining qurishiga olib keldi: dengizga kelayotgan suv kamayib, uning sho‘rligi oshdi [1]. Sug‘oriladigan maydonlarning kengayishi bilan qishloq xo‘jaligidan qaytgan kollektor-drenaj suvlari tabiiy pastliklarga tashlana boshladi. Shunday sun’iy-tabiiy ekotizimlardan biri Aydar-Arnasoy ko‘llar tizimi (AAKT) bo‘lib, u Jizzax va Navoiy viloyatlari hududida, Qizilqum cho‘lining sharqiy qismidagi Arnasoy botig‘ida joylashgan.

Tizimning hozirgi ko‘rinishi 1969 yilda shakllana boshlagan. O‘sha yili Chordara suv omboridan Arnasoy botig‘iga taxminan 21,8 km³ suv tashlangan [2]. Bundan oldin bu yerda kichik Tuzkon sho‘r ko‘li mavjud edi [1]. Keyingi yillarda ko‘llarning suv manbai asosan sug‘orish zonasidan keladigan kollektor-drenaj suvlari va Sirdaryoning ortiqcha oqimi bo‘ldi [3].

Tizimning xalqaro ahamiyati katta. AAKT 2008 yil 20 oktyabrda Ramsar konventsiyasi ro‘yxatiga kiritilgan. Uning maydoni 527 100 gektar bo‘lib, Afrika–Yevrosiyo va Markaziy Osiyo qushlar yo‘llarining kesishgan joyida joylashgan, hududda 100 dan ortiq suv qushlari turi qayd etilgan [4]. Iqtisodiy jihatdan ham tizim ahamiyatli: Orol dengizida tijorat baliq ovi to‘xtagach (1983), AAKT asosiy baliqchilik ko‘liga aylangan, ammo 2006 yilga kelib ovlanish 728 tonnagacha kamaygan [1].

Tizimning suv rejimi beqaror. Rasmiy ma’lumotlarga ko‘ra, tizim hajmi 2006 yilda 42,1 mlrd m³ bo‘lgan, 2023 yilga kelib esa 36,8 mlrd m³ gacha kamaygan, sath esa taxminan 2 metrga tushgan [5]. Wahyuni va hammualliflarning tahlilida ko‘l sathi yiliga 0,1 dan 2,9 metrgacha o‘zgargan, bu tebranish atrofdagi yer osti suvlari sathiga ham ta’sir qilgan [6]. Tuz masalasi ham dolzarb: Erkabaev va hammualliflarning 2024 yildagi tadqiqotida tizim suvining umumiy mineralizatsiyasi me’yordan 25 martadan ortiq ekani qayd etilgan [7].

Tizimni o‘rganish bo‘yicha ilmiy ishlar mavjud. Kulmatov va hammualliflar 2013 yilda suv resurslarining miqdoriy va sifat bahosini bergan [8], 2022 yilda esa suv resurslari balansi modelini rivojlantirgan [9]. Akhmadjonova tizimning gidrologik tavsifi va gidrokimyoviy tahlilini bergan [10]. Wahyuni va hammualliflar ko‘l suv balansi modeli yordamida yer osti suvi almashinuvini hisoblab, mart–iyul oylarida yer osti suvining ko‘lga kirishini, avgust–fevralda esa chiqishini aniqlagan [11]. Biroq bu tadqiqotlar odatda alohida davr, alohida jihat yoki alohida model doirasida olib borilgan. Sirojiddinova va hammualliflar ham gidrologik, gidrokimyoviy va ekologik natijalarni bitta suv balansi–ekotizim zanjirida umumlashtiruvchi sharhlar yetarli emasligini qayd etgan [3].

Shu sababli, 2005–2025 yillarda AAKT ni oziqlantiruvchi asosiy kollektor zovurlarining gidrologik postlarida olingan kuzatuv ma’lumotlari muhim ahamiyatga ega . Ushbu ma’lumotlar to‘rtta asosiy zovur (Oq buloq, Chegaraviy, QLI va ARK-1) bo‘yicha yillik kirim, hajm va mineralizatsiyani o‘z ichiga oladi. Ularning yillik umumiy kirimi 515 dan 898 mln m^3 gacha o‘zgargan, lekin kirim tarkibi sezilarli o‘zgargan .

Tadqiqotning maqsadi: 2005–2025 yillarda AAKT ga kirayotgan suvning hajmi, tarkibi va mineralizatsiyasidagi ko‘p yillik gidrologik o‘zgarishlarni aniqlash hamda ularni o‘rganishning zamonaviy metodlarini tahlil qilish.

Vazifalar: (1) zovurlar bo‘yicha yillik kirim va hajm dinamikasini tahlil qilish; (2) kirayotgan suvning mineralizatsiyasi va tuz miqdorining ortishining o‘zgarishini baholash; (3) ma’lumotlarning sifatini tekshirish va natijalardagi cheklovlarni aniqlash; (4) suv balansi modellashtirish, yer osti suvlari o‘zaro ta’siri va masofadan zondlash metodlarini tahlil qilish.

Ilmiy yangilik shundaki, bir nechta asosiy kollektor zovurining uzoq muddatli monitoring ma’lumotlari bitta tizimda hajm va sifat ko‘rsatkichlari bo‘yicha birgalikda tahlil qilinadi. Amaliy ahamiyati esa Chordara suv omboridan tashlamalarni

rejalashtirish, kollektor-drenaj oqimini boshqarish va tizimning ekologik holatini kuzatish uchun ilmiy asos berishdan iborat.

2. Tizimning shakllanishi va tabiiy-geografik xususiyatlari.

Aydar-Arnasoy ko‘llar tizimi Qizilqum cho‘lining janubi-sharqiy qismida, Sirdaryoning o‘rta oqimi yaqinidagi past botiqlarda joylashgan. Tizim Aydarko‘l, Tuzkon va Arnasoy ko‘llaridan iborat bo‘lib, ularning umumiy maydoni manbalarda taxminan 4 000 km² deb ko‘rsatiladi [3]. Ilmiy adabiyotlarda tizim tabiiy emas, balki inson faoliyati natijasida shakllangan deb baholanadi: Sirdaryo oqimining boshqarilishi, Chordara suv omboridan ortiqcha suvning tashlanishi va kollektor-drenaj suvlarining to‘planishi uning vujudga kelishini belgilagan [3].

Tizim tarixida 1969 yil muhim burilish nuqtasi bo‘lgan. Gudalovning tadqiqotiga ko‘ra, Chordara suv ombori qurilishi va Mirzacho‘lning o‘zlashtirilishidan oldin Aydar, Arnasoy va Tuzkon alohida kichik ko‘llar bo‘lgan [2]. 1969 yil fevral–iyul oylarida Chordara suv omboridan Aydar–Arnasoy havzasiga taxminan 15,3 mlrd m³ suv oqib kelgan. 1969 yil fevralidan 1970 yil martigacha Arnasoy gidroelektr stansiyasi orqali jami 21,8 km³ suv tashlangan [2]. Shu tashlamalar natijasida ko‘llar yagona tizimga birlashgan: tadqiqotda Aydarko‘l sathi 10 metrga, Tuzkon sathi esa 22 metrga ko‘tarilgani qayd etilgan [2].

Tizimning gidrologik rejimi yil davomida ham, yillar davomida ham o‘zgaruvchan. Gudalov ma’lumotlariga ko‘ra, ko‘l sathining yillik tebranishi 0,8 dan 2,3 metrgacha bo‘lgan, eng yuqori sath odatda may oyida kuzatilgan [2]. Wahyuni va hammualliflar uzoq yillik kuzatuvlarda sath 0,1 dan 2,9 metrgacha yillik o‘zgarishga ega ekanini ko‘rsatgan. Bu tebranish suv yuzasi maydonining kengayishi yoki torayishiga va atrofdagi yer osti suvlari sathining o‘zgarishiga olib kelgan [6].

Tizimga kiruvchi suvning manbalari bir nechta. Sirojiddinova va hammualliflarning ma’lumotiga ko‘ra, tizimga Chordara suv omboridan kelgan Sirdaryo suvi, kollektor-drenaj suvlari, yer osti suvlari va atmosfera yog‘inlari kiradi [3]. Suv balansi tenglamasi $\Delta S = Qkir + P + Gkir - E - Qchiq - Gchiq$ ko‘rinishida yoziladi, bu yerda ΔS – suv zahirasining o‘zgarishi, Q – daryo yoki kanal oqimi, P – yog‘in, G – yer osti suvi, E – bug‘lanish [3]. Tahlillar shuni ko‘rsatadiki, tizimdan chiqimning asosiy qismi bug‘lanish hisobiga bo‘ladi [3]. Yer osti suvining roli mavsumga bog‘liq: mart–iyul oylarida u ko‘lga kirim beradi, avgust–fevralda esa undan chiqim bo‘ladi [11].

Tizim quruq iqlim sharoitida joylashgan. Yog‘in miqdori kam, bug‘lanish esa juda yuqori, shuning uchun kirim kamaysa ko‘l sathi va hajmi tez pasayadi. Erkabaev va hammualliflar tizimni drenajsiz (suvi tashqariga chiqmaydigan) ko‘llar majmuasi deb ta’riflagan va uning kollektor-drenaj tarmog‘i hamda Chordara suv omboridan keladigan oqim hisobiga to‘yinishini qayd etgan [7].

Tizim suvining kimyoviy tarkibi ham o‘ziga xos. Kollektor-drenaj suvlari eriydigan tuzlarni olib kelgani uchun, bug‘lanish kuchli bo‘lgan sharoitda ko‘l suvining sho‘rligi oshadi [3]. Mazkur tadqiqotda kirayotgan suvning mineralizatsiyasi 2 dan 5 g/l gacha ekani kuzatilgan . Bu ko‘rsatkich umumiy qabul qilingan tasnifga ko‘ra sho‘r-chuchuk suv oralig‘iga to‘g‘ri keladi. Ramsar ma’lumotnomasida esa tizim "chuchuk suvli ko‘llar" sifatida tavsiflangan [4]. Bu tafovut tizimning sho‘rlanish dinamikasini alohida tahlil qilish zarurligini ko‘rsatadi.

Tizim biologik jihatdan ham muhim. Ramsar ma’lumotlariga ko‘ra, u Afrika–Yevrosiyo va Markaziy Osiyo qushlar yo‘llarining kesishgan joyida joylashgan va 100 dan ortiq suv qushlari turini o‘ziga jalb qiladi [4]. Qirg‘oqlarda qamish jamoalari, shuvoq va tamarisk o‘sadi. Shu bilan birga, Groll va hammualliflar tizimni baliqchilik hududi sifatida ham tavsiflagan: Orol dengizida tijorat baliq ovi to‘xtagach, Aydar-Arnasoy tizimi yirik baliqchilik hududiga aylangan [1].

Xulosa qilib aytganda, tizim tabiiy-geografik jihatdan quruq cho‘l botig‘ida, inson faoliyati bilan shakllangan va sug‘orish tizimi bilan bevosita bog‘liq sun’iy-tabiiy ekotizimdir. Uning suv balansi kirim manbalari, bug‘lanish va yer osti suvi o‘rtasidagi nisbatga, sho‘rlanish esa kirayotgan suvning tarkibiga bog‘liq.

3. Materiallar va tadqiqot metodlari.

Tadqiqot ob’ekti Aydar-Arnasoy ko‘llar tizimiga suv kiritadigan kollektor zovurlaridir. Ma’lumotlar gidrologik postlarda kuzatilgan va yetti alohida jadval ko‘rinishida tayyorlangan . Jadvallarning qamrovi bir xil emas, shuning uchun har bir zovur uchun foydalanish mumkin bo‘lgan yillar 1-jadvalda ko‘rsatilgan.

1-jadval. Ma’lumotlarning qamrovi

Zovur	Qamrov	Asosiy tahlilda	Izoh
Oq buloq	2005–2025	Ha	To‘liq qator
Chegaraviy	2005–2025	Ha	2014 yil ma’lumoti sarf bilan mos emas
QLI	2005–2025	Ha	To‘liq qator
ARK-1	2005–2025	Ha	To‘liq qator
TSK-12	2015–2025	Qo‘shimcha	Qisqa qator
TSK-11	2015–2025	Qo‘shimcha	Qisqa qator
ЦГК (Sirdaryo balansi)	2008–2025 (uzilishlar bilan)	Yo‘q	2020–2021 yillar yo‘q, 2019 yil nomuvofiq,

Zovur	Qamrov	Asosiy tahlilda	Izoh
			2022–2025 yillarda mineralizatsiya yo‘q

Har bir zovur jadvalida oylar bo‘yicha o‘rtacha suv sarfi (m³/s), oylik suv hajmi (mln m³), yil boshidan yig‘ilgan hajm va oylik mineralizatsiya (g/l) berilgan.

To‘rtta zovur (Oq buloq, Chegaraviy, QLI, ARK-1) asosiy tahlil uchun tanlandi, chunki ularning 2005–2025 yillik qatorlari to‘liq va ular tizimga kiruvchi asosiy kirimning katta qismini tashkil etadi. TSK-12 va TSK-11 qatorlari qisqa bo‘lgani uchun faqat qo‘shimcha ma’lumot sifatida ko‘rib chiqiladi. ЦГК zovuri boshqa miqyosdagi oqimni ko‘rsatgani va yozuvlarida uzilishlar bo‘lgani uchun asosiy tahlildan chiqarildi.

Oylik suv hajmi sarf, oydagi kunlar soni va sekundlar sonining ko‘paytmasi sifatida hisoblandi: $V = Q \times n \times 86\,400 / 10^6$ (mln m³), bu yerda Q – oylik o‘rtacha sarf (m³/s), n – oydagi kunlar soni. Yillik suv hajmi oylik hajmlar yig‘indisi sifatida olindi. Tekshirish uchun Oq buloq zovurining 2025 yildagi sarfi (10,38 m³/s) yillik 327 mln m³ ga mos kelishi aniqlandi.

Yillik mineralizatsiya suv hajmiga tortilgan o‘rtacha ko‘rsatkich sifatida hisoblandi. Davr uchun vaznli mineralizatsiya $\bar{M} = \Sigma(V_i \times M_i) / \Sigma V_i$ formulasi bilan aniqlandi, bu yerda V_i – yillik suv hajmi, M_i – yillik mineralizatsiya. Tuz miqdorining ortishi har bir yil uchun $L = V \times M$ ko‘rinishida hisoblandi; 1 mln m³ × 1 g/l = 1 ming tonna tuz.

Yillararo tebranish koeffitsienti (CV) yillik suv hajmlari uchun o‘rtacha kvadratik og‘ishning o‘rtachaga nisbati sifatida aniqlandi. Zovurlarning umumiy kirimdagi ulushi esa zovur hajmining to‘rtta zovur yig‘indisiga nisbati sifatida hisoblandi.

Tahlil uchta davrga bo‘lindi: 2005–2012 yillar (8 yil), 2013–2018 yillar (6 yil) va 2019–2025 yillar (7 yil). Davrlar uzunligi bir xil emas, shuning uchun ular bo‘yicha taqqoslash yig‘indi emas, balki o‘rtacha qiymatlar bo‘yicha amalga oshirildi.

Ma’lumot sifatini tekshirishda quyidagi nomuvofiqliklar aniqlandi va natijalar talqinida hisobga olindi. Chegaraviy zovurining 2014 yilida o‘rtacha sarf 1,56 m³/s, lekin yillik hajm 7,5 mln m³ ko‘rsatilgan, sarfdan hisoblangan hajm esa taxminan 49 mln m³ bo‘lishi kerak; bu yil davrlar o‘rtachasidan chiqarib tashlandi. ЦГК zovurining 2019 yilida o‘rtacha sarf 63,3 m³/s, lekin oylik hajmlar yig‘indisi atigi 167 mln m³. ЦГК varag‘ida 2020–2021 yillar yo‘q, 2022–2025 yillar uchun esa mineralizatsiya berilmagan.

Zamonaviy tadqiqot metodlari bo‘yicha manbalar, jumladan suv balansi modellari, yer osti suvi bilan o‘zaro ta’sir, bug‘lanishni baholash, masofadan zondlash va prognoz stsenariylari adabiyotlar asosida tahlil qilinadi. Bu usullar empirik hisob-kitob sifatida emas, metodik yo‘nalish sifatida keltiriladi [3][11][12].

Tadqiqot bir nechta cheklovga ega. Birinchidan, tahlilga bug‘lanish, yog‘in va yer osti suvi ma’lumotlari kiritilmagan, shuning uchun suv balansi to‘liq hisoblanmagan, faqat kollektor kirimi tahlil qilingan. Ikkinchidan, asosiy kirimni tashkil etuvchi Sirdaryo oqimi (Chordara) ma’lumotlari ushbu jadvallarda yo‘q. Uchinchidan, ЦГК va TSK zovurlaridagi uzilishlar qo‘shimcha tahlilni cheklaydi. To‘rtinchidan, o‘lchov usullari va kalibrlash ma’lumotlari berilmagan.

4. Zovurlar bo‘yicha kirim va hajm dinamikasi.

To‘rtta asosiy zovurdan AAKT ga kirgan yillik suv hajmlarining yig‘indisi 2005–2025 yillarda 515 dan 898 mln m³ gacha o‘zgargan . Eng yuqori kirim 2005 yilda (898 mln m³) qayd etilgan, undan keyin 2006 yilda 819 mln m³, 2007 yilda 730 mln m³ bo‘lgan. Keyingi yillarda kirim pasaygan: 2008 yilda 551 mln m³ bilan kuzatuvdagi eng past ko‘rsatkichlardan biri qayd etilgan. 2009–2018 yillarda yillik kirim asosan 525 dan 625 mln m³ oralig‘ida tebranib turgan. 2019 yildan keyin kirim yana oshgan: 2019 yilda 710 mln m³, 2022 yilda 689 mln m³. 2023 yilda kirim 515 mln m³ ga tushgan, 2024 yilda esa 824 mln m³ ga ko‘tarilgan, 2025 yilda kirim 772 mln m³ bo‘lgan.

Davrlar bo‘yicha o‘rtacha yillik kirim 2005–2012 yillarda 654 mln m³, 2013–2018 yillarda 584 mln m³, 2019–2025 yillarda 684 mln m³ bo‘lgan. Davrlar o‘rtasidagi farq tebranish oralig‘ida bo‘lib, uzoq muddatli yo‘nalish aniq emas. Shu sababli umumiy kirimga qarab tizim hajmining uzoq muddatli o‘zgarishini xulosa qilib bo‘lmaydi, zovurlar bo‘yicha alohida tahlil zarur.

Zovurlar bo‘yicha tahlil shuni ko‘rsatadiki, Oq buloq zovurining hajmi 2005–2018 yillarda 119 dan 214 mln m³ oralig‘ida bo‘lgan. 2019 yilda uning hajmi bir yilda 124 mln m³ dan 282 mln m³ gacha, taxminan ikki barobar oshgan. Undan keyingi yillarda hajm yuqori darajada saqlangan: 2019–2025 yillardagi o‘rtacha 297 mln m³, eng yuqori qiymat 2022 yilda (355,5 mln m³). Ma’lumotlarning o‘zi bu o‘sishning sababini ko‘rsatmaydi, shuning uchun sug‘orish suvi taqsimoti, kollektor tarmog‘idagi qayta yo‘naltirishlar yoki o‘lchov usulining o‘zgarishi rasmiy hujjatlar orqali tekshirilishi kerak .

Chegaraviy zovurining hajmi 2005 yilda eng yuqori (174,2 mln m³) bo‘lgan, keyingi yillarda esa keskin kamaygan. 2005–2012 yillardagi o‘rtacha 121 mln m³ 2019–2025 yillarda 71 mln m³ gacha tushgan. 2024 yilda hajm 101 mln m³ gacha ko‘tarilgan, bu 2019–2025 davridagi eng yuqori ko‘rsatkich. Tebranish koeffitsienti (0,46) to‘rtta zovur ichida ikkinchi o‘rinda turadi, shuning uchun bu zovurning kirimi yildan-yilga kuchli o‘zgargan. 2014 yildagi nomuvofiq yozuv (7,5 mln m³) davriy o‘rtachani keskin pasaytirgani uchun u alohida izohlanadi .

QLI zovuri 2005–2018 yillarda tizimning eng katta kirim manbai bo‘lgan. Uning o‘rtacha hajmi 2005–2012 yillarda 365 mln m³, 2013–2018 yillarda 372 mln m³ bo‘lib, bu ikki davr deyarli bir xil. 2019–2025 yillarda o‘rtacha hajm 292 mln m³ ga tushgan. Eng yuqori qiymat 2005 yilda (525 mln m³), eng past qiymat 2023 yilda (197 mln m³) qayd etilgan. 0,20 tebranish koeffitsienti QLI kirimi to‘rtta zovur ichida eng barqaror

ekanini ko‘rsatadi, ammo 2019 yildan keyingi pasayish kirimning ichki tarkibida o‘zgarish bo‘lganini bildiradi .

ARK-1 zovuri hajm jihatidan eng kichik, lekin eng tez o‘sgan manba. 2005–2012 yillarda uning o‘rtacha hajmi 5,6 mln m³ bo‘lgan, 2019–2025 yillarda esa 24,0 mln m³ ga yetgan, ya’ni taxminan to‘rt barobar. 2024 yilda hajm 50,9 mln m³ bilan eng yuqori darajaga chiqqan. Tebranish koeffitsienti (0,97) to‘rtta zovur ichida eng yuqori, shuning uchun bu zovurdan chiqarilgan yillik xulosalar ehtiyotkorlik bilan talqin qilinishi kerak. Hajmi kichik bo‘lgani uchun ARK-1 umumiy kirimga 2019–2025 yillarda taxminan 3,5 foiz hissa qo‘shgan .

2-jadval. Zovurlar bo‘yicha yillik suv hajmi (mln m³, davrlar o‘rtachasi)

Zovur	2005–2012	2013–2018	2019–2025	Minimum (yil)	Maksimum (yil)	CV
Oq buloq	163,1	143,2	297,0	118,6 (2009)	355,5 (2022)	0,37
Chegaraviy	121,0	68,6*	70,7	7,5 (2014)*	174,2 (2005)	0,46
QLI	364,7	372,4	292,2	196,7 (2023)	525,0 (2005)	0,20
ARK-1	5,6	9,8	24,0	4,6 (2005)	50,9 (2024)	0,97
Jami	**654,4**	**583,8**	**683,9**	—	—	—

** 2014 yil ma’lumoti sarf bilan mos emas, shuning uchun 2013–2018 davri o‘rtachasi shu yilsiz hisoblangan (68,6 mln m³).*

Kirim tarkibidagi siljish davrlar bo‘yicha aniq ko‘rinadi. 2005–2012 yillarda kirimning 56 foizi QLI zovuridan, 25 foizi Oq buloq zovuridan, 18 foizi Chegaraviy zovuridan kelgan. 2019–2025 yillarda QLI ulushi 43 foizga tushgan, Oq buloq esa umumiy kirimning 43 foizini tashkil etgan (3-jadval). Ya’ni, umumiy hajm barqaror bo‘lsa ham, uning manbalari o‘rtasidagi nisbat o‘zgargan. Bu o‘zgarish mineralizatsiyaga ham ta’sir qiladi.

3-jadval. Zovurlarning umumiy kirimdagi ulushi (%)

Zovur	2005–2012	2013–2018	2019–2025
QLI	56	64	43
Oq buloq	25	25	43
Chegaraviy	18	10	10
ARK-1	1	2	3,5

Kirim dinamikasi bo‘yicha asosiy natijalar quyidagicha: to‘rt zovurning yillik umumiy kirimi 515 dan 898 mln m³ gacha o‘zgargan, uzoq muddatli tendensiya aniqlanmagan; kirimning tarkibi o‘zgargan, 2019 yildan keyin Oq buloq va ARK-1 ulushi oshgan, QLI ulushi kamaygan; Chegaraviy va ARK-1 eng beqaror manbalardir. 2019 yildagi Oq buloq siljishi va 2014 yildagi Chegaraviy yozuvi kabi nomuvofiqliklar talqinda alohida e’tiborni talab qiladi. Bu natijalar faqat to‘rtta kollektor kirimini aks ettiradi, Chordara suv omboridan kelgan Sirdaryo oqimi, yog‘in, bug‘lanish va yer osti suvi esa ushbu ma’lumotlarda mavjud emas.

5. Mineralizatsiya va tuz ortishining o‘zgarishi.

Kirayotgan suvning hajmga tortilgan o‘rtacha mineralizatsiyasi 2005–2012 yillarda 2,95 g/l, 2013–2018 yillarda 3,73 g/l, 2019–2025 yillarda 3,32 g/l bo‘lgan . Eng yuqori

sho‘rlanish 2013–2018 yillarga to‘g‘ri kelgan, keyingi davrda biroz pasaygan, ammo 2005–2012 yillar darajasiga qaytmagan.

Tuz miqdorining ortishi, ya’ni suv hajmi bilan mineralizatsiya ko‘paytmasi, to‘rtta zovur bo‘yicha yillik o‘rtacha 1 930 ming tonnadan 2 271 ming tonnagacha oshgan, bu taxminan 18 foiz . Suv hajmi davrlar o‘rtasida deyarli o‘zgarmagan, shuning uchun o‘sish asosan kirayotgan suv sho‘rligining oshishi bilan bog‘liq. 2024 yilda tuz miqdorining ortishi kuzatuv davridagi eng yuqori qiymatga (taxminan 3 071 ming tonna) yetgan.

4-jadval. Zovurlar bo‘yicha o‘rtacha mineralizatsiya (g/l)

Zovur	2005–2012	2013–2018	2019–2025
Oq buloq	3,22	4,09	3,54
Chegaraviy	3,09	4,04	4,00
QLI	2,77	3,54	2,83
ARK-1	3,51	3,76	4,51

Zovurlar kesimida QLI 2013–2018 yillarda tizimga eng ko‘p tuz olib kirgan (yillik taxminan 1 318 ming tonna), 2019–2025 yillarda esa yuklama 828 ming tonnagacha kamaygan. Oq buloq zovurida, aksincha, yuklama 525 dan 1 052 ming tonnagacha, taxminan ikki barobar oshgan. Chegaraviy va ARK-1 zovurlarida sho‘rlik yuqori va o‘sgan: Chegaraviyda 2017–2018 yillarda 4,6–4,8 g/l, ARK-1da 2022–2025 yillarda 4,6–4,8 g/l qayd etilgan .

Erkabaev va hammualliflar umumiy mineralizatsiyaning me’yordan 25 martadan ortiq ekanini qayd etgan [7]. Rossiya olimlarining 2023 yildagi stsenariy hisoblarida, kirim kamaysa, Aydar–Tuzkan tizimining muvozanat sathi 241,9 m gacha pasayib, sho‘rlik

61‰ ga yetishi, kirim oshirilgan variantda esa sho‘rlik 92% gacha ko‘tarilishi ko‘rsatilgan [12].

Mineralizatsiya va tuz miqdorining ortishining o‘zgarishi kirim tarkibidagi siljish bilan bog‘liq ko‘rinadi, ammo ma’lumotlar sababiy bog‘liqlikni isbotlamaydi. Buni aniqlash uchun bug‘lanish, yog‘in va sug‘orish ma’lumotlari kerak.

6. Zamonaviy tadqiqot metodlari.

Aydar-Arnasoy tizimini o‘rganishda bir nechta zamonaviy yondashuv qo‘llaniladi. Ular bir-birini to‘ldiradi, ammo hech biri alohida yetarli emas.

Suv balansi modellari. Sirojiddinova va hammualliflar tizim uchun SWAT, WEAP, MIKE SHE, MODFLOW va HEC-HMS modellarini taqqoslagan [3]. Ularning xulosasiga ko‘ra, SWAT havza miqyosidagi gidrologiya va GAT bilan integratsiya uchun, MIKE SHE yer osti suvi va ko‘l o‘rtasidagi o‘zaro ta’sir uchun, WEAP esa iqlim stsenariylari va suv taqsimoti uchun qulay. Har bir model ekologik jihatni cheklangan darajada qamrab oladi.

Yer osti suvi bilan o‘zaro ta’sir. Wahyuni va hammualliflar ko‘l suv balansi modeli orqali yer osti suvi almashinuvini hisoblagan [11]. Natijaga ko‘ra, mart–iyul oylarida yer osti suvi ko‘lga kiradi (0,13–0,83 km³/oy), avgust–fevralda esa ko‘ldan chiqadi (−0,05 dan −0,51 km³/oy gacha). Model o‘lchangan ma’lumotlar bilan tekshirilgan.

Bug‘lanishni baholash. Sirojiddinova va hammualliflar bug‘lanish tizimda asosiy chiqim komponenti ekanini ta’kidlab, FAO Penman–Monteith usulini eng ishonchli usullardan biri sifatida tavsiya qilgan [3]. Usulni qo‘llash uchun yog‘in va harorat qatorlari hamda MODIS ma’lumotlari zarurligi ko‘rsatilgan.

Masofadan zondlash va GAT. Sirojiddinova va hammualliflarning ma’lumotiga ko‘ra, Landsat va Sentinel-2 tasvirlari yordamida ko‘l suv yuzasi maydonini 1985–2025 yillar uchun NDWI indeksi orqali kuzatish mumkin [3]. Bu usul dala postlari yetmaydigan hududlarni ham qamraydi, biroq natijalar dala o‘lchovlari bilan kalibrlanishi shart.

Ushbu tadqiqotda masofadan zondlash tasvirlari hisoblanmagan, shuning uchun bu usul metodik yo‘nalish sifatida keltirilgan.

Prognoz stsenariylari. Grechushnikova va hammualliflar (2023) dinamik-stoxastik model yordamida Aydar–Tuzkan tizimining sath va sho‘rligini kirim o‘zgarishiga qarab hisoblagan [12]. Bu natijalar ushbu tadqiqotda faqat metodik taqqoslash uchun keltiriladi.

Monitoring va sun’iy intellekt. Sirojiddinova va hammualliflar uzluksiz monitoring uchun sath datchiklari, avtomatik EC/TDS o‘lchagichlari va ma’lumotlarni bulutli bazaga yig‘ishni tavsiya qilgan. Sath, sho‘rlik va suv maydonini bashorat qilish uchun Random Forest, XGBoost yoki LSTM kabi mashinaviy o‘rganish usullarini qo‘llash mumkinligi ko‘rsatilgan [3]. Bu usullar Aydar-Arnasoy uchun hali amalda sinalmagan.

Xulosa qilib aytganda, zamonaviy metodlarning hech biri tizimning to‘liq suv balansi va ekologik holatini bitta modelda qamrab olmaydi. Shu sababli kelgusida suv balansi modeli, masofadan zondlash va dala monitoringini birlashtirish zarur.

Xulosa va tavsiyalar.

Tadqiqot 2005–2025 yillarda Aydar-Arnasoy ko‘llar tizimini oziqlantiruvchi to‘rtta asosiy kollektor zovurining gidrologik ma’lumotlarini tahlil qildi. Natijalar tizimning kirim hajmi va sifati tarixan barqaror emasligini ko‘rsatadi.

Birinchidan, to‘rtta zovurdan keladigan yillik suv hajmi 515 dan 898 mln m³ gacha o‘zgargan, ammo uzoq muddatli yo‘nalish aniqlanmadi. Davrlar bo‘yicha o‘rtacha kirim 654, 584 va 684 mln m³ bo‘lgan . Ikkinchidan, kirimning tarkibi o‘zgargan: 2019 yildan keyin Oq buloq ulushi taxminan 43 foizgacha oshgan, QLI ulushi esa 43 foizgacha kamaygan . Uchinchidan, hajmga tortilgan mineralizatsiya 2005–2012 yillardagi 2,95 g/l dan 2013–2018 yillarda 3,73 g/l gacha oshgan, 2019–2025 yillarda esa 3,32 g/l

bo‘lgan. Tuz miqdorining ortishi taxminan 18 foizga oshgan, 2024 yilda esa kuzatuv davridagi eng yuqori darajaga yetgan .

Tadqiqotning cheklovlari aniq. Tahlil faqat to‘rtta kollektor kirimini qamrab oladi, Chordara suv omboridan kelayotgan Sirdaryo oqimi, yog‘in, bug‘lanish va yer osti suvi ma’lumotlari mavjud emas. Ma’lumotlarda aniqlangan nomuvofiqliklar (Chegaraviy 2014 yil, ЦГК 2019 yil va ЦГК dagi uzilishlar) natijalarga ta’sir qilishi mumkin. Shu sababli ilmiy xulosalar kuzatilgan ma’lumotlarga asoslanadi, sababiy bog‘liqliklar esa kelgusi tadqiqotlarda tekshirilishi kerak.

Ushbu natijalardan kelib chiqib quyidagi tavsiyalar beriladi.

Monitoring tizimini takomillashtirish. Gidrologik postlarda suv sarfi, hajm va mineralizatsiya o‘lchovlari muntazam kalibrlanishi va tekshirilishi kerak. Avtomatik datchiklar va sath kuzatuvi keng joriy etilsa, ma’lumotlar ishonchliligi oshadi.

Kirim tarkibini boshqarish. Sho‘rligi yuqori zovurlardan (Oq buloq, Chegaraviy va ARK-1) keladigan suv hajmini nazorat qilish, toza suv kirimi bilan almashtirish imkoniyatlarini ko‘rib chiqish va kollektor-drenaj suvlarini tozalash yoki qayta taqsimlashni o‘rganish zarur.

Suv balansi modelini yaratish. Yog‘in, bug‘lanish, sug‘orish va yer osti suvi ma’lumotlarini o‘z ichiga olgan suv balansi modeli ishlab chiqilsa, kelgusidagi stsenariylar, masalan, toza suv kirimi kamayganda tizim holatini baholash mumkin bo‘ladi [3].

Masofadan zondlash va GAT. Landsat va Sentinel-2 tasvirlari orqali ko‘l suv yuzasi, sho‘rlangan yerlar va tuzli chang tarqalishini muntazam kuzatish, dala o‘lchovlari bilan kalibrlash tavsiya etiladi.

Yer osti suvi va tuproq monitoringi. Ko‘l atrofidagi gidrogeologik quduqlar va tuproq sho‘rlanishini kuzatish tarmog‘ini kengaytirish, ko‘l sifatidagi o‘zgarishning qishloq xo‘jaligi yerlari va suv manbalariga ta’sirini aniqlash uchun kerak.

Ilmiy-amaliy hamkorlik. Gidrologlar, ekologlar, suv xo‘jaligi mutaxassislari va baliqchilik sohasi vakillari o‘rtasida ma’lumot almashinuvi tashkil etilsa, boshqaruv qarorlari umumiy ma’lumotlarga asoslanadi.

ADABIYOTLAR RO‘YXATI

1. Groll M., Kulmatov R., Mullabaev N., Opp C., Kulmatova D. (2016). Rise and decline of the fishery industry in the Aydarkul–Arnasay Lake System (Uzbekistan): effects of reservoir management, irrigation farming and climate change on an unstable ecosystem. Environmental Earth Sciences, 75, 921.

2. Gudalov M. (2022). Changes in water volume and environmental impact in the Aydar-Arnasay lake system. Journal of Geography and Natural Resources. https://topjournals.uz/index.php/ignr

3. Sirojiddinova S., Samiev L., Jalilova Kh. (2026). Modern approaches to water balance models and ecosystem stability assessment in the Aydar-Arnasay lake system: analysis and prospects. Journal of Hydraulic and Engineering, 4(1), 2. https://doi.org/10.35938/jhee-2026-1-00002

4. Ramsar Sites Information Service. Aydar-Arnasay Lakes System, Ramsar Site No. 1841 (designated 20.10.2008, area 527 100 ha). https://rsis.ramsar.org/ris/1841

5. Water level in Aydarkul dropped to 2 meters; its volume decreased to 36.8 billion cubic meters. Kun.uz, 17 February 2023. https://m.kun.uz/en/news/2023/02/17/water-level-in-aydarkul-dropped-to-2-meters-its-volume-decreased-to-368-billion-cubic-meters

6. Wahyuni S., Oishi S., Sunada K., Toderich K.N., Gorelkin N.E. (2009). Analysis of water-level fluctuations in Aydarkul-Arnasay-Tuzkan lake system and its impacts on the surrounding groundwater level. Journal of Japan Society of Civil Engineers (JSCE), 53. https://repository.unej.ac.id/handle/123456789/9194

7. Erkabaev F., Madrimov R., Nurmatova V. (2024). Status quo analysis of the Aidar-Arnasay Lake System. E3S Web of Conferences, 497, 02025. https://doi.org/10.1051/e3sconf/202449702025

8. Kulmatov R., Mullabaev N., Nigmatov A., Kulmatova D., Sobirov J. (2013). Qualitative and Quantitative Assessment of Water Resources of Aydar Arnasay Lakes System. Journal of Water Resource and Protection, 5, 941–952. https://doi.org/10.4236/jwarp.2013.510097

9. Kulmatov R., Ruzikulova O., Taylakov A. (2022). Determination and Assessment of Water Resources Balance of Aydar–Arnasay Lake System in Uzbekistan. IOP Conference Series: Earth and Environmental Science, 1068, 012045. https://doi.org/10.1088/1755-1315/1068/1/012045

10. Akhmadjonova Yo.T. Hydrological description and hydrochemical analysis of the Aydar-Arnasoy lake system. CyberLeninka. https://cyberleninka.ru/article/n/hydrological-description-and-hydrocemical-analysis-of-the-aydar-arnasoy-lake-system

11. Wahyuni S., Oishi S., Sunada K., Toderich K.N. (2013). The estimation of groundwater exchange in Aydarkul–Arnasay lake system by a lake water balance model. Journal of Japan Society of Civil Engineers (JSCE), 54. https://repository.unej.ac.id/handle/123456789/9198

12. Grechushnikova M.G., Frolov A.V., Aybulatov D.N. (2023). Scenario characteristics of the Aidar-Tuzkan lake system level/mineralization regime. Water Sector of Russia: Problems, Technologies, Management, No. 5. https://doi.org/10.35567/19994508_2023_5_1

Data-Driven Estimation of the Permissible Running Speed of a Self-Propelled Railcar from Frame Strain-Gauge Measurements

Izzatillo Rakhmiddinov

Turin Polytechnic University in Tashkent

Abstract

Speed limits for special self-propelled rolling stock are usually set from design documents, while the actual stress state of an aged frame may differ. This thesis shows how a strength-based speed limit can be obtained directly from running-test data. Maximum stresses measured by 16 strain-gauge channels on the frame of an ADM-1 railcar at 10, 30, 55 and 60 km/h were fitted by linear regression. The models explain 79–99% of the variance (median $R^2 = 0.92$). The most loaded zone, under the diesel-engine beam, reaches the permissible stress of 152.75 MPa at about 54 km/h. The same regression structure can serve as a first surrogate model for machine-learning-based monitoring of electric rolling stock.

Keywords

self-propelled rolling stock, frame, strain-gauge measurement, regression, permissible speed, surrogate model, machine learning.

Introduction

More than 180 units of special self-propelled rolling stock operate on the railways of Uzbekistan, and about 64% of them have served over 20 years [1]. Life extension of these vehicles requires knowing the conditions under which the frame stays within its strength limits. Running speed is the operating parameter that the driver controls most directly, and frame stress grows with it [1, 2]. The aim of this work is to turn running-test measurements into a speed limit with a transparent, reproducible model.

Methods

Strain gauges of type BF350-10AA were installed at stress-concentration zones of the ADM-1 frame identified by a finite element model, following GOST 31846-2012 [3]. Tests were run on the Uzbekiston–Chinoz line section on straight track and curves of 600 and 900 m radius. Finite element and measured stresses agreed within 5–10% [1]. For every channel k, the maximum stress was fitted as a linear function of speed v, and the limit speed was found where the model reaches the permissible stress [σ]:

$$\sigma_k(v) = a_k + b_k \cdot v, \quad v_k^* = ([\sigma] - a_k) / b_k \qquad (1)$$

The permissible stress for the working, traction and design-speed modes is [σ] = 152.75 MPa [1, 3]. The coefficient of determination R^2 was used to judge whether a linear model is adequate.

Results

Table 1 lists the fitted models. Zones I–IV are lightly loaded, with stress gradients below 1 MPa per km/h and limit speeds far above the operating range. Zones VI and VII carry the highest loads. In zone VII the limit is reached at 54–56 km/h, which agrees with the exceedance of normative stresses observed at 50–60 km/h in the running tests [1].

Table 1. Linear stress–speed models of the ADM-1 frame channels

Channel	Zone	a, MPa	b, MPa per km/h	R^2	v*, km/h
1	I	-0.48	0.279	0.85	548
2	II	-2.69	0.746	0.94	209
3	II	-4.98	0.928	0.93	170
4	II	0.22	0.751	0.93	203
5	II	-2.83	0.759	0.83	205

Channel	Zone	a, MPa	b, MPa per km/h	R^2	v*, km/h
6	III	-3.06	0.915	0.88	170
7	III	-6.14	0.978	0.92	162
8	III	-4.26	0.847	0.93	185
9	IV	-0.50	0.880	0.90	174
10	V	-1.88	1.227	0.79	126
11	V	-0.75	1.065	0.88	144
12	VI	28.10	1.508	0.91	83
13	VI	13.29	1.665	0.98	84
14	VI	18.04	2.011	0.99	67
15	VII	-1.95	2.757	0.96	56
16	VII	5.51	2.729	0.92	54

Linear interpolation between measured points gives 54.8 km/h for channel 16, close to the regression value of 53.9 km/h. The regression is therefore slightly conservative, which is the safer direction for a speed limit.

Conclusions

A strength-based permissible speed of about 54 km/h was derived for the ADM-1 frame directly from strain-gauge data. Simple linear models describe the stress–speed relation well, so they can serve as transparent baselines. In future work, the same structure will be extended to machine-learning surrogates such as gradient-boosted trees [4], trained on on-board data of electric locomotives, to support condition-based maintenance and fatigue-aware speed advice.

References

1. Rakhmiddinov I.O. Modernization and service life extension of special self-propelled rolling stock operated in the Republic of Uzbekistan. PhD thesis abstract, specialty 05.08.05. Tashkent State Transport University, Tashkent, 2025.

2. Rakhmiddinov I., Fayzibaev S., Kasimov O., Kosimov K., Panchenko V. Improving the structural reliability of self-propelled railcar frames through modernization techniques. AIP Conference Proceedings, 2026, 3447, 060011. https://doi.org/10.1063/12.0044293

3. GOST 31846-2012. Special railway rolling stock. Requirements for strength of supporting structures and dynamic qualities. Moscow: Standartinform, 2013.

4. Chen T., Guestrin C. XGBoost: A scalable tree boosting system. Proceedings of the 22nd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2016, pp. 785–794.

THE SOCIAL SIGNIFICANCE OF THE "GREEN ISLAM" CONCEPT: GLOBAL EXPERIENCE AND OPPORTUNITIES FOR UZBEKISTAN

Alimov Muhammadali, Masudxon Ismoilov

Abstract

This article analyzes the social significance of the "Green Islam" concept in the context of environmental challenges, the role of religious communities in environmental mobilization, and international experience. Particular attention is paid to environmental justice, youth education, community cooperation, and interfaith dialogue. In the context of Uzbekistan, especially in light of the environmental and social challenges facing the Aral Sea region, the article offers recommendations for water conservation, improving the energy efficiency of mosques, and developing environmental education initiatives. It emphasizes the need for cooperation among the state, the scientific community, local communities, and the industrial sector to translate the concept into practical outcomes.

Keywords

Green Islam, social significance, environmental justice, Aral Sea region, water conservation, environmental education, youth, community cooperation.

"YASHIL ISLOM" KONSEPSIYASINING IJTIMOIY AHAMIYATI: JAHON TAJRIBASI VA O'ZBEKISTON UCHUN IMKONIYATLAR

Alimov Muhammadali , Masudxon Ismoilov

Annotatsiya. Maqolada "Yashil Islom" konsepsiyasining ekologik muammolar sharoitidagi ijtimoiy ahamiyati, diniy jamoalarning ekologik safarbarlikdagi o'rni va xalqaro tajriba tahlil qilinadi. Ekologik adolat, yoshlar ta'limi, jamoaviy hamkorlik va dinlararo muloqot masalalariga e'tibor qaratiladi. O'zbekiston sharoitida, ayniqsa Orolbo'yi hududidagi ekologik va ijtimoiy muammolar fonida suvni tejash, masjidlarning energiya samaradorligini oshirish hamda ekologik-ma'rifiy

tashabbuslarni rivojlantirish bo‘yicha takliflar beriladi. Konsepsiyani amaliy natijaga aylantirish uchun davlat, ilmiy jamoatchilik, mahalliy hamjamiyat va ishlab chiqarish sektori hamkorligi zarurligi ta’kidlanadi.

Kalit so‘zlar: Yashil Islom, ijtimoiy ahamiyat, ekologik adolat, Orolbo‘yi, suvni tejash, ekologik ta’lim, yoshlar, jamoaviy hamkorlik.

Kirish

Ekologik muammolar inson salomatligi, daromad manbalari, oziq-ovqat xavfsizligi, migratsiya va ijtimoiy tenglikka bevosita ta’sir ko‘rsatadi. Suv tanqisligi yoki yer degradatsiyasi barcha guruhlarga bir xil ta’sir qilmaydi: imkoniyati cheklangan oilalar, qishloq aholisi va ekologik xavf yuqori hududlarda yashovchilar ko‘proq zarar ko‘rishi mumkin. Shu bois ekologik masalalar tabiiy muhit bilan birga ijtimoiy adolat va jamoaviy mas’uliyat masalasi hamdir. "Yashil Islom” tabiatni asrashni e’tiqod, adolat, tejamkorlik va kelajak avlodlar oldidagi burch bilan bog‘laydi. Uning ijtimoiy ahamiyati odamlarni umumiy maqsad atrofida birlashtirish va ekologik xulq-atvorni kundalik hayotga olib kirish imkoniyatida namoyon bo‘ladi. “Yashil Islom”ning ijtimoiy vazifalarini aniqlash, xalqaro tashabbuslarni qiyoslash va O‘zbekiston uchun amaliy takliflar ishlab chiqishdan iborat. Tahlilda xalqaro deklaratsiyalar, BMT Taraqqiyot dasturining O‘zbekiston bo‘yicha ekologiya va Orolbo‘yi materiallari hamda yashil diniy tashabbuslar haqidagi ochiq manbalar ko‘rib chiqildi. Takliflar mavjud loyihalar sifatida emas, balki mahalliy sharoitga moslashtirish mumkin bo‘lgan tavsiyalar sifatida beriladi Birinchidan, diniy jamoalar ekologik bilimlarni keng ommaga yetkazishda muhim vosita bo‘lishi mumkin. Masjid va madrasalardagi ma’rifiy uchrashuvlar, juma va’zlari va yoshlar suhbatlari orqali suvni isrof qilmaslik, chiqindilarni to‘g‘ri boshqarish, daraxtlarni parvarishlash va energiya tejash haqida sodda, hayotiy tavsiyalar berish mumkin. Bunda diniy dalillar ilmiy ma’lumotlar bilan uyg‘unlashtirilishi lozim. Ikkinchidan, konsepsiya ekologik adolat masalasini ko‘taradi.

Tabiiy resurslardan foydalanishdan olinadigan foyda va ekologik zarar jamiyatda teng taqsimlanmasligi mumkin. Shu sababli ekologik tashabbuslar faqat individual tejamkorlikka emas, balki xavf ostidagi jamoalarni qo‘llab-quvvatlash, toza suv va sog‘lom muhitdan foydalanish imkoniyatlarini yaxshilashga ham qaratilishi kerak. Uchinchidan, “Yashil Islom” yoshlar tarbiyasi va fuqarolik faolligini kuchaytirishi mumkin. Yoshlar klublari, mahalla tozaligi, chiqindilarni saralash, ko‘chatlarni parvarishlash va suvdan foydalanish bo‘yicha mahalliy loyihalar ekologik bilimni amaliy ko‘nikmaga aylantiradi. Bunday ishlarning samarasi tadbirlar soni bilangina emas, balki suv va energiya sarfining kamayishi, ko‘chatlarning saqlanib qolishi hamda aholining ishtiroki bilan baholanishi kerak.

To‘rtinchidan, diniy va madaniy guruhlar o‘rtasidagi hamkorlik ekologik masalalarda umumiy til topishga yordam beradi. Iqlim o‘zgarishi yoki suv tanqisligi bir din yoki bir hudud doirasida qolmaydi. Shu sababli turli diniy jamoalar, mahalliy hokimiyat, olimlar va fuqarolik jamiyati tashkilotlari o‘rtasidagi muloqot muhimdir. **Jahonda** 2015-yilgi Islom iqlim deklaratsiyasi ekologik muammolarni musulmon jamoalari kun tartibiga olib chiqishga xizmat qilgan. 2023-yilda COP28 oldidan o‘tkazilgan Global Faith Leaders’ Summit esa iqlim bo‘yicha dinlararo hamkorlikni kuchaytirishga qaratilgan. Bu hujjatlar va uchrashuvlar diniy yetakchilarning jamoatchilik fikriga ta’siridan foydalanish mumkinligini ko‘rsatadi, biroq deklaratsiya qabul qilishning o‘zi amaliy natijani kafolatlamaydi. Indoneziyada “yashil masjid” va “Green Islam” tashabbuslari ibodat joylarini suv va energiya sarfini boshqarish, chiqindilarni kamaytirish hamda ekologik mavzularni va’zlarda yoritish bilan bog‘lashga intiladi. G‘arb mamlakatlarida Green Ummah va Green Muslims kabi tashabbuslar musulmon jamoalari uchun ekologik ta’lim va jamoaviy tadbirlarni rivojlantiradi. Bu tajribalar mahalliy ehtiyoj, resurs va boshqaruv tizimiga moslashtirilgandagina samarali bo‘lishi mumkin. O‘zbekiston sharoitida ekologik

masalalar suv resurslaridan foydalanish, qurg‘oqchilik xavfi, yerlarning sho‘rlanishi, havo sifati va Orol dengizi fojiasi bilan bog‘liq. Orolbo‘yi hududidagi ekologik o‘zgarishlar tabiatga ta’sir qilish bilan cheklanmay, aholi salomatligi, turmush sharoiti, bandlik va ijtimoiy barqarorlikka ham ta’sir ko‘rsatadi. Shu bois ekologik yondashuvlar mahalliy aholining ehtiyojlari va tajribasini hisobga olishi kerak. “Yashil Islom” asosida quyidagi takliflarni ilgari surish mumkin: 1) “Suv — omonat” mavzusida masjidlar, maktablar va mahallalarda suvni tejash bo‘yicha ilmiy asoslangan ma’rifiy dasturlar; 2) masjidlarda suv hisoblagichlari, oqishlarni bartaraf etish, tejamkor yoritish va imkoniyatga qarab quyosh energiyasidan foydalanish; 3) yoshlar va mahalla faollari ishtirokida chiqindilarni yig‘ish, saralash va yashil hududlarni parvarishlash; 4) Orolbo‘yida mahalliy iqlim va tuproq sharoitiga mos o‘simliklarni ekish hamda ularning saqlanib qolishini nazorat qilish; 5) diniy yetakchilar, ekolog olimlar, mahalliy hokimiyat va korxonalar o‘rtasida doimiy hamkorlik mexanizmini yaratish. Ushbu tashabbuslarni baholash uchun aniq ko‘rsatkichlar belgilanishi lozim: suv va elektr sarfining oldingi davrga nisbatan o‘zgarishi, yig‘ilgan va qayta ishlashga yuborilgan chiqindi miqdori, ekilgan ko‘chatlarning yashab qolish darajasi, o‘quv tadbirlarida qatnashganlar soni va jamoatchilik ishtiroki. O‘lchovlar bo‘lmasa, faoliyat faqat ramziy tadbirlar darajasida qolib ketishi mumkin Konsepsiyaga nisbatan muhim tanqid shuki, ekologik muammoni faqat shaxsiy mas’uliyat bilan tushuntirish yirik ishlab chiqarish, energetika, konchilik va infratuzilma bilan bog‘liq omillarni yetarlicha ochib bermasligi mumkin. Suvni tejashga chaqirish muhim, ammo yirik iste’molchilar, sanoat korxonalari va davlat boshqaruvi ham o‘z faoliyatining ekologik oqibatlari uchun javob berishi kerak. Yana bir muammo — diniy ekologik tashabbuslarning tarqoqligi, yetarli moliyalashtirilmasligi yoki va’z va deklaratsiyalardan keyin davomli dasturlarga aylanmasligidir. Buni kamaytirish uchun hamkorlik, mas’ul shaxslar, byudjet, muddatlar va natijalarni oshkora baholash mexanizmlari zarur. Diniy qadriyatlar ilmiy

dalillarni almashtirmaydi; aksincha, ular ilmiy tavsiyalarni jamiyatga tushunarli va ma’naviy jihatdan ta’sirchan yetkazishga yordam berishi mumkin.

Xulosa

“Yashil Islom” konsepsiyasining ijtimoiy ahamiyati ekologik mas’uliyatni axloq, adolat va jamoaviy hamkorlik bilan bog‘lashida namoyon bo‘ladi. Diniy muassasalar ekologik ta’lim, yoshlar faolligi va resurslarni tejash madaniyatini rivojlantirishda foydali hamkor bo‘la oladi. O‘zbekiston, xususan Orolbo‘yi uchun bu yondashuv suvni tejash, yashil hududlarni parvarishlash va ekologik xavflar haqida jamoatchilik xabardorligini oshirishga xizmat qilishi mumkin.

Shu bilan birga, tashabbuslar aniq ko‘rsatkichlar, ilmiy asos, davlat va biznes mas’uliyati hamda mahalliy aholining ishtiroki bilan mustahkamlanishi kerak. Eng maqbul yondashuv — diniy-axloqiy motivatsiyani ekologik boshqaruv va amaliy yechimlar bilan birlashtirishdir.

Foydalanilgan adabiyotlar

1. United Nations Development Programme (UNDP). Environment and Climate Action in Uzbekistan. https://www.undp.org/uzbekistan/environment-and-climate-action

2. UNDP Uzbekistan. Addressing Urgent Human Insecurities in the Aral Sea Region. https://www.undp.org/uzbekistan/projects/completed-addressing-urgent-human-insecurities-aral-sea-region

3. United Nations Uzbekistan. Atlas of Socio-economic and Environmental Indicators of the Aral Sea Region. 2019. https://uzbekistan.un.org/en/49737-atlas-socio-economic-and-environmental-indicators-aral-sea-region

4. Islamic Declaration on Global Climate Change. Istanbul, 18 August 2015. https://www.ifees.org.uk/about/islamicdeclaration/

5. UAE Ministry of Foreign Affairs. Global Faith Leaders' Summit on Climate Change, Abu Dhabi, November 2023. https://www.mofa.gov.ae/en/mediahub/news/2023/11/7/7-11-2023

6. DW. Indonesia's Green Islam. 7 November 2025. https://amp.dw.com/en/indonesias-green-islam/a-74647196

7. United Nations Environment Programme (UNEP). Al-Mizan: A Covenant for the Earth. https://www.unep.org/al-mizan-covenant-earth

8. Anabarja, S.; Safril Mubah, A. Eco-Pesantren and Environmental Education: A Study of Islamic-Based Environmental Initiatives. Journal of Islamic Studies and Environmental Affairs, 2021. https://doi.org/10.51413/jisea.Vol2.Iss1.2021.75-90

WOMEN'S PARTICIPATION AND HEROISM ON THE HOME FRONT DURING WORLD WAR II (THE CASE OF THE SYRDARYA REGION)

Mamadaliyeva Shoxista Xudoyberdiyevna
History Teacher at the Halima Khudoyberdiyeva Creative School under the Agency for Specialized Educational Institutions

Abstract

This thesis examines the activities of Uzbek women on the front lines and the home front during World War II, their contributions to victory, and the labor heroism of women who lived in the territory of present-day Syrdarya Region. During the war, women worked actively in agriculture, industry, medicine, education, and other sectors, playing an important role in supplying the front with essential products, clothing, and medical assistance. The thesis also emphasizes the importance of preserving women's heroism in historical memory, studying local archival documents, and passing this legacy on to future generations.

Keywords

World War II, Uzbek women, home front, labor heroism, Syrdarya region, agriculture, historical memory, patriotism.

IKKINCHI JAHON URUSHIDA AYOLLARNING ISHTIROKI VA FRONT ORTIDAGI JASORATLARI (SIRDARYO HUDUDI MISOLIDA)

Mamadaliyeva Shoxista Xudoyberdiyevna
Ixtisoslashtirilgan ta'lim muassasalari agentligi Halima Xudoyberdiyeva nomidagi ijod maktabi tarix fani o'qituvchisi

Annotatsiya. Mazkur tezisda Ikkinchi jahon urushi yillarida O'zbekiston ayollarining front va front ortidagi faoliyati, ularning g'alabaga qo'shgan hissasi hamda hozirgi Sirdaryo viloyati hududida yashagan xotin-qizlarning mehnat jasoratlarini

o‘rganish masalalari yoritiladi. Urush davrida ayollar qishloq xo‘jaligi, sanoat, tibbiyot, ta’lim va boshqa sohalarda faoliyat yuritib, frontni zarur mahsulotlar, kiyim-kechak va tibbiy yordam bilan ta’minlashda muhim o‘rin tutganlar. Shuningdek, tezisda ayollar jasoratini tarixiy xotirada saqlash, mahalliy arxiv hujjatlarini o‘rganish va avlodlarga yetkazishning ahamiyati ta’kidlanadi.

Kalit so‘zlar: Ikkinchi jahon urushi, o‘zbek ayollari, front orti, mehnat jasorati, Sirdaryo hududi, qishloq xo‘jaligi, tarixiy xotira, vatanparvarlik.

Kirish

Ikkinchi jahon urushi (1939–1945) insoniyat tarixidagi eng dahshatli qurolli to‘qnashuvlardan biri bo‘lib, millionlab insonlarning hayotiga ta’sir ko‘rsatdi. 1941-yil 22-iyunda fashistlar Germaniyasining Sovet Ittifoqiga hujumi boshlanganidan so‘ng O‘zbekiston aholisi ham urushning og‘ir sinovlariga duch keldi. Minglab erkaklar frontga safarbar etildi. Natijada qishloq xo‘jaligi, sanoat, transport, ta’lim va sog‘liqni saqlash sohalaridagi ko‘plab vazifalar ayollar hamda yoshlar zimmasiga tushdi.

Urush yillarida o‘zbek ayollari nafaqat oilalarini asrab-avaylash, balki mamlakat iqtisodiyotini barqaror saqlash, frontni oziq-ovqat va boshqa zarur mahsulotlar bilan ta’minlash, yaradorlarga yordam berish kabi mas’uliyatli vazifalarni ham bajardilar. Ularning faoliyati frontdagi jangovar harakatlar bilan chambarchas bog‘liq bo‘lib, umumiy g‘alabaga munosib hissa qo‘shdi.

Mazkur mavzuni Sirdaryo hududi misolida o‘rganish alohida ahamiyatga ega. Hozirgi Sirdaryo viloyati 1963-yilda tashkil etilgan bo‘lsa-da, uning hududidagi aholi punktlari va xo‘jaliklar urush yillarida O‘zbekistonning o‘sha davrdagi ma’muriy-hududiy tizimi tarkibida bo‘lgan. Shu bois hudud tarixini o‘rganishda hozirgi viloyat chegaralarini tarixiy ma’muriy birliklar bilan solishtirish, mahalliy arxiv hujjatlari va xotira materiallaridan foydalanish lozim.

Asosiy qism

1. Urush yillarida o‘zbek ayollarining front ortidagi faoliyati

Urush boshlanishi bilan O‘zbekiston iqtisodiyoti front ehtiyojlariga moslashtirildi. Mehnatga layoqatli erkaklarning katta qismi harbiy xizmatga ketgani sababli qishloq xo‘jaligi va ishlab chiqarishda ishchi kuchiga ehtiyoj ortdi. Bunday sharoitda ayollar dalalarda mehnat qilish, hosil yig‘ish, chorvachilik bilan shug‘ullanish, korxonalarda ishlash va kundalik xo‘jalik ishlarini bajarish orqali iqtisodiy hayotning uzluksizligini ta’minladilar.

Qishloq xo‘jaligi frontni oziq-ovqat bilan ta’minlashda muhim ahamiyatga ega edi. Ayollar ekin ekish, sug‘orish, hosilni yig‘ib olish va uni qayta ishlash ishlarida faol qatnashdilar. Ayniqsa, paxtachilik va g‘allachilik bilan bog‘liq ishlar katta mehnat talab qilgan. Ko‘plab ayollar uzoq ish kunlari, moddiy qiyinchiliklar va oilaviy mas’uliyatlarga qaramay, ishlab chiqarish vazifalarini bajarishga intildilar.

Front ortidagi jasorat faqat jismoniy mehnat bilan cheklanmagan. Ayollar frontdagi askarlar uchun kiyim-kechak, oziq-ovqat va zarur buyumlar tayyorlash, xayriya yig‘imlarida qatnashish hamda harbiy xizmatchilarning oilalariga yordam berish orqali ham o‘z hissalarini qo‘shdilar. Bunday faoliyat urush davrida jamiyatning birdamligini mustahkamlashga xizmat qildi.

2. Ayollarning tibbiyot, ta’lim va ijtimoiy sohalardagi xizmatlari

Urush davrida tibbiyot xodimlarining faoliyati nihoyatda muhim bo‘ldi. Shifokorlar, hamshiralar va sanitariya xodimlari yaradorlarni davolash, kasalliklarning tarqalishiga qarshi kurashish va aholining salomatligini saqlash uchun mehnat qildilar. O‘zbekiston hududiga ko‘plab yaradorlar va evakuatsiya qilingan aholi keltirilgani tibbiy xizmatlarga bo‘lgan ehtiyojni oshirdi.

Ayollar shifoxonalar va boshqa tibbiyot muassasalarida xizmat qilish bilan birga, sanitariya tadbirlarida ham qatnashdilar. Ularning fidoyiligi ko‘plab insonlarning hayotini saqlab qolish va urush oqibatlarini yengillashtirishga yordam berdi.

Ta’lim sohasida ishlagan ayollar esa og‘ir sharoitlarga qaramay, bolalarning bilim olishini davom ettirishga intildilar. O‘qituvchilar yosh avlodni tarbiyalash, ularda vatanparvarlik va insonparvarlik tuyg‘ularini shakllantirish bilan birga, urush sababli qiyin ahvolga tushgan bolalarga ma’naviy ko‘mak ko‘rsatdilar.

Shuningdek, urush davrida frontga ketgan kishilarning oilalarini qo‘llab-quvvatlash, yetim qolgan bolalarga g‘amxo‘rlik qilish va kundalik hayotdagi qiyinchiliklarni yengish masalalarida ham ayollarning o‘rni katta bo‘ldi.

3. Sirdaryo hududi misolida ayollarning mehnat jasorati

Hozirgi Sirdaryo viloyati hududining urush yillaridagi tarixini o‘rganish mintaqa aholisining umumiy g‘alabaga qo‘shgan hissasini aniqlash imkonini beradi. Bunda hududdagi qishloq xo‘jaligi, aholi turmushi, mehnat resurslari va front bilan aloqador faoliyatni tarixiy manbalar asosida tahlil qilish zarur.

Urush davrida bugungi Sirdaryo viloyati hududidagi aholi punktlarida ham qishloq xo‘jaligi ishlari va kundalik xo‘jalik faoliyati davom ettirilgan. Erkaklarning frontga ketishi natijasida ayollar oilaviy yumushlar bilan birga ishlab chiqarish vazifalarini ham bajarishga majbur bo‘lganlar. Ularning mehnati hududdagi xo‘jaliklar faoliyatini davom ettirish va aholining asosiy ehtiyojlarini ta’minlashda muhim o‘rin tutgan.

Sirdaryo hududidagi ayollarning jasoratini o‘rganishda, avvalo, urush yillarida faoliyat yuritgan xo‘jaliklar, mehnat jamoalari, tibbiyot muassasalari va ta’lim tashkilotlari haqidagi ma’lumotlarni to‘plash lozim. Shuningdek, frontga safarbar qilingan kishilarning oilalari, mehnat faxriylari va ularning avlodlari xotiralari ham tarixiy tadqiqotlar uchun muhim manba bo‘lishi mumkin.

Bunda tarixiy aniqlikni ta’minlash alohida ahamiyatga ega. Hozirgi Sirdaryo viloyati nomi va ma’muriy chegaralarini 1941–1945-yillarga to‘g‘ridan-to‘g‘ri tatbiq etish to‘g‘ri bo‘lmaydi. Shu sababli mahalliy ayollarning aniq ismlari, mehnat ko‘rsatkichlari, mukofotlari va faoliyat yo‘nalishlari faqat arxiv hujjatlari, rasmiy

ma’lumotnomalar yoki ishonchli tarixiy manbalar bilan tasdiqlangan taqdirdagina keltirilishi kerak.

4. Ayollar jasoratini tarixiy xotirada saqlashning ahamiyati

Ikkinchi jahon urushida ayollarning ishtirokini o‘rganish nafaqat tarixiy voqealarni yoritish, balki yosh avlodda vatanparvarlik, mehnatsevarlik, insonparvarlik va ijtimoiy mas’uliyat tuyg‘ularini shakllantirish uchun ham muhimdir.

Sirdaryo hududida bu boradagi tadqiqotlarni rivojlantirish uchun mahalliy muzeylar, davlat arxivlari, ta’lim muassasalari va mahalla tashkilotlari o‘rtasidagi hamkorlikni kuchaytirish mumkin. Urush qatnashchilari va front ortida mehnat qilgan insonlar haqidagi mavjud hujjatlarni raqamlashtirish, oilaviy arxivlarni o‘rganish va keksa avlod vakillarining xotiralarini yozib olish tarixiy merosni saqlashga xizmat qiladi.

Shuningdek, maktablar va oliy ta’lim muassasalarida mahalliy tarixga bag‘ishlangan davra suhbatlari, ilmiy-amaliy konferensiyalar va ko‘rgazmalar tashkil etish maqsadga muvofiq. Bunday tadbirlar orqali yoshlar o‘z hududining tarixini chuqurroq anglaydi hamda urush davrida mehnat qilgan ayollarning xizmatlarini qadrlashni o‘rganadi.

Xulosa

Xulosa qilib aytganda, Ikkinchi jahon urushi yillarida O‘zbekiston ayollari front va front ortida katta jasorat ko‘rsatdilar. Ular qishloq xo‘jaligi, ishlab chiqarish, tibbiyot, ta’lim va ijtimoiy hayotning turli sohalarida mehnat qilib, mamlakatning urush sharoitidagi faoliyatini davom ettirishga munosib hissa qo‘shdilar. Ularning fidoyiligi nafaqat iqtisodiy barqarorlikni ta’minlash, balki jamiyatda hamjihatlik va o‘zaro yordam muhitini saqlashda ham muhim ahamiyat kasb etdi.

Sirdaryo hududi misolida mazkur mavzuni o‘rganish mintaqa tarixining kam yoritilgan jihatlarini aniqlash imkonini beradi. Buning uchun hozirgi viloyat hududiga

mos keladigan tarixiy ma’muriy birliklarni aniqlash, arxiv hujjatlari va mahalliy xotira materiallarini tizimli ravishda o‘rganish zarur. Natijada urush yillarida mehnat qilgan ayollarning hayoti, faoliyati va jasorati haqida ishonchli tarixiy tasavvur shakllantirish mumkin bo‘ladi.

Ayollar jasoratini o‘rganish, ularning xizmatlarini e’tirof etish va bu tarixiy xotirani kelajak avlodlarga yetkazish bugungi kunning muhim ma’naviy-ma’rifiy vazifalaridan biridir.

Foydalanilgan adabiyotlar

1. O‘zbekistonning Ikkinchi jahon urushi yillaridagi tarixi bo‘yicha ilmiy tadqiqotlar va tarixiy nashrlar.
2. O‘zbekiston Milliy arxivi hujjatlari: 1941–1945-yillardagi mehnat safarbarligi, qishloq xo‘jaligi va ijtimoiy hayotga oid materiallar.
3. Sirdaryo viloyati davlat arxivi materiallari va mahalliy o‘lkashunoslik manbalari.
4. O‘zbekiston tarixi bo‘yicha oliy ta’lim muassasalari uchun darslik va o‘quv qo‘llanmalar.
5. Ikkinchi jahon urushi qatnashchilari, front orti mehnat faxriylari va ularning avlodlari xotiralari asosida tuzilgan mahalliy tarixiy to‘plamlar.

WAYS TO IMPROVE ADVERTISING ACTIVITIES WITHIN THE SYSTEM OF THE NATIONAL TELEVISION AND RADIO COMPANY OF UZBEKISTAN (NTRC)

Olimova Nodira Ramazonovna

Master's student at the Banking and Finance Academy of the Republic of Uzbekistan

Abstract

This thesis analyzes the theoretical and practical aspects of improving advertising activities within the system of the National Television and Radio Company of Uzbekistan (NTRC), opportunities for using modern marketing technologies, and ways to increase advertising effectiveness. It also focuses on studying audience needs, using digital platforms, developing cooperation with advertisers, and improving the quality of media services.

Keywords

NTRC, advertising, marketing, television, radio, digital technologies, media market, advertising effectiveness, audience, communication.

O‘ZBEKISTON MTRK TIZIMIDA REKLAMA FAOLIYATINI TAKOMILLASHTIRISH YO‘LLARI

Olimova Nodira Ramazonovna

O‘zbekiston Respublikasi *Bank-moliya akademiyasi magistranti*

Annotatsiya. Mazkur tezisda O‘zbekiston Milliy teleradiokompaniyasi (MTRK) tizimida reklama faoliyatini takomillashtirishning nazariy va amaliy jihatlari, zamonaviy marketing texnologiyalaridan foydalanish imkoniyatlari hamda reklama samaradorligini oshirish yo‘llari tahlil qilinadi. Shuningdek, auditoriya ehtiyojlarini o‘rganish, raqamli platformalardan foydalanish, reklama beruvchilar bilan hamkorlikni rivojlantirish va media xizmatlar sifatini oshirish masalalariga e’tibor qaratiladi.

Kalit so‘zlar: MTRK, reklama, marketing, televideniye, radio, raqamli texnologiyalar, media bozori, reklama samaradorligi, auditoriya, kommunikatsiya.

Kirish

Bugungi globallashuv va raqamli transformatsiya sharoitida ommaviy axborot vositalari jamiyat hayotida muhim o‘rin egallamoqda. Televideniye va radio nafaqat axborot tarqatish, ma’naviy-ma’rifiy faoliyatni amalga oshirish, balki reklama xizmatlarini ko‘rsatish orqali iqtisodiy rivojlanishga ham hissa qo‘shadi. Shu sababli ommaviy axborot vositalarida reklama faoliyatini samarali tashkil etish, zamonaviy marketing yondashuvlarini joriy qilish va auditoriya bilan samarali kommunikatsiyani yo‘lga qo‘yish dolzarb masalalardan biri hisoblanadi.

O‘zbekiston Milliy teleradiokompaniyasi mamlakatning yirik media tizimlaridan biri sifatida televideniye va radio orqali keng auditoriyaga axborot yetkazish imkoniyatiga ega. Ushbu imkoniyatlardan samarali foydalanish reklama faoliyatini rivojlantirish, mahalliy ishlab chiqaruvchilar va tadbirkorlik subyektlari mahsulotlarini targ‘ib qilish hamda media xizmatlarining raqobatbardoshligini oshirish uchun muhim ahamiyatga ega.

Hozirgi vaqtda auditoriyaning axborot iste’moli odatlari o‘zgarib bormoqda. An’anaviy televideniye va radio bilan bir qatorda internet, ijtimoiy tarmoqlar, videoplatformalar va mobil ilovalar ham reklama bozorining muhim vositalariga aylanmoqda. Bunday sharoitda MTRK tizimida reklama faoliyatini takomillashtirish an’anaviy media imkoniyatlarini raqamli texnologiyalar bilan uyg‘unlashtirishni talab etadi.

Mazkur tezisning maqsadi O‘zbekiston MTRK tizimida reklama faoliyatini rivojlantirishning ustuvor yo‘nalishlarini aniqlash hamda uning samaradorligini oshirishga qaratilgan takliflarni ishlab chiqishdan iborat.

1. MTRK tizimida reklama faoliyatining o‘rni va ahamiyati

Reklama — muayyan mahsulot, xizmat, tashkilot yoki g‘oyaga jamoatchilik e’tiborini jalb etishga qaratilgan kommunikatsiya vositasidir. U iste’molchilarga mahsulot va xizmatlar haqida ma’lumot beradi, ularning tanloviga ta’sir ko‘rsatadi hamda ishlab chiqaruvchilar va iste’molchilar o‘rtasidagi aloqalarni mustahkamlaydi.

Televideniye reklamaning tasvir, ovoz, matn va harakat imkoniyatlarini birlashtirishi bilan ajralib turadi. Ushbu xususiyatlar reklama mazmunini tushunarli, ta’sirchan va esda qolarli shaklda yetkazishga yordam beradi. Radio esa ovoz va musiqaga asoslanganligi sababli tinglovchilar bilan muntazam aloqani ta’minlash, muayyan hudud yoki auditoriyaga yo‘naltirilgan reklama xabarlarini uzatishda samarali vosita bo‘lib xizmat qiladi.

MTRK tizimida reklama faoliyatining rivojlanishi bir nechta muhim vazifalarni bajarishga yordam beradi. Birinchidan, reklama beruvchilarga o‘z mahsulot va xizmatlarini keng auditoriyaga tanitish imkoniyatini yaratadi. Ikkinchidan, media tashkilotlarining iqtisodiy imkoniyatlarini kengaytirishga ko‘maklashadi. Uchinchidan, mahalliy ishlab chiqaruvchilar, xizmat ko‘rsatuvchi korxonalar va tadbirkorlik subyektlarining bozordagi faolligini oshirishga xizmat qiladi.

Shu bilan birga, reklama faoliyati faqat daromad olish vositasi sifatida qaralmasligi kerak. Reklama mazmuni ishonchli, tushunarli, ijtimoiy mas’uliyatli va qonunchilik talablariga muvofiq bo‘lishi zarur. Ayniqsa, keng auditoriyaga mo‘ljallangan televideniye va radio dasturlarida reklama sifati hamda uning auditoriyaga ta’siri muhim ahamiyat kasb etadi.

MTRK tizimida reklama faoliyatini samarali tashkil etish uchun reklama beruvchilar talablarini, auditoriya xususiyatlarini va media bozoridagi o‘zgarishlarni muntazam o‘rganib borish lozim. Bu reklama xizmatlarini takomillashtirish va mavjud imkoniyatlardan oqilona foydalanish uchun asos yaratadi.

2. Reklama faoliyatini rivojlantirishdagi asosiy muammolar

Zamonaviy media bozorida reklama faoliyatini tashkil etish bir qator muammolar bilan bog‘liq. Ulardan biri auditoriyaning turli platformalarga taqsimlanishidir. Bugungi kunda ko‘plab foydalanuvchilar axborot va ko‘ngilochar kontentni internet orqali iste’mol qilmoqda. Natijada an’anaviy televideniye va radio reklamasining samaradorligini baholashda yangi yondashuvlarga ehtiyoj ortmoqda.

Ikkinchi muammo reklama samaradorligini o‘lchash bilan bog‘liq. Reklamaning qancha auditoriyaga yetib borgani, iste’molchilar e’tiborini qay darajada jalb etgani va reklama beruvchining maqsadlariga qanday ta’sir ko‘rsatganini aniqlash muhimdir. Buning uchun auditoriya reytinglari, so‘rovnomalar, reklama kampaniyasi natijalari va raqamli tahlil vositalaridan foydalanish zarur.

Uchinchi muammo reklama mahsulotlarining mazmuni va ijodiy sifatiga taalluqlidir. Takroriy, auditoriya ehtiyojlariga mos kelmaydigan yoki haddan tashqari uzun reklama materiallari tomoshabin va tinglovchilarning qiziqishini pasaytirishi mumkin. Shu sababli reklama xabarlarini qisqa, mazmunli, ishonchli va ijodiy yondashuv asosida tayyorlash lozim.

To‘rtinchi muammo kichik biznes va mahalliy ishlab chiqaruvchilarning reklama xizmatlaridan foydalanish imkoniyatlari bilan bog‘liq. Reklama xizmatlarining narxi, buyurtma berish jarayonlari va reklama joylashtirish shartlari tadbirkorlar uchun tushunarli bo‘lishi kerak. Moslashuvchan reklama paketlarini ishlab chiqish turli hajmdagi biznes subyektlarini jalb qilishga yordam beradi.

Bundan tashqari, reklama faoliyatida malakali mutaxassislarning mavjudligi ham muhimdir. Marketing, media rejalashtirish, reklama dizayni, videomontaj, auditoriya tahlili va raqamli kommunikatsiya bo‘yicha bilimga ega mutaxassislar reklama xizmatlarining sifatini oshirishda muhim rol o‘ynaydi.

Mazkur muammolarni bartaraf etish uchun reklama faoliyatini muntazam tahlil qilish, zamonaviy texnologiyalarni joriy etish va boshqaruv jarayonlarini takomillashtirish zarur.

3. MTRK tizimida reklama faoliyatini takomillashtirishning ustuvor yo‘nalishlari

3.1. Raqamli texnologiyalar va internet platformalaridan foydalanish

MTRK tizimida reklama faoliyatini rivojlantirishning eng muhim yo‘nalishlaridan biri raqamli texnologiyalardan samarali foydalanishdir. Televideniye va radio dasturlarini internet platformalarida targ‘ib qilish, videomateriallarni raqamli kanallarda joylashtirish hamda ijtimoiy tarmoqlar orqali auditoriya bilan muloqot qilish reklama imkoniyatlarini kengaytiradi.

Masalan, teleko‘rsatuv bilan bog‘liq reklama materiallarini teleefir bilan bir qatorda internetdagi rasmiy platformalarda ham joylashtirish mumkin. Bunda reklama beruvchiga turli kanallar orqali auditoriyaga yetib borish imkoniyati yaratiladi. Raqamli platformalarda reklama materiallarining ko‘rilishlari, foydalanuvchilar faolligi va boshqa ko‘rsatkichlarni tahlil qilish ham mumkin.

Shuningdek, MTRKning internet resurslarida reklama xizmatlari, joylashtirish shartlari va hamkorlik imkoniyatlari haqida aniq ma’lumot berish maqsadga muvofiqdir. Bu reklama beruvchilarning zarur ma’lumotlarni tez topishiga va xizmatlardan foydalanish jarayonining soddalashishiga yordam beradi.

3.2. Auditoriyani o‘rganish va reklama mazmunini moslashtirish

Reklama faoliyatining samaradorligi ko‘p jihatdan uning qaysi auditoriyaga yo‘naltirilganiga bog‘liq. Shu sababli MTRK tizimida tomoshabin va tinglovchilarning qiziqishlari, axborot iste’moli odatlari hamda turli dasturlarga bo‘lgan munosabatini o‘rganish muhim hisoblanadi.

Auditoriyani o‘rganishda so‘rovnomalar, reytinglar, statistik ma’lumotlar va raqamli tahlil usullaridan foydalanish mumkin. Olingan ma’lumotlar asosida reklama joylashtirish vaqti, reklama shakli hamda mazmuni bo‘yicha asoslangan qarorlar qabul qilinadi.

Masalan, oilaviy, ma’rifiy, sport yoki yoshlar dasturlarining auditoriyasi turlicha bo‘lishi mumkin. Reklama beruvchining mahsuloti va maqsadli auditoriyasi o‘rtasidagi moslikni hisobga olish reklama xabarining samaradorligini oshirishga yordam beradi. Bunda shaxsiy ma’lumotlarni himoya qilish va axloqiy me’yorlarga rioya etish ham muhimdir.

3.3. Reklama xizmatlarini diversifikatsiya qilish

Reklama xizmatlarini diversifikatsiya qilish deganda reklama beruvchilarga turli shakl va hajmdagi xizmatlarni taklif etish tushuniladi. MTRK tizimida oddiy reklama roliklari bilan bir qatorda homiylik loyihalari, maxsus mavzuli ko‘rsatuvlar, ijtimoiy reklama, radio e’lonlari va raqamli reklama formatlarini rivojlantirish mumkin.

Turli reklama paketlarini ishlab chiqish tadbirkorlarning ehtiyojlariga mos xizmatlarni tanlash imkonini beradi. Masalan, kichik biznes subyektlari uchun qisqa muddatli va nisbatan sodda reklama paketlari, yirik tashkilotlar uchun esa televideniye, radio va internetni qamrab oluvchi kompleks kampaniyalar taklif qilinishi mumkin.

Bunday yondashuv reklama beruvchilar doirasini kengaytirish, ularning ehtiyojlariga mos xizmatlar yaratish va media tashkilotining reklama bozoridagi raqobatbardoshligini oshirishga xizmat qiladi.

3.4. Reklama beruvchilar bilan hamkorlikni kuchaytirish

Reklama faoliyatini takomillashtirishda reklama beruvchilar bilan uzoq muddatli hamkorlik o‘rnatish alohida ahamiyatga ega. Buning uchun xizmatlar haqida ochiq ma’lumot berish, reklama buyurtmalarini qabul qilish jarayonini soddalashtirish va mijozlarga maslahat xizmatlarini ko‘rsatish zarur.

Reklama beruvchilarga reklama kampaniyasini rejalashtirish, mos efir vaqtini tanlash, reklama materiallarini tayyorlash va natijalarni baholash bo‘yicha ko‘mak berish hamkorlik sifatini oshiradi. Har bir reklama kampaniyasidan keyin natijalar haqida hisobot taqdim etish esa ishonchni mustahkamlaydi.

Bundan tashqari, hududiy korxonalar, mahalliy ishlab chiqaruvchilar va kichik biznes vakillari bilan hamkorlikni rivojlantirish lozim. Bu mahalliy mahsulot va xizmatlarning ommalashishiga hamda reklama bozorining kengayishiga yordam beradi.

4. Reklama samaradorligini oshirish bo‘yicha amaliy takliflar

MTRK tizimida reklama faoliyatini yanada rivojlantirish uchun quyidagi amaliy chora-tadbirlarni amalga oshirish maqsadga muvofiq:

Birinchidan, reklama xizmatlarini boshqarish jarayonlarini raqamlashtirish zarur. Reklama buyurtmalarini qabul qilish, reklama materiallarini tasdiqlash, efir jadvalini shakllantirish va natijalarni hisobot qilish imkonini beruvchi yagona elektron tizim ish jarayonlarini soddalashtirishi mumkin.

Ikkinchidan, reklama samaradorligini baholash mezonlarini takomillashtirish lozim. Bunda reklama qamrovi, auditoriyaning faolligi, reklama beruvchilarning qoniqish darajasi va kampaniya maqsadlariga erishish kabi ko‘rsatkichlardan foydalanish mumkin. Ko‘rsatkichlar reklama turiga va belgilangan maqsadga mos tanlanishi kerak.

Uchinchidan, reklama bilan shug‘ullanuvchi xodimlarning kasbiy malakasini muntazam oshirish muhimdir. Marketing, raqamli reklama, media rejalashtirish, auditoriya tahlili va reklama mazmunini yaratish bo‘yicha o‘quv dasturlari tashkil etilishi lozim.

To‘rtinchidan, reklama mahsulotlarining ijodiy sifatini oshirish kerak. Zamonaviy dizayn, sifatli tasvir va ovoz, tushunarli matn hamda milliy qadriyatlarga mos mazmun reklama materiallarining ta’sirchanligini kuchaytiradi.

Beshinchidan, reklama faoliyatida shaffoflik va ijtimoiy mas’uliyatni ta’minlash zarur. Reklama materiallari amaldagi qonunchilik talablariga muvofiq tekshirilishi, iste’molchini chalg‘ituvchi ma’lumotlarga yo‘l qo‘yilmasligi va auditoriya manfaatlari hisobga olinishi kerak.

Oltinchidan, reklama beruvchilar bilan muntazam fikr almashish tizimini yo‘lga qo‘yish maqsadga muvofiq. So‘rovnomalar va uchrashuvlar orqali mijozlarning takliflarini o‘rganish xizmatlar sifatini oshirishga yordam beradi.

Mazkur takliflarni bosqichma-bosqich amalga oshirish reklama faoliyatini tashkil etish sifatini oshirish, mavjud resurslardan samarali foydalanish va reklama beruvchilar bilan barqaror hamkorlikni rivojlantirish imkonini beradi.

Xulosa

Xulosa qilib aytganda, O‘zbekiston Milliy teleradiokompaniyasi tizimida reklama faoliyatini takomillashtirish zamonaviy media bozorining talablariga moslashish, raqamli texnologiyalardan foydalanish va auditoriya ehtiyojlarini chuqur o‘rganishni talab etadi. Televideniye va radioning an’anaviy imkoniyatlarini internet platformalari bilan uyg‘unlashtirish reklama qamrovini kengaytirish va reklama beruvchilarga yanada samarali xizmatlar taklif etish uchun muhim shart hisoblanadi.

Reklama xizmatlarini diversifikatsiya qilish, reklama beruvchilar bilan hamkorlikni kuchaytirish, xodimlar malakasini oshirish va reklama natijalarini muntazam tahlil qilish ushbu faoliyatning samaradorligini oshiruvchi asosiy omillardir. Shu bilan birga, reklama mazmunining ishonchliligi, qonunchilik talablariga muvofiqligi va ijtimoiy mas’uliyatga rioya etilishi ta’minlanishi lozim.

Taklif etilgan chora-tadbirlarni izchil amalga oshirish MTRK tizimida reklama xizmatlarini rivojlantirish, mahalliy tadbirkorlik subyektlari bilan hamkorlikni kengaytirish hamda milliy media mahsulotlarining raqobatbardoshligini mustahkamlashga xizmat qilishi mumkin.

Foydalanilgan adabiyotlar

1. O‘zbekiston Respublikasining “Reklama to‘g‘risida”gi Qonuni, O‘RQ-776, 2022-yil 7-iyun.

2. O‘zbekiston Respublikasining “Ommaviy axborot vositalari to‘g‘risida”gi Qonuni.

3. Kotler, P., Keller, K. L. *Marketing Management*. Pearson.

4. Chaffey, D., Ellis-Chadwick, F. *Digital Marketing*. Pearson.

5. Belch, G. E., Belch, M. A. *Advertising and Promotion: An Integrated Marketing Communications Perspective*. McGraw-Hill.

Vulnerability Analysis of Privacy-Preserving Algorithms in Multidimensional Medical and Nutritional Databases

Matyoqubov Og‘abek Bahrombek o‘g‘li
Urganch State University
Yusupov Bahodir Karomatovich
Institute of Information and Communication Technologies and Military Communications

Abstract

This paper analyzes the vulnerabilities of privacy-preserving algorithms applied to multidimensional medical and nutritional databases. Syntactic anonymization models (k-anonymity, l-diversity, t-closeness), differential privacy and federated learning are compared. It is shown that each of them is exposed to specific attacks: homogeneity and semantic similarity attacks, privacy budget exhaustion under composition, and gradient inversion. The need for adaptive, dynamic privacy models is substantiated.

Keywords

privacy, medical data, nutritional data, k-anonymity, differential privacy, federated learning, re-identification.

Ko‘p o‘lchamli tibbiy va ovqatlanish ma’lumotlar bazalarida maxfiylikni saqlovchi algoritmlarning zaifliklari tahlili

Matyoqubov Og‘abek Bahrombek o‘g‘li
Urganch davlat universiteti
Yusupov Bahodir Karomatovich
Axborot-kommunikatsiya texnologiyalari va harbiy aloqa instituti

Annotatsiya. Maqolada ko‘p o‘lchamli tibbiy va ovqatlanish ma’lumotlar bazalarida qo‘llaniladigan maxfiylikni saqlovchi algoritmlarning zaifliklari tahlil qilinadi. Sintaktik anonimlashtirish modellari (k-anonimlik, l-xilma-xillik, t-yaqinlik),

differensial maxfiylik va federativ o‘qitish qiyosiy o‘rganilgan. Ularning har biri o‘ziga xos hujumlarga: gomogenlik va semantik o‘xshashlik hujumlariga, kompozitsiya natijasida maxfiylik byudjetining sarflanishiga hamda gradient inversiyasiga zaif ekani ko‘rsatilgan. Adaptiv va dinamik maxfiylik modellarini ishlab chiqish zarurligi asoslangan.

Kalit so‘zlar: maxfiylik, tibbiy ma’lumotlar, ovqatlanish ma’lumotlari, k-anonimlik, differensial maxfiylik, federativ o‘qitish, qayta identifikatsiyalash.

Kirish

Raqamli tibbiyot, mobil salomatlik (mHealth) va tibbiy buyumlar interneti (IoMT) tizimlari foydalanuvchilarning salomatlik ko‘rsatkichlari hamda ovqatlanish ratsioniga oid ma’lumotlarni uzluksiz to‘plamoqda. Ovqatlanish odatlari diabet, gipertoniya va allergiya kabi holatlarni bilvosita ochib beradi, shuning uchun bunday ma’lumotlar nozik toifaga kiradi.

Faqat to‘g‘ridan-to‘g‘ri identifikatorlarni olib tashlash yetarli emas: L. Sweeney tadqiqotida AQSh aholisining 87 foizi faqat jinsi, tug‘ilgan sanasi va pochta indeksi bo‘yicha yagona aniqlanishi ko‘rsatilgan [1].

Foydalanuvchi profili va hujum turlari

Foydalanuvchi profili $P_u = \langle DI_u, QI_u, SA_m(t), SA_n(t) \rangle$ ko‘rinishida ifodalanadi: bunda DI – to‘g‘ridan-to‘g‘ri identifikatorlar, QI – kva-identifikatorlar, $SA_m(t)$ va $SA_n(t)$ – vaqt bo‘yicha o‘zgaruvchi tibbiy va ovqatlanish atributlari. Karbogidrat iste’moli va glyukoza, natriy va qon bosimi o‘rtasidagi korrelyatsiya yashirin tashxisni ochib beradi. Asosiy tahdidlar: qayta identifikatsiyalash, atribut va a’zolik xulosasi.

Sintaktik anonimlashtirish modellarining zaifliklari

k-anonimlik modeli ekvivalentlik sinfi E uchun $|E| \geq k$ shartini talab qiladi va qayta identifikatsiyalash ehtimolini $1/k$ bilan chegaralaydi [1]. Biroq sinfdagi barcha yozuvlarda nozik atribut bir xil bo‘lsa (masalan, barchasida diabet tashxisi), tajovuzkor

aniq yozuvni ajratmasa ham kasallikni bilib oladi (gomogenlik hujumi). *l*-xilma-xillik modeli [2] bu kamchilikni bartaraf etadi, ammo semantik o‘xshash qiymatlar (oshqozon yarasi, gastrit, duodenit) oldida himoyasiz qoladi. *t*-yaqinlik modeli [3] sinf ichidagi taqsimot global taqsimotdan *t* dan ortiq farq qilmasligini talab qiladi, lekin atributlar soni ko‘payganda ma’lumotlarning tibbiy tahlil uchun yaroqliligini keskin pasaytiradi. Qiyosiy tahlil 1-jadvalda berilgan.

1-jadval. Sintaktik anonimlashtirish modellarining qiyosiy tahlili

Model	**Matematik sharti**	**Himoya qila olmaydigan zaiflik**	**Tibbiy va ovqatlanish ma’lumotlaridagi kamchiligi**
k-anonimlik	$\|E\| \geq k$	Gomogenlik va fon bilimlari hujumi	Bir xil nozik atribut kasallikni oshkor qiladi
l-xilma-xillik	$H(E) \geq \log l$	Semantik o‘xshashlik hujumi	O‘xshash tashxislar sirni fosh etadi
t-yaqinlik	$D[P, Q] \leq t$	Vaqtli qatorlar korrelyatsiyasi hujumi	Real bog‘liqlikni buzadi

Differensial maxfiylik va federativ o‘qitish zaifliklari

Tasodifiy *M* algoritm bir yozuvi bilan farq qiluvchi har qanday D_1 va D_2 to‘plamlar uchun $P[M(D_1) \in S] \leq e^{\varepsilon} \cdot P[M(D_2) \in S] + \delta$ tengsizlikni qanoatlantirsa, (ε, δ)-differensial maxfiylikni ta’minlaydi [4]. Usulning ikki zaifligi bor. Birinchidan, bir foydalanuvchining uzluksiz kiritiladigan ma’lumotlari bo‘yicha ketma-ket so‘rovlarda maxfiylik byudjeti yig‘iladi: $\varepsilon_{jami} = \Sigma\varepsilon_i$, natijada himoya darajasi pasayadi. Ikkinchidan, kichik ε qiymatida kiritilgan shovqin klinik jihatdan muhim qiymatlarni buzadi.

Federativ o‘qitishda ma’lumot qurilmada qoladi, serverga esa faqat model yangilanishlari uzatiladi: $W_{t+1} = W_t + \Sigma\,(n_k/N)\Delta w_k$ [5]. Biroq uzatilgan gradientlar orqali dastlabki o‘quv namunasini qayta tiklash mumkinligi isbotlangan [6]. DP-SGD usuli [7]

bu xavfni kamaytiradi, ammo model aniqligini pasaytiradi. Gomomorfik shifrlash esa mobil qurilmalar uchun hisoblash jihatidan og‘ir.

Natijalar 1-rasmda umumlashtirilgan.



1-rasm. Himoya algoritmlari va ularning asosiy zaifliklari sxemasi

Xulosa

Hech bir algoritm ko‘p o‘lchamli tibbiy va ovqatlanish ma’lumotlarida maxfiylik, foydalilik va hisoblash samaradorligini bir vaqtda to‘liq ta’minlay olmaydi. Sintaktik modellar gomogenlik va semantik hujumlarga, differensial maxfiylik byudjetning kompozitsion sarfiga, federativ o‘qitish esa gradient inversiyasiga zaif. Shu sababli maxfiylik byudjetini atributlar kritikligiga qarab adaptiv taqsimlovchi kompleks modellarni ishlab chiqish zarur.

Foydalanilgan adabiyotlar ro‘yxati

[1] Sweeney L. k-anonymity: a model for protecting privacy // International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems. – 2002. – Vol. 10, No. 5. – P. 557–570.

[2] Machanavajjhala A., Kifer D., Gehrke J., Venkitasubramaniam M. l-diversity: privacy beyond k-anonymity // ACM Transactions on Knowledge Discovery from Data. – 2007. – Vol. 1, No. 1. – Article 3.

[3] Li N., Li T., Venkatasubramanian S. t-closeness: privacy beyond k-anonymity and l-diversity // Proc. IEEE 23rd International Conference on Data Engineering (ICDE). – 2007. – P. 106–115.

[4] Dwork C., Roth A. The algorithmic foundations of differential privacy // Foundations and Trends in Theoretical Computer Science. – 2014. – Vol. 9, No. 3–4. – P. 211–407.

[5] McMahan H.B., Moore E., Ramage D., Hampson S., Agüera y Arcas B. Communication-efficient learning of deep networks from decentralized data // Proc. AISTATS. – 2017. – P. 1273–1282.

[6] Zhu L., Liu Z., Han S. Deep leakage from gradients // Advances in Neural Information Processing Systems 32 (NeurIPS). – 2019. – P. 14774–14784.

[7] Abadi M. et al. Deep learning with differential privacy // Proc. ACM CCS. – 2016. – P. 308–318.

PHYSICAL EDUCATION OF STUDENTS IN HIGHER EDUCATION INSTITUTIONS

Khabibova Kamila Bazarbaevna

Lecturer at Gulistan State University, Republic of Uzbekistan

Abstract

This article examines the importance of physical education for students in the higher education system. It analyzes the main objectives of physical education, its impact on the physical and mental health of young people, the formation of motor skills, the development of endurance, and the improvement of work capacity. Particular attention is paid to organizing physical education classes in accordance with students' individual characteristics, implementing modern educational technologies, and fostering lasting motivation for regular physical activity. The article substantiates the need to improve the physical education system in higher education institutions by combining traditional teaching methods, independent exercise, and innovative approaches. It emphasizes that physical education is an important condition for the harmonious development of individuals, the prevention of physical inactivity, and the promotion of a healthy lifestyle among students.

Keywords

physical education, students, higher education, physical culture, physical activity, health, healthy lifestyle, physical fitness, sports.

ФИЗИЧЕСКОЕ ВОСПИТАНИЕ СТУДЕНТОВ В ВЫСШЕМ УЧЕБНОМ ЗАВЕДЕНИИ

Хабибова Камила Базарбаевна

Преподаватель Гулистанского государственного университета, Республика Узбекистан.

Аннотация

В статье рассматривается значение физического воспитания студентов в системе высшего образования. Анализируются основные задачи физического воспитания, его влияние на физическое и психическое здоровье молодежи, формирование двигательных навыков, развитие выносливости и повышение работоспособности. Особое внимание уделяется организации занятий физической культурой с учетом индивидуальных особенностей студентов, внедрению современных образовательных технологий и формированию устойчивой мотивации к регулярной двигательной активности. Обосновывается необходимость совершенствования системы физического воспитания в вузах посредством сочетания традиционных методов обучения, самостоятельных занятий и инновационных подходов. Подчеркивается, что физическое воспитание является важным условием гармоничного развития личности, профилактики гиподинамии и формирования здорового образа жизни студентов.

Ключевые слова: физическое воспитание, студенты, высшее образование, физическая культура, двигательная активность, здоровье, здоровый образ жизни, физическая подготовленность, спорт.

Введение

Современная система высшего образования направлена не только на подготовку квалифицированных специалистов, но и на формирование всесторонне развитой личности, способной эффективно трудиться, принимать самостоятельные решения и вести здоровый образ жизни. В этом процессе физическое воспитание занимает особое место, поскольку способствует укреплению здоровья, развитию физических качеств и формированию культуры заботы о собственном организме.

Студенческий возраст характеризуется интенсивной интеллектуальной деятельностью, значительными учебными нагрузками и изменением образа

жизни. Длительное пребывание за компьютером, недостаток движения, нерегулярное питание и нарушения режима сна могут отрицательно влиять на физическое состояние студентов. В связи с этим организация эффективной системы физического воспитания в высших учебных заведениях приобретает особую актуальность.

Физическое воспитание представляет собой целенаправленный педагогический процесс, направленный на укрепление здоровья, развитие физических способностей, совершенствование двигательных навыков и формирование устойчивой потребности в физической активности. Его значение не ограничивается выполнением физических упражнений: оно также способствует развитию дисциплины, ответственности, настойчивости и навыков взаимодействия в коллективе.

Цель статьи — рассмотреть основные направления физического воспитания студентов в высших учебных заведениях, определить его роль в укреплении здоровья и предложить подходы к совершенствованию организации занятий физической культурой.

1. Значение физического воспитания в системе высшего образования

Физическое воспитание является важной составляющей образовательного процесса в вузе. Оно способствует формированию физических качеств, необходимых для повседневной деятельности, профессиональной подготовки и поддержания высокого уровня работоспособности.

К основным задачам физического воспитания относятся укрепление здоровья студентов, развитие силы, быстроты, выносливости, гибкости и координации движений, совершенствование двигательных навыков, формирование знаний о принципах здорового образа жизни и воспитание ответственного отношения к собственному здоровью.

Регулярная физическая активность способствует поддержанию нормальной работы сердечно-сосудистой и дыхательной систем, улучшению двигательной функции и повышению общей физической работоспособности. Кроме того, физические упражнения могут положительно влиять на эмоциональное состояние, помогать справляться со стрессом и поддерживать качество сна.

Важным аспектом является профилактика гиподинамии — состояния, связанного с недостаточной двигательной активностью. У студентов, проводящих значительную часть дня за учебниками и компьютерами, может формироваться привычка к малоподвижному образу жизни. Систематические занятия физической культурой позволяют уменьшить последствия недостатка движения и способствуют формированию полезных повседневных привычек.

Таким образом, физическое воспитание следует рассматривать не только как учебную дисциплину, но и как средство формирования культуры здоровья, необходимой студентам на протяжении всей жизни.

2. Основные формы и методы физического воспитания студентов

Организация физического воспитания в вузе предполагает использование различных форм занятий, которые должны соответствовать возрастным особенностям, состоянию здоровья, уровню физической подготовленности и интересам студентов.

Одной из основных форм являются обязательные занятия по физической культуре. Они позволяют систематически развивать физические качества, осваивать двигательные навыки и получать знания о принципах безопасной физической активности. Содержание занятий должно включать упражнения на развитие выносливости, силы, гибкости, координации и общей двигательной активности.

Важное место занимают спортивные секции и факультативные занятия. Они дают студентам возможность выбирать виды физической активности в соответствии с личными предпочтениями. Это могут быть игровые виды спорта, легкая атлетика, плавание, фитнес, гимнастика и другие направления. Участие в таких занятиях способствует развитию интереса к спорту и формированию устойчивой мотивации.

Самостоятельные занятия также являются необходимой частью физического воспитания. Студенты могут выполнять комплексы утренней гимнастики, ходить пешком, заниматься бегом, ездить на велосипеде или выполнять упражнения дома. При этом нагрузка должна увеличиваться постепенно и соответствовать индивидуальным возможностям организма.

Для повышения эффективности занятий целесообразно сочетать объяснение и показ упражнений, практическое выполнение, игровые методы, индивидуальные задания и работу в малых группах. Применение разнообразных методов помогает поддерживать интерес студентов и учитывать различия в их физической подготовленности.

3. Влияние физической активности на здоровье и работоспособность студентов

Физическая активность оказывает комплексное воздействие на организм человека. При систематических занятиях физическими упражнениями совершенствуется работа сердечно-сосудистой системы, повышается эффективность дыхания и улучшается способность организма адаптироваться к физическим нагрузкам.

Развитие выносливости способствует более эффективному выполнению продолжительной физической работы. Силовые упражнения укрепляют мышцы и поддерживают функциональные возможности опорно-двигательного аппарата.

Упражнения на гибкость и координацию помогают совершенствовать двигательные навыки и контролировать движения.

Физическое воспитание имеет значение и для психоэмоционального состояния студентов. Учебная деятельность нередко сопровождается напряжением, экзаменационным стрессом и высокой концентрацией внимания. Регулярная двигательная активность может способствовать улучшению настроения, снижению субъективного ощущения стресса и поддержанию общего психологического благополучия.

Кроме того, занятия физической культурой формируют навыки самоконтроля и самодисциплины. Студент учится планировать нагрузку, соблюдать режим отдыха, оценивать собственные возможности и постепенно достигать поставленных целей.

Вместе с тем физические упражнения должны подбираться с учетом состояния здоровья. Чрезмерные нагрузки, отсутствие разминки и неправильная техника выполнения могут повышать риск травм. Поэтому преподавателю необходимо учитывать медицинские рекомендации, уровень подготовленности и индивидуальные особенности каждого студента.

4. Проблемы организации физического воспитания в вузах

Несмотря на значимость физического воспитания, в образовательном процессе могут возникать определенные трудности. Одной из них является недостаточная мотивация части студентов к регулярным занятиям. Некоторые обучающиеся воспринимают физическую культуру исключительно как обязательную дисциплину и не связывают ее с долгосрочным сохранением здоровья.

Другой проблемой выступает ограниченность времени. Высокая учебная нагрузка, подготовка к экзаменам и выполнение самостоятельных заданий могут приводить к сокращению времени, выделяемого на физическую активность.

Определенное значение имеет и материально-техническое обеспечение вузов. Недостаток спортивного инвентаря, ограниченный доступ к спортивным площадкам и залам, а также отсутствие разнообразных программ могут снижать привлекательность занятий.

Кроме того, различия в физической подготовленности студентов требуют дифференцированного подхода. Одинаковая нагрузка не всегда подходит обучающимся с разным состоянием здоровья и уровнем тренированности. Поэтому необходимо разрабатывать программы, позволяющие адаптировать упражнения к индивидуальным возможностям студентов.

Решение этих проблем предполагает повышение качества преподавания, расширение выбора видов физической активности, развитие спортивной инфраструктуры и формирование устойчивой мотивации к здоровому образу жизни.

5. Пути совершенствования физического воспитания студентов

Совершенствование физического воспитания в высших учебных заведениях требует комплексного подхода. В первую очередь необходимо повышать мотивацию студентов, объясняя практическую пользу физической активности для здоровья, учебной работоспособности и качества жизни.

Одним из эффективных направлений является индивидуализация учебных программ. При планировании занятий следует учитывать физическую подготовленность, состояние здоровья и интересы обучающихся. Возможность выбора отдельных видов спорта и упражнений повышает вовлеченность студентов в образовательный процесс.

Перспективным направлением является использование цифровых технологий. Фитнес-приложения, электронные дневники физической активности и носимые устройства могут помогать студентам отслеживать продолжительность движения, количество шагов и регулярность тренировок. При этом цифровые показатели должны использоваться разумно и не заменять профессиональную оценку состояния здоровья.

Необходимо также развивать внеучебную спортивную деятельность: студенческие турниры, спортивные фестивали, массовые соревнования, дни здоровья и мероприятия на открытом воздухе. Такие формы работы способствуют укреплению командного взаимодействия, развитию социальной активности и формированию положительного отношения к физической культуре.

Особое внимание следует уделять профессиональной компетентности преподавателей. Использование современных педагогических методов, соблюдение принципов постепенного увеличения нагрузки и обеспечение безопасности занятий позволяют повысить качество физического воспитания.

Наконец, важно формировать у студентов понимание того, что физическая активность должна быть регулярной частью повседневной жизни. Даже небольшие изменения — ходьба пешком, активные перерывы между занятиями, использование лестницы вместо лифта и выполнение простых упражнений — могут способствовать уменьшению малоподвижности.

Заключение

Физическое воспитание студентов является важным компонентом системы высшего образования и играет значительную роль в формировании здорового образа жизни, укреплении здоровья и развитии физических качеств молодежи. Регулярные занятия физической культурой способствуют совершенствованию

двигательных навыков, поддержанию работоспособности и формированию положительного отношения к собственному здоровью.

Для повышения эффективности физического воспитания необходимо совершенствовать содержание учебных занятий, учитывать индивидуальные особенности студентов, расширять возможности участия в спортивных секциях и внедрять современные образовательные технологии. Не менее важными условиями являются развитие спортивной инфраструктуры, повышение квалификации преподавателей и формирование устойчивой мотивации к двигательной активности.

Таким образом, физическое воспитание следует рассматривать как непрерывный процесс, объединяющий образовательные, оздоровительные и воспитательные задачи. Его эффективная организация в вузе создает условия для гармоничного развития личности и подготовки физически активных, ответственных и социально адаптированных специалистов.

Список литературы

1. World Health Organization. *WHO Guidelines on Physical Activity and Sedentary Behaviour*. Geneva: World Health Organization, 2020.

2. World Health Organization. *Global Action Plan on Physical Activity 2018–2030: More Active People for a Healthier World*. Geneva: WHO, 2018.

3. Bailey R. Physical education and sport in schools: A review of benefits and outcomes. *Journal of School Health*. 2006;76(8):397–401.

4. Warburton D. E. R., Bredin S. S. D. Health benefits of physical activity: A systematic review of current systematic reviews. *Current Opinion in Cardiology*. 2017;32(5):541–556.

5. UNESCO. *Quality Physical Education: Guidelines for Policy-Makers*. Paris: UNESCO, 2015.

THE ECOLOGICAL SIGNIFICANCE OF THE HABITAT OF WATERBIRDS IN THE TODAKOL RESERVOIR

Valiyeva Feruza Telmon qizi
Master's student, Navoi State University
feruzavaliyeva3050@gmail.com

Abstract

This article highlights the ecological significance of the Todakol Reservoir as a habitat for waterbirds. Based on scientific literature, it analyzes the role of the reservoir's hydrological characteristics, aquatic and riparian vegetation, food resources, and natural habitats in the lives of birds. The article also examines the importance of the Todakol Reservoir as a feeding, resting, and wintering site, as well as a stopover area for waterbirds during seasonal migration. The potential effects of fluctuations in water levels, water pollution, habitat loss, and other human-related factors on the living conditions of waterbirds are discussed. Based on an analysis of existing scientific sources, ecological approaches are presented for preserving the reservoir's biodiversity, protecting natural habitats, and conducting long-term monitoring of waterbirds.

Keywords

Todakol Reservoir, waterbirds, wetland ecosystems, habitat, ecological significance, biodiversity, migration, food resources, anthropogenic factors, ornithological monitoring.

TO‘DAKO‘L SUV OMBORI GIDROFIL QUSHLARI YASHASH MUHITINING EKOLOGIK AHAMIYATI

Valiyeva Feruza Telmon qizi
Magistr, Navoiy davlat universiteti

Annotatsiya: Ushbu maqolada To‘dako‘l suv ombori gidrofil qushlarining yashash muhiti sifatidagi ekologik ahamiyati yoritilgan. Suv omborining gidrologik

xususiyatlari, suv va qirg‘oqbo‘yi o‘simliklari, oziqa resurslari hamda tabiiy yashash joylarining qushlar hayotidagi o‘rni ilmiy adabiyotlar asosida tahlil qilinadi. Shuningdek, To‘dako‘l suv omborining suv qushlari uchun oziqlanish, dam olish, qishlash va mavsumiy migratsiya davrida qo‘nim topish hududi sifatidagi ahamiyati ko‘rib chiqiladi. Suv sathining o‘zgarishi, suvning ifloslanishi, yashash muhitining qisqarishi va inson faoliyati bilan bog‘liq boshqa omillarning gidrofil qushlar yashash sharoitlariga ehtimoliy ta’siri muhokama qilinadi. Mavjud ilmiy manbalar tahlili asosida suv omborining biologik xilma-xilligini saqlash, tabiiy yashash muhitlarini muhofaza qilish va suv qushlarini uzoq muddatli monitoring qilish bo‘yicha ekologik yondashuvlar bayon etiladi.

Kalit so‘zlar: To‘dako‘l suv ombori, gidrofil qushlar, suv-botqoq ekotizimlari, yashash muhiti, ekologik ahamiyat, biologik xilma-xillik, migratsiya, oziqa resurslari, antropogen omillar, ornitologik monitoring.

KIRISH

Suv-botqoq ekotizimlari biologik xilma-xillikni saqlash, ko‘plab hayvon turlarining yashashi va tabiiy ekologik jarayonlarning barqaror kechishini ta’minlashda muhim ahamiyatga ega. Ayniqsa, ko‘l va suv omborlari, sayoz suvli maydonlar hamda qirg‘oqbo‘yi hududlari gidrofil qushlarning oziqlanishi, dam olishi, ko‘payishi va mavsumiy migratsiya davrida qo‘nim topishi uchun qulay sharoit yaratadi. Suv qushlari suv ekotizimlarida yirtqich, o‘txo‘r va urug‘ tarqatuvchi organizmlar sifatida ishtirok etib, oziq zanjirlari hamda moddalar aylanishiga ta’sir ko‘rsatadi. Shuningdek, ayrim qush turlari yashash muhitining ekologik holatini baholashda bioindikator vazifasini bajarishi mumkin [Green va Elmberg, 2014].

O‘zbekistonning qurg‘oqchil iqlim sharoitida tabiiy ko‘llar, suv omborlari va boshqa suv-botqoq hududlari qushlar uchun alohida ekologik ahamiyat kasb etadi. Mintaqadagi suv manbalari nafaqat mahalliy qushlarning yashashini ta’minlaydi, balki

mavsumiy ko‘chib yuruvchi turlar uchun ham muhim qo‘nim hududlari hisoblanadi. Kasprzykowski va hammualliflarining (2014) tadqiqotida O‘zbekistonning Amudaryo va Sirdaryo hududlaridagi suv qushlari jamoalari hamda ularning ko‘payishdan keyingi migratsiya davridagi tarqalishi o‘rganilgan. Mualliflar sayoz suv havzalari suv qushlari uchun jozibador yashash joylari bo‘lishi mumkinligini ta’kidlagan. Mazkur tadqiqot bevosita To‘dako‘l suv omboriga bag‘ishlanmagan bo‘lsa-da, O‘zbekistonning qurg‘oqchil hududlarida suv qushlari yashash muhitining ahamiyatini tushunishda ilmiy asos bo‘lib xizmat qiladi.

To‘dako‘l suv ombori Navoiy viloyatidagi muhim suv havzalaridan biri bo‘lib, uning ekologik ahamiyati suv resurslari, suv va qirg‘oqbo‘yi organizmlari hamda suv qushlari bilan bog‘liq tabiiy jarayonlarda namoyon bo‘ladi. To‘dako‘l va Quyimozor suv omborlari birgalikda xalqaro ahamiyatga ega suv-botqoq hududi sifatida Ramsar ro‘yxatiga 2020-yil 19-avgustda kiritilgan. Ramsar konvensiyasining rasmiy ma’lumotida ushbu hudud uchun jami 229 ta qush turi qayd etilgani ko‘rsatilgan. Bu ko‘rsatkich ikki suv omborini birlashtirgan umumiy hududga tegishli bo‘lib, uni faqat To‘dako‘l suv omborida qayd etilgan turlar soni sifatida talqin qilish mumkin emas [Convention on Wetlands, 2020].

Suv omborining gidroekologik xususiyatlari qushlarning yashash sharoitlarini belgilovchi muhim omillardan hisoblanadi. Suv sathining o‘zgarishi, sayoz suvli maydonlarning mavjudligi, qirg‘oqbo‘yi o‘simliklarining rivojlanishi va oziqa organizmlarining tarqalishi qushlarning hududdan foydalanishiga ta’sir ko‘rsatishi mumkin. Khakimova va hammualliflari (2021) To‘dako‘l suv omborining fizik-geografik, gidrologik, gidrokimyoviy va gidrobiologik xususiyatlarini hamda antropogen ta’sir bilan bog‘liq ekologik masalalarni tahlil qilgan. Ushbu tadqiqot qushlarga bevosita bag‘ishlanmagan bo‘lsa-da, ularning yashash muhitini shakllantiruvchi suv ekotizimi sharoitlarini tushunishda ahamiyatlidir.

Gidrofil qushlar yashash muhitining ekologik qiymati faqat qush turlarining mavjudligi bilan belgilanmaydi. Suv havzasining oziqa resurslari, yashirinish imkoniyatlari, tinch qo‘nim joylari va mavsumiy sharoitlari ham muhim hisoblanadi. Qushlarning ekotizimdagi funksional roli ularning boshqa organizmlar bilan o‘zaro munosabatlari, oziq zanjiridagi ishtiroki va ayrim ekologik jarayonlarga ta’siri orqali namoyon bo‘ladi. Green va Elmberg (2014) suv qushlarining ekotizim xizmatlari, biologik xilma-xillikni saqlashdagi o‘rni hamda ekologik sharoitlarni baholashdagi imkoniyatlarini ilmiy jihatdan umumlashtirgan.

Shu bilan birga, suv omborlarining ekologik holatiga inson faoliyati ham ta’sir ko‘rsatishi mumkin. Suv resurslaridan xo‘jalik maqsadlarida foydalanish, suvning ifloslanishi, qirg‘oqbo‘yi hududlarining o‘zgarishi va qushlarning bezovta qilinishi yashash muhitining sifatiga ta’sir etuvchi ehtimoliy omillardir. Shu sababli To‘dako‘l suv omborida gidrofil qushlar yashash muhitining ekologik ahamiyatini ilmiy adabiyotlar asosida o‘rganish, mavjud ma’lumotlarni umumlashtirish va hududni muhofaza qilishning ustuvor yo‘nalishlarini aniqlash muhimdir.

Tadqiqotning maqsadi ilmiy adabiyotlar va rasmiy manbalarda mavjud ma’lumotlar asosida To‘dako‘l suv ombori yashash muhitining gidrofil qushlar uchun ekologik ahamiyatini yoritish, ushbu muhitning asosiy ekologik xususiyatlarini tavsiflash hamda uni muhofaza qilish bilan bog‘liq muammolarni tahlil qilish.

MATERIALLAR VA METODLAR

Mazkur maqolada To‘dako‘l suv ombori gidrofil qushlari yashash muhitining ekologik ahamiyatini yoritish maqsadida ilmiy adabiyotlar va rasmiy axborot manbalarini tahlil qilish usulidan foydalanildi. Tadqiqotning axborot bazasini suv qushlari ekologiyasi, suv-botqoq ekotizimlari, qushlarning yashash muhiti va migratsiyasi, shuningdek, To‘dako‘l suv omborining ekologik xususiyatlariga bag‘ishlangan ilmiy maqolalar hamda xalqaro tashkilotlarning ma’lumotlari tashkil etdi.

To‘dako‘l suv omborining ekologik sharoitlarini tavsiflashda Khakimova va hammualliflarining (2021) suv ombori ekologik holati va baliq resurslariga bag‘ishlangan tadqiqoti hisobga olindi. Mazkur manba suv ekotizimining umumiy xususiyatlarini tushunishda foydalanildi. Hududning suv qushlari uchun ahamiyatini baholashda esa To‘dako‘l va Quyimozor suv omborlari birgalikda xalqaro ahamiyatga ega suv-botqoq hududi sifatida tan olingani haqidagi Ramsar konvensiyasining rasmiy ma’lumotlariga tayanildi [Convention on Wetlands, 2020].

Suv qushlarining ekologik vazifalari, yashash muhiti bilan o‘zaro munosabatlari va ekotizimdagi o‘rnini yoritishda Green va Elmberg (2014) tomonidan chop etilgan ilmiy sharh hamda O‘zbekistonning qurg‘oqchil hududlarida suv qushlari jamoalarini o‘rgangan Kasprzykowski va hammualliflarining (2014) tadqiqoti tahlil qilindi. Ushbu manbalar suv qushlarining ekologik talablari va yashash muhitidan foydalanish xususiyatlarini umumiy ilmiy nuqtayi nazardan izohlash uchun qo‘llanildi.

Tadqiqot davomida tavsifiy tahlil, qiyosiy tahlil va ilmiy ma’lumotlarni umumlashtirish usullaridan foydalanildi. Tavsifiy tahlil orqali To‘dako‘l suv omborining gidrofil qushlar uchun muhim bo‘lishi mumkin bo‘lgan ekologik xususiyatlari yoritildi. Qiyosiy tahlilda To‘dako‘lga oid ma’lumotlar suv qushlari ekologiyasi bo‘yicha boshqa ilmiy tadqiqotlarda keltirilgan xulosalar bilan taqqoslandi. Umumlashtirish usuli esa yashash muhitining ekologik ahamiyati va uni muhofaza qilish masalalari yuzasidan umumiy xulosalar shakllantirishga xizmat qildi.

Maqola adabiyotlar tahliliga asoslangan bo‘lib, unda yangi dala kuzatuvlari yoki mustaqil qushlar sanog‘i natijalari keltirilmagan. Shu sababli muayyan qush turlarining hozirgi soni, mavsumiy tarqalishi yoki To‘dako‘l hududida ko‘payish holati to‘g‘risidagi xulosalar faqat tegishli manbalarda tasdiqlangan ma’lumotlar doirasida talqin qilindi. Bunday yondashuv mavjud ilmiy dalillarni kuzatuv natijalaridan farqlash va maqola xulosalarining ishonchliligini ta’minlash imkonini beradi.

NATIJALAR VA MUHOKAMA

To‘dako‘l suv omborining gidrofil qushlar uchun yashash muhiti sifatidagi ahamiyati. Suv havzalarining gidrofil qushlar uchun ekologik ahamiyati, avvalo, ularning yashash, oziqlanish, dam olish va mavsumiy ko‘chish jarayonlarini ta’minlay olishi bilan belgilanadi. Bunday hududlarda suvning chuqurligi, qirg‘oq chizig‘ining tuzilishi, suv o‘simliklarining tarqalishi va oziqa organizmlarining mavjudligi qushlarning yashash muhitidan foydalanishiga ta’sir ko‘rsatadi. Green va Elmberg (2014) suv qushlarining ekotizimdagi vazifalarini tahlil qilib, ularning oziq zanjirlari, moddalar aylanishi va ayrim organizmlarning tarqalishidagi ishtirokini ta’kidlagan.

To‘dako‘l suv ombori Navoiy viloyatidagi suv ekotizimlaridan biri bo‘lib, suv va qirg‘oqbo‘yi yashash muhitlarining mavjudligi uni suv qushlari ekologiyasi nuqtayi nazaridan muhim hududga aylantiradi. To‘dako‘l va Quyimozor suv omborlarining birgalikda Ramsar konvensiyasi doirasida xalqaro ahamiyatga ega suv-botqoq hududi sifatida tan olinishi mazkur hududning biologik xilma-xillikni saqlashdagi ahamiyatini ko‘rsatadi [Convention on Wetlands, 2020]. Biroq ushbu hudud bo‘yicha keltirilgan qush turlari soni ikkala suv omborini birlashtirgan hududga tegishli ekanini hisobga olish lozim.

Suv va qirg‘oqbo‘yi yashash muhitlarining ekologik vazifalari. Gidrofil qushlar suv havzasining turli qismlaridan o‘z ekologik ehtiyojlariga muvofiq foydalanadi. Sayoz suvli maydonlar suv umurtqasizlari, mayda baliqlar va boshqa oziqa organizmlarini izlaydigan qushlar uchun qulay bo‘lishi mumkin. Ochiq suv maydonlari ayrim suzuvchi qushlarning oziqlanishi va dam olishi uchun xizmat qilsa, qamishzorlar hamda boshqa qirg‘oqbo‘yi o‘simliklari yashirinish, uya qurish va ayrim yirtqichlardan himoyalanish imkoniyatini yaratadi.

Bu ekologik bog‘liqlik suv havzasining faqat suv yuzasi bilan cheklanmasligini, balki uning qirg‘oqbo‘yi qismlari va sayoz suvli zonalari ham qushlar uchun

muhimligini ko‘rsatadi. Green va Elmberg (2014) suv qushlarining ekotizimdagi funksional rolini umumlashtirar ekan, ularning boshqa organizmlar va tabiiy jarayonlar bilan uzviy bog‘liqligiga e’tibor qaratgan.

To‘dako‘l suv omborining ekologik holatiga bag‘ishlangan Khakimova va hammualliflarining (2021) tadqiqoti suv havzasining ekologik xususiyatlarini baholash uchun muhim manba hisoblanadi. Suv omborining gidrologik va gidrobiologik sharoitlari qushlar foydalanadigan oziqa resurslari hamda yashash joylarining holati bilan bog‘liq bo‘lishi mumkin. Shunga qaramay, suv omborining ekologik holatiga oid umumiy ma’lumotlarni qushlarning aniq turlari yoki ularning soni haqida bevosita dalil sifatida qabul qilish mumkin emas.

Gidrofil qushlarning oziqlanishi va oziqa zanjiridagi o‘rni. Suv qushlarining oziqlanish xususiyatlari ularning tana tuzilishi, xulq-atvori va yashash muhitiga moslashuviga bog‘liq. Ayrim turlar suv o‘simliklari va ularning urug‘lari bilan oziqlansa, boshqalari suv umurtqasizlari, baliqlar yoki boshqa mayda suv organizmlarini iste’mol qiladi. Shu sababli suv havzasidagi oziqa resurslarining xilma-xilligi turli ekologik guruhlarga mansub qushlarning bir hududda yashash imkoniyatini oshirishi mumkin. Suv qushlari oziqa zanjirining turli pog‘onalarida ishtirok etib, suv ekotizimidagi organizmlar o‘rtasidagi munosabatlarga ta’sir ko‘rsatadi. Green va Elmberg (2014) suv qushlarining ekotizim xizmatlarini yoritib, ularning ekologik jarayonlardagi ahamiyatini ko‘rsatgan. Biroq To‘dako‘l suv omborida har bir qush turining oziqlanish ratsioni yoki oziqa zanjiridagi ulushini aniqlash uchun bevosita kuzatuvlar va maxsus tadqiqotlar zarur.

Shu nuqtayi nazardan, To‘dako‘l suv omborining oziqa resurslarini o‘rganish gidrofil qushlarning yashash muhitidan foydalanish xususiyatlarini tushunishda istiqbolli yo‘nalish hisoblanadi. Bunday tadqiqotlar suv organizmlari, suv o‘simliklari va qushlar o‘rtasidagi ekologik aloqalarni aniqlashga yordam beradi.

To‘dako‘l suv omborining mavsumiy migratsiyadagi ahamiyati. Markaziy Osiyo hududi turli yo‘nalishlarda harakatlanuvchi ko‘chmanchi qushlar uchun muhim geografik mintaqalardan biridir. Migratsiya davrida suv havzalari qushlarning oziqlanishi, energiya zaxirasini to‘plashi va keyingi parvozga tayyorlanishi uchun zarur sharoit yaratishi mumkin. Suv sathi va oziqa resurslarining mavsumiy o‘zgarishi esa qushlarning muayyan hududlardan foydalanish darajasiga ta’sir qilishi mumkin. Kasprzykowski va hammualliflari (2014) O‘zbekistonning Amudaryo va Sirdaryo hududlarida suv qushlarining ko‘payishdan keyingi migratsiya davridagi jamoalarini o‘rgangan. To‘dako‘l suv omborining migratsiya davridagi ekologik ahamiyatini aniqroq baholash uchun qushlarni yilning turli fasllarida muntazam kuzatish, turlar tarkibini aniqlash va ularning sonidagi o‘zgarishlarni qayd etish lozim. Bunday monitoring suv omborining mahalliy va ko‘chib yuruvchi qushlar uchun tutgan o‘rnini aniqlashga imkon beradi.

Yashash muhitiga ta’sir etuvchi ekologik omillar. Suv omborlarining ekologik barqarorligi tabiiy gidrologik jarayonlar va inson faoliyati bilan chambarchas bog‘liq. Suv sathining o‘zgarishi, suv sifatining yomonlashishi, qirg‘oqbo‘yi o‘simliklarining qisqarishi va insonlar tomonidan qushlarning bezovta qilinishi suv qushlarining yashash sharoitlariga salbiy ta’sir ko‘rsatishi mumkin. Bunday ta’sirlarning darajasi hududning tabiiy xususiyatlari va xo‘jalik faoliyati ko‘lamiga bog‘liq. Khakimova va hammualliflari (2021) To‘dako‘l suv omborining ekologik holati va undan foydalanish bilan bog‘liq masalalarni ko‘rib chiqqan. Ushbu manba suv havzasining ekologik xususiyatlarini muhokama qilish uchun asos bo‘lsa-da, undagi har bir ekologik muammoning gidrofil qushlarga ta’sirini alohida baholash uchun qo‘shimcha ornitologik ma’lumotlar zarur.

Suv ombori ekotizimini muhofaza qilishda suv sifatini nazorat qilish, qirg‘oqbo‘yi yashash muhitlarini saqlash, qushlar ko‘p to‘planadigan hududlarda bezovtalikni

kamaytirish va muntazam ekologik monitoring olib borish muhim yo‘nalishlar hisoblanadi. Bu chora-tadbirlarni samarali rejalashtirish uchun qushlar tarkibi, mavsumiy tarqalishi va yashash muhitidan foydalanishi haqida ishonchli ma’lumotlar to‘planishi lozim.

Ilmiy adabiyotlar tahlili To‘dako‘l suv omborining gidrofil qushlar uchun ekologik ahamiyatini baholashda suv havzasining tabiiy xususiyatlari, oziqa resurslari, qirg‘oqbo‘yi yashash muhitlari va mavsumiy jarayonlarni birgalikda o‘rganish zarurligini ko‘rsatadi.

XULOSA

To‘dako‘l suv ombori gidrofil qushlarning yashashi, oziqlanishi va mavsumiy migratsiyasi uchun muhim ekologik ahamiyatga ega. Suv havzasining gidrologik xususiyatlari, oziqa resurslari va qirg‘oqbo‘yi o‘simliklari qushlar uchun qulay yashash muhitini shakllantirishda muhim o‘rin tutadi. Ushbu hududning biologik xilma-xilligini saqlash uchun suv sifatini nazorat qilish, tabiiy yashash joylarini muhofaza etish va muntazam ornitologik monitoring olib borish zarur. Kelgusidagi tadqiqotlar qushlar tur tarkibi va sonining mavsumiy o‘zgarishlarini aniqlashga hamda suv omborining ekologik ahamiyatini chuqurroq baholashga xizmat qiladi.

FOYDALANILGAN ADABIYOTLAR RO‘YXATI

1. Kasprzykowski, Z., Goławski, A., Mitrus, C., & Stański, T. (2014). A comparison of the structure of 2 waterbird assemblages during postbreeding movements in the arid zone of Uzbekistan. Turkish Journal of Zoology, 38(5), 590–597.

2. Green, A. J., & Elmberg, J. (2014). Ecosystem services provided by waterbirds. Biological Reviews, 89(1), 105–122.

3. Khakimova, R., Mullabaev, N., Sobirov, J., Kobilov, A., & Sobirov, B. (2021). Ecological state of Tudakul reservoir in Uzbekistan and estimation of fish capture in last decades. E3S Web of Conferences, 258, 08029.

4. Qiu, J., Zhang, Y., & Ma, J. (2024). Wetland habitats supporting waterbird diversity: Conservation perspective on biodiversity-ecosystem functioning relationship. Journal of Environmental Management, 357, 120663.

5. Mott, R., Prowse, T. A. A., Cassey, P., & Rogers, D. J. (2023). Measuring habitat quality for waterbirds: A review. Ecology and Evolution, 13(4), e09905.

6. Amano, T., Székely, T., Sandel, B., Nagy, S., Mundkur, T., Langendoen, T., Blanco, D., Soykan, C. U., & Sutherland, W. J. (2018). Successful conservation of global waterbird populations depends on effective governance. Nature, 553, 199–202.

7. Lanovenko, Y. (2006). The importance of Uzbekistan's wetlands for wintering waterfowl of the Central Asian Flyway. In G. C. Boere, C. A. Galbraith, & D. A. Stroud (Eds.), Waterbirds around the world (pp. 285–286). The Stationery Office, Edinburgh.

8. Wetlands International. (2012). Waterbird Population Estimates, Fifth Edition: Summary Report. Wetlands International, Wageningen, The Netherlands.

9. Convention on Wetlands. (2020, September 16). Uzbekistan names its third Wetland of International Importance.

THE PROBLEM OF HUMAN BEINGS IN THE PHILOSOPHICAL WORLDVIEW

Sh. Mirabdullaeva

Doctor of Philosophy in Psychological Sciences (PhD), Associate Professor at the Military University of the Ministry of Defense of the Republic of Uzbekistan

Abstract

The article discusses the role of philosophical methodology in the study of the human being alongside the development of specific sciences; the specific tasks facing science; manifestations of human life; integrative functions in the understanding of the human being; the study of human development in nature and society; new facts accumulated in traditional psychology; and the functions of philosophical methodology.

Keywords

philosophy, human being, methodology, science, development, genetics, function, personality, mechanically, nature, society, psychology, research, organism, individual, biological, social.

ПРОБЛЕМА ЧЕЛОВЕКА В ФИЛОСОФСКОЙ КАРТИНЕ МИРА

Ш.Мирабдуллаева, доктор философии в области психологических наук (PhD), доцент военного университета МО РУ

Аннотация. В статье речь идёт о роли философской методологии в изучении человека с развитием конкретных наук, о конкретных задачах науки стоящих перед ней, о проявлений человеческой жизни, об и*нтегративных функциях* в познании человека, об изучении развития человека в природе и обществе, о новых фактах накопленных в традиционной психологии, о функциях философской методологи.

Ключевые слова: философия, человек, методология, наука, развитие, генетика, функция, личность, механически, природа, общества, психология, исследования, организм, индивид, психология, биологический, социальный.

В качестве высшего уровня методологии науки выступает философская методология, задающая общую стратегию изучения принципов познания и построения категориального аппарата в социологии, истории, философии, этнографии, археологии, антропологии, культурологии, семиотике, биологии человека, — словом, в любой конкретной области человекознания, в том числе и в психологии.

Роль философской методологии изучения человека с развитием конкретных наук не уменьшается, а возрастает. Любая конкретная наука в зависимости от задач, стоящих перед ней, видит свой *объектив-но* существующий пласт проявлений человеческой жизни и по нему порой пытается составить представление о жизни в целом. Так, например, общая биология видит в человеке *организм*, обладающий рядом особенностей, сближающих человека с любыми другими проявлениями жизни на земле: обмен веществ, наличие генетической программы, передающейся из генерации в генерацию, и т.п. Биология человека ставит своей целью изучение специфических особенностей *индивида* как представителя вида Homo sapiens, обладающего рядом существенных отличий от любых других биологических видов.

Кибернетика – наука о системах и методах управления машинами, живыми организмами – изучает *человека как адаптивную саморегулирую-щуюся систему*, имеющую аналоги как в живой, так и в неживой природе.

Филология, исследующая, в частности, человека в античной трагедии, рассказывает о *герое*, не отягощенном бременем внутренних переживаний и сомнений, а совершающем поступки и деяния, предписанные судьбой. Если

представить, что специалисты разных конкретных наук поставят своей общей целью выяснить, что же такое человек, то при всех их стараниях целостный, интегративный образ человека так и не возникнет. И дело здесь не только в различии языков науки и процедур исследования, характере задач, стоящих в разных отраслях человек знания. Основная трудность состоит в том, что в каждом объективно существующем предмете конкретной науки о человеке используются лишь элементы некоторого целого, которые иногда принимаются за само это целое: организм, биологический индивид, античный герой становятся опорными пунктами построения единого образа человека.

Интегративную функцию в познании человека выполняет философская методология науки, которая выделяет *развитие человека в природе и обществе* как предмет философского познания.

В одной из последних работ Б.Г. Ананьева – «О проблемах современного человек знания» (1977) непосредственно говорится о том, что *решение проблемы человека требует выхода за границы психологии*. Он выделяет три особенности развития науки, свидетельствующие о зарождении человек знания: «Первой из них является превращение проблемы человека в общую проблему всей науки в целом, всех ее разделов, включая точные и технические науки. Вторая особенность заключается во все возрастающей дифференциации отдельных дисциплин и их дроблении на ряд более частных учений. Наконец, третья особенность современного научного развития характеризуется тенденцией к объединению различных наук, аспектов и методов исследования человека в различные комплексные системы, к построению синтетических характеристик человеческого развития. Эти особенности связаны с возникновением новых научных дисциплин и соединением посредством их многих ранее далеких одна от

другой областей естествознания и истории, гуманитарных наук и техники, медицины и педагогики».

Встречное движение при изучении развития человека в природе и обществе представителей философской методологии и конкретно-научной методологии — обязательное условие прогресса человекознания. Однако такого рода встречное движение лишь тогда становится осмысленным и продуктивным, когда представители конкретных наук опираются на философскую методологию, признавая за ней функцию интегратора, архитектора при строительстве предмета науки и осуществлении междисциплинарных исследований, а философы не чураются новых открытий в конкретных науках и не подменяют движение идей движением слов.

В последнем случае философская методология науки соскальзывает в сферу *формальной логики*, начиная, например, устанавливать при изучении человека связи между понятиями «человек», «организм», «индивид», «*личность*», «*индивидуальность*» по произвольно взятым внешним признакам человека. При этом отчасти улавливается представление о реальных соотношениях, стоящих за этими понятиями проявлениях развития человека в природе и обществе. Тогда понятие «человек» становится самым широким по объему понятием, графически изображаемым большей окружностью. Понятие «организм» помещается рядом или внутри понятия «человек», выражая биологическое начало в человеке. Понятие «индивид» в зависимости от прибавления к нему эпитетов «биологический» или «социальный» отражает биологические или социально-ролевые характеристики отдельного неделимого представителя человеческого рода. За понятием «личность» сохраняется социальная характеристика человека. Через понятие «индивидуальность» передается представление о «биосоциальной» природе человека, отличающей одного человека от всех других членов

человеческого общества. Подобная логика, перечисляющая набор внешних признаков человека и механически соединяющая содержание понятия «человек» путем сложения концентрических кругов разного объема понятий – «организма», «индивида», биологического плюс социального и т.п., создает иллюзию интеграции между науками и оказывается во власти стереотипного мышления. Тем самым она вступает в противоречие со второй функцией философской методологии – критико-конструктивной функцией (*Э.Г. Юдин*).

Критико-конструктивная функция философской методологии подвер-гает сомнению принятые в качестве аксиом, исходных постулатов, предельных категорий достижения науки или мировоззрения определенного исторического периода, которые возводятся в ранг незыблемых, вечно существующих истин. *Эти истины, становящиеся фундаментом тех или иных научных учений и мировоззрений, часто превращаются в бытующие в культуре стереотипы, над сознательные установки, схематизмы сознания. Они объединяют сообщества ученых, которые руководствуются ими, переставая давать себе отчет в историко-культурном происхождении этих стереотипов*. И только когда развивающееся научное знание приводит к появлению различного рода парадоксов, внутренних противоречий, потока не укладывающихся в старые схемы фактов, в фокус внимания философской методологии попадают постулаты, тормозящие развитие науки.

Так, естественность системы Птолемея, утверждающей, что Солнце вращается вокруг Земли, привела к возведению данной системы в ранг мировоззрения и официальной идеологии. Факты, противоречащие этой системе, и прежде всего трудности при ее использовании в разных видах практики побудили Коперника подвергнуть сомнению сам фундамент птолемеевской системы и лишить Землю положения центра Вселенной.

Третья функция философской методологии – *мировоззренческая нормативно-аксиологическая функция* (*Э.Г. Юдин*). Она заключается в этической оценке общенаучных и конкретно-научных построений и создании тех идеалов и ценностных норм, которым должен соответствовать образ человека в научной картине мира.

При игнорировании мировоззренческой функции философской методологии в конкретных науках начинают складываться свои образы «плохого» или «хорошего» человека, принимаемые за естественные свойства его природы. Так, американский психолог Э. Стауб, например, предваряет исследование личности обсуждением допущений, является ли человек по своей природе изначально «хорошим» или «плохим». Он указывает на разноголосицу мнений по этому вопросы.

Например, Сократ считал, что человек потенциально совершенен и через самопознание может прийти к скрытому в его природе доброму началу. Некоторые философы прошлого полагали, что человек изначально альтруистичен, то есть он сразу рождается «хорошим». Современные представители гуманистической психологии А. Маслоу и К. Роджерс допускают, что человек по природе «добр», а психотерапия должна помочь более полному раскрытию доброго начала, спрятанного в недрах человека, стремления к любви и творчеству, принятию других людей.

Психологи других направлений, например основатель психоанализа З.Фрейд, придерживались допущения, что человек изначально агрессивен и эгоистичен, а общество обуздывает его эгоистические порывы. Иными словами, человек от природы «плох». Между тем принять ту или иную точку зрения, по мнению Э.Стауба, не позволяет равное количество фактов, свидетельствующих как о

проявлениях агрессии, так и о доброжелательности в самом раннем детском возрасте.

Иной подход к «плохой» или «хорошей» природе человека принадлежит Э. Стаубу, стоящему на позициях социально-бихевиористской концепции обмена социолога и социального психолога Дж. Хоманса. В соответствии с этой концепцией человек в социальной группе блюдет свой интерес: если за его дела ему платят добром, в обмен за это он «добр»; если же он не имеет никакой ощутимой прибыли, то он скорее будет в подобной ситуации «плох», чем «хорош». Иными словами, человек по своей природе обладает различными потенциалами, которые под влиянием среды выливаются в эгоистическое или альтруистическое поведение.

Критика нормативно-оценочного определения личности. Подобные рассуждения служат примером *подмены в психологии изучения личности сугубо нормативно-оценочными понятиями, исходящими из определенного идеала.* Своим естественным истоком нормативно-оценочное определение личности имеет употребление термина «личность» в повседневной жизни, где назвать того или иного человека личностью, по сути, часто означает оценить его как нечто исключительное, выдающееся. И в этом есть своя правда и свой предмет исследования для таких отраслей философии, как, например, этика. Но *когда нормативно-оценочная характеристика личности проникает из обыденного сознания в психологическое исследование механизмов развития и функционирования личности, она приводит к искажениям представлений о человеке.* Например, полученные в психофизиологии индивидуальных различий данные о том, что человек может обладать сильным или слабым типом нервной системы, интерпретируются порой как положительная или отрицательная характеристика данного человека; наличие у человека тех или иных защитных

психологических механизмов, срабатывающих в травмирующей ситуации, расценивается как проявления «слабой» личности; феномены конформного, подчиняющегося мнениям социальной группы, или но конформного поведения личности в группе, иногда сами по себе оцениваются как «хорошие» или «плохие» качества личности.

Если исследователь не отдает себе отчета в том, на каком уровне методологии науки он работает, путает общефилософские положения о человеке с конкретными характеристиками человека, то он рискует начать измерять патриотизм и убежденность личности в тех же единицах, что вес и рост индивида. *Во всех этих случаях смешиваются идеальные нормативы, моральные эталоны, которым должна следовать личность в обществе, и психологические механизмы, обеспечивающие усвоение и функционирование этих эталонов в реальном поведении личности.* В результате подобного наделения «оценочными» характеристиками механизмов развития и функционирования личности в обществе заслоняется их конкретное значение, происходит приписывание «хороших» или «плохих» качеств самой естественной природе человека.

Мировоззренческая ценностно-нормативная функция философской методологии обладает чрезвычайной важностью, так как создание того или иного образа человека в культуре – это действенный инструмент формирования личности человека. *Образ человека, которым осознанно или неосознанно пользуется исследователь, влияет на всю его практику работы с человеком и в ряде случаев на реальную подстройку личности под этот образ.* В тех случаях, когда конкретная наука — биология, психология, социология, экономика — создает этот образ на своем уровне, представители данных наук всегда должны осознавать, что «образ человека», как джин, выпущенный из бутылки, может перестать слушаться хозяина, подняться на уровень мировоззрения и

официальной идеологии, стать нормативным каноном, а затем начать вести свою работу, творя людей по своему подобию.

Социобиологи обнаруживают новые яркие факты поведения животных, в том числе и человека, в биологических сообществах. Однако интерпретация этих фактов приводит социобиологов опять-таки к приписыванию агрессии, альтруизма самой натуре человека, «биологизмами» общественно-исторических закономерностей, а впоследствии к возникновению социального биологизма как мировоззрения.

Литература

1.Маклаков А.Г. Общая психология. - М.: Питер. 2003.

2.Немов Р.С. Практическая психология познание себя: Влияние на людей:Пособие для уч-ся. -М:Гуманит. Изд.Центр ВЛАДОС, 2003. -320 с.

3. Болотова А.К, Макарова И.В. Прикладная Психология: Учебник для вузов.- М.Аспект Пресс, 2002 – 383 с.

4. Гамезо А. «Атлас по психологии» Москва, Питер, 2001й

THE LEXICAL EXPRESSION OF MONETARY AND DEBT RELATIONS IN DĪWĀN LUGHĀT AL-TURK

Allabergenov Nurbek Mo‘min o‘g‘li
Department of Social Sciences and Humanities, Oriental University Acting Associate Professor, Doctor of Philosophy (PhD) in Historical Sciences Tashkent, Uzbekistan
E-mail: nurbek_allabergenov@mail.ru

Abstract

This thesis examines terms related to monetary circulation, debt obligations, property, and product measurement found in Mahmud al-Kashgari’s work Dīwān Lughāt al-Turk from a historical and source-studies perspective. The lexical meanings and contexts of use of terms such as yarmoq, qamdu, baqir, alim, tavar, and quloch are analyzed comparatively. The historical significance of information concerning coin sorting, the social interpretation of indebtedness, the use of cloth as a means of payment, and craft processes is highlighted. The study substantiates that lexical evidence sheds light on the everyday expression of economic relations, while emphasizing the need to compare such evidence with numismatic and archaeological materials to determine the monetary system and the scale of trade.

Keywords

Mahmud al-Kashgari, Dīwān Lughāt al-Turk, economic relations, yarmoq, qamdu, baqir, alim, debt, monetary circulation, cloth measurement, numismatics.

DEVONU LUG‘OTIT TURKDA PUL VA QARZ MUNOSABATLARINING LUG‘AVIY IFODASI

Allabergenov Nurbek Mo‘min o‘g‘li
Oriental universiteti Ijtimoiy-gumanitar fanlar kafedrasi
v.b. dotsenti, tarix fanlari bo‘yicha falsafa doktori (PhD)

Toshkent, O‘zbekiston
E-mail: nurbek_allabergenov@mail.ru

Annotatsiya. Mazkur tezisda Mahmud Koshg‘ariyning “Devonu lug‘otit turk” asarida uchraydigan pul muomalasi, qarz majburiyatlari, mol-mulk va mahsulot o‘lchoviga oid atamalar tarixiy-manbashunoslik nuqtayi nazaridan o‘rganiladi. Yarmoq, qamdu, baqir, alim, tavar va quloch kabi birliklarning lug‘aviy mazmuni hamda qo‘llanish konteksti qiyosiy tahlil qilinadi. Tanga saralash, qarzdorlikning ijtimoiy talqini, matoning to‘lov vositasi sifatida ishlatilishi va hunarmandchilik jarayonlariga doir ma’lumotlarning tarixiy ahamiyati ko‘rsatiladi. Tadqiqot lug‘aviy dalillar iqtisodiy munosabatlarning kundalik ifodasini yoritishini, biroq pul tizimi va savdo ko‘lamini aniqlash uchun ularni numizmatik hamda arxeologik materiallar bilan qiyoslash zarurligini asoslaydi.

Kalit so‘zlar: Mahmud Koshg‘ariy, Devonu lug‘otit turk, iqtisodiy munosabatlar, yarmoq, qamdu, baqir, alim, qarz, pul muomalasi, mato o‘lchovi, numizmatika.

Kirish

XI asr turkiy jamiyatlarining iqtisodiy hayotini o‘rganishda tangalar va yozma manbalar turlicha savollarga javob beradi. Tanga hukmdor, zarbxona yoki pulning moddiy xususiyatlari haqida ma’lumot bersa, lug‘at pul bilan bog‘liq kundalik harakatlarning qanday ifodalanganini ko‘rsatadi. Mahmud Koshg‘ariyning “Devonu lug‘otit turk” asari ayni shu jihatdan e’tiborlidir: unda boylik va qarz tushunchalari alohida so‘z sifatida ham, insonlar o‘rtasidagi munosabatni ifodalovchi misollar tarkibida ham uchraydi. Bu dalillarni birgalikda o‘qish pul muomalasining ijtimoiy mazmunini anglashga yordam beradi.

Mazkur tezisning maqsadi asardagi ayrim iqtisodiy atamalarni izohlash orqali ularning tarixiy axborot berish imkoniyatini aniqlashdir. Tadqiqot “Devon”ning A. Rustamov tarjimasi va I. Kormushin tahriri ostidagi 2010-yilgi birinchi jildiga tayangan.

Havolalarda shu nashrning bosma sahifalari ko‘rsatildi. Atamalar o‘zbek lotin yozuviga yaqin shaklda berildi. So‘zning lug‘aviy ma’nosi, misoldagi vazifasi va undan chiqariladigan tarixiy xulosa bir-biridan ajratildi. Bunday yondashuv oddiy lug‘at misolini butun mintaqa iqtisodiyotiga oid umumiy hukmga aylantirishning oldini oladi.

Pul va mol-mulkka oid dalillar

“Devon”da “bir üküm jarmaq” birikmasi bir uyum tanga mazmunida izohlanadi [1, B. 109]. Bu misolda yarmoq muayyan miqdorda jamlanishi mumkin bo‘lgan pul birliklarini anglatadi. Biroq birikma tangalarning qaysi metalldan zarb qilingani yoki qaysi hukmdorga tegishli ekanini bildirmaydi. Shuning uchun yarmoqni mazkur o‘rinda muayyan dirham turi bilan aynanlashtirish to‘g‘ri bo‘lmaydi. Manba pulning mavjudligini va u bilan bajariladigan amalning tilga singganini tasdiqlaydi; uning aniq numizmatik tavsifi esa boshqa dalillarni talab etadi.

Yanada muhim misol tangalarni saralashga taalluqlidir. “Ol jarmaqig arig‘ladi” mazmunidagi jumla ruscha nashrda yaxshi tangalarni tanlab olish tarzida berilgan. Xuddi shu fe’l boshqa buyumlar ichidan sarasini ajratish uchun ham qo‘llanishi qayd etiladi [1, B. 263]. Demak, pul bilan bog‘liq amaliyot faqat sanash yoki jamlashdan iborat bo‘lmagan: tanlash tushunchasi ham mavjud bo‘lgan. Bu holat odamlar tangalarni bir-biridan farqlaganini taxmin qilishga asos beradi. Ammo farqlashning mezoni vazn, metall tarkibi, saqlanish holati yoki boshqa belgi bo‘lganini ushbu jumlaning o‘zi ochib bermaydi.

Tarixchi uchun aynan shu chegara muhimdir. Tanga saralash haqidagi iboradan darhol pul islohoti, soxta tanga muammosi yoki muomaladagi inqiroz to‘g‘risida xulosa chiqarib bo‘lmaydi. Shunga qaramay, u numizmatik tadqiqotga aniq savol beradi: muayyan davr xazinasidagi tangalar vazni va sifati bo‘yicha tanlanganmi? Agar topilma tarkibida ma’lum guruhning ustunligi aniqlansa, lug‘aviy ma’lumot shu kuzatuvni

izohlashga yordam berishi mumkin. Bunda matn arxeologik dalilning o‘rnini bosmaydi, balki tekshiriladigan masalani belgilaydi.

Asarning o‘sha sahifasida tavar so‘zi mol-mulkning ko‘pligi haqidagi misolda uchraydi [1, B. 263]. Shu sabab uni har bir o‘rinda bugungi “tovar”, ya’ni sotish uchun ishlab chiqarilgan mahsulot ma’nosida tushunish ehtiyotkorlikni talab qiladi. Mazkur kontekstda asosiy ma’no mulkka egalik bilan bog‘liq. Lug‘atdagi boylik tushunchasi bilan bozor uchun tayyorlangan mahsulot tushunchasini farqlash xo‘jalik tarixini talqin qilishda zarur. Aks holda o‘xshash talaffuzga ega so‘zlar o‘rtasidagi tarixiy ma’no farqi yo‘qolib ketadi.

Qarz munosabatlarining ijtimoiy mazmuni

Alim atamasi birovdan olinishi lozim bo‘lgan qarzni anglatadi. Uni izohlashda qarz beruvchi arslonga, qarzdor esa sichqonga o‘xshatilgan maqol keltiriladi [1, B. 109]. Maqoldagi obrazlar tomonlarning mavqei teng bo‘lmaganini ifodalaydi: qarzini talab qiluvchi o‘zini kuchli tutadi, qarzdor esa talabdan cho‘chiydi. Bu yerda iqtisodiy majburiyat hissiy va ijtimoiy tajriba orqali tushuntirilgan. Shuning uchun mazkur misol qarzning faqat hisob-kitob emas, odamlar o‘rtasidagi munosabatga ta’sir qiluvchi omil ekanini ham ko‘rsatadi.

Biroq maqolni huquqiy hujjat sifatida talqin etish mumkin emas. Undan qarzning foizi, muddati, garov shakli yoki undirish tartibi haqida ma’lumot olishning imkoni yo‘q. Qolaversa, obrazli ifoda barcha qarzdorlarning real holatini bir xil tasvirlamaydi. Uning daliliy qiymati jamiyatda qarz beruvchi va qarzdor o‘rtasidagi taranglik tushunarli holat bo‘lganini ko‘rsatishidadir. Shunday o‘qilganda folklor namunasi iqtisodiy tarixning insoniy tomonini yoritadi, lekin mavjud bo‘lmagan huquqiy tafsilotlar bilan to‘ldirilmaydi.

Alim bilan pulga oid misollarni yonma-yon qo‘yish ham ehtiyotkorlikni talab etadi. Qarz tushunchasining mavjudligi barcha majburiyatlar pulda hisoblanganini

anglatmaydi. Manbada aynan qaysi narsa qarzga berilgani ko‘rsatilmagan joyda uni pul qarzi deb belgilash uchun asos yetarli emas. Shu jihatdan “Devon” iqtisodiy munosabatlarning tilini tiklashga xizmat qiladi, biroq xo‘jalikning pulga bog‘liqlik darajasini o‘lchash imkonini bermaydi. Bu farq manbaga tayangan xulosa bilan tadqiqotchining taxminini aniq ajratishga yordam beradi.

Mato o‘lchovi va hududiy pul tushunchasi

Quloch atamasining izohida bir quloch barchin, ya’ni ipak mato misoli berilgan [1, B. 300]. Ushbu misol mahsulotning faqat nomi emas, o‘lchanadigan miqdori ham kundalik nutqda ifodalanganini ko‘rsatadi. O‘lchash matoni bo‘lish, foydalanishga tayyorlash va ayirboshlash uchun zarur amaliyotdir. Lekin misolda oldi-sotdi bevosita aytilmagan. Shu bois undan mato bozori hajmi yoki narxini aniqlashga urinish asossiz bo‘ladi. Qulochning zamonaviy metr hisobidagi qat’iy qiymatini ham qo‘shimcha metrologik dalilsiz belgilab bo‘lmaydi.

Lug‘atning boshqa o‘rnida baqir Chin aholisi muomalasidagi tangalar sifatida izohlanadi [1, B. 301]. Bu qayd pul atamalari ayrim hududlarga xos tarzda tushuntirilganini ko‘rsatadi. Biroq u Chin tangalari “Devon”da tilga olingan barcha turkiy o‘lkalarda ishlatilganining isboti emas. Atamaning muayyan mamlakat bilan bog‘lanishi, avvalo, muallifning farqlovchi izohidir. Bunday ma’lumotni topilmalarning geografiyasi bilan qiyoslash foydali, lekin lug‘atdagi nomning o‘zi savdo yo‘nalishini yoki tanga kirib kelgan sanani belgilamaydi.

Manbashunoslik nuqtayi nazaridan yana bir masala nashrlar orasidagi farqlardir. Ramiz Askar bir lug‘aviy birlik turli tarjimalarda bir yoki bir necha mustaqil modda shaklida berilishi mumkinligini ko‘rsatadi [2, B. 72–73]. Demak, iqtisodiy so‘zlarning miqdorini sanashdan oldin hisoblash birligini aniqlash lozim. Bosh so‘zlar soni, misollardagi qo‘llanishlar soni va ma’nolar soni bir xil ko‘rsatkich emas. Bir tushunchaning ko‘p uchrashi ham uning iqtisodiyotdagi ulushi katta bo‘lganini

avtomatik tarzda anglatmaydi; takror lug‘atning grammatik tuzilishi bilan bog‘liq bo‘lishi mumkin.

Pul vazifasini bajargan mato va hunarmandchilik

Pulning moddiy shakli masalasida qamdu haqidagi qayd alohida ahamiyatga ega. Koshg‘ariy uni uyg‘ur xonining muhri bosilgan, uzunligi to‘rt arshin, eni bir qarich mato bo‘lagi deb ta’riflaydi. Manbaga ko‘ra, u pul o‘rnida muomalada bo‘lgan; eskirganda yamalgan, har yetti yilda yuvilib, qayta muhrlangan [1, B. 344]. Sümeyra Alan ham qamdu atamasini mato nomlari doirasida tahlil qilib, uning to‘lov vositasi vazifasiga e’tibor qaratadi [4, B. 30–31]. Bu dalil ayirboshlash vositalari metall tangalar bilangina cheklanmaganini ko‘rsatadi. Mato o‘lchamining belgilanishi va muhrning yangilanishi uning oddiy iste’mol buyumidan farqlanganini anglatadi.

Qamdu misolida buyumning qiymati bilan uni muomalada qabul qilish tartibi tutashadi. Xon muhri matoning tanib olinadigan belgisini yaratgan, belgilangan o‘lcham esa uni muayyan birlik sifatida ajratishga xizmat qilgan, deb talqin etish mumkin. Shu bilan birga, mazkur xabarni butun Qoraxoniylar davlatida yagona mato pul tizimi mavjud bo‘lganiga dalil qilish to‘g‘ri emas: matn bu amaliyotni uyg‘ur xoni bilan bog‘laydi. Qamdu va yarmoqni birgalikda o‘rganishning foydasi shundaki, ular almashinuvning turli moddiy vositalarini ko‘rsatadi. Bu xilma-xillikni oddiy “natural xo‘jalikdan pulga o‘tish” sxemasi to‘liq tushuntirib bera olmaydi.

Yermuhamet Maralbek va Muhammet Ko‘chak yarmoq, baqir va kumushga oid birliklarni qiymatni ifodalash bilan bog‘liq guruhda ko‘rib chiqadilar [3, B. 190–192]. Ularning tahlili atamaning moddiy buyum, pul va miqdor ma’nolarini farqlash zarurligini ko‘rsatadi. Masalan, kumushning tilga olinishi har bir vaziyatda aynan zarb qilingan tangani anglatishi shart emas; kontekst metallning o‘ziga yoki undan tayyorlangan buyumga ham tegishli bo‘lishi mumkin. Demak, iqtisodiy atamalarni

tasniflashda nom, material va vazifa birgalikda tekshirilsa, lug‘aviy dalildan olinadigan tarixiy axborot aniqroq bo‘ladi.

Iqtisodiy hayotning ishlab chiqarish tomoni ham lug‘atda aks etgan. Enes Kavalchalan to‘quvchilikka oid so‘zlar asosida paxtani urug‘idan tozalash, ip tayyorlash hamda arish va arqoqni farqlash kabi jarayonlarni yoritadi [5, B. 121–123]. Bu ma’lumotlar tayyor mato ortida bir necha mehnat bosqichi turganini ko‘rsatadi. Shu jihatdan matoning o‘lchanishi yoki to‘lovda ishlatilishini ishlab chiqarish tajribasidan ajratib bo‘lmaydi. Hunarmandchilik lug‘ati mahsulot qanday tayyorlanganini, pul va o‘lchovga oid birliklar esa uning qanday baholangan yoki muomalaga kiritilganini tushunishga xizmat qiladi.

Xulosa

“Devonu lug‘otit turk”dagi ko‘rib chiqilgan dalillar iqtisodiy hayotning uch jihatini yoritadi: pul va matoning muomala vositasi sifatidagi vazifasi, qarz majburiyatining ijtimoiy idrok etilishi hamda mahsulotni tayyorlash va uning miqdorini ifodalash. Ularni umumlashtirishda lug‘atning vazifasi hisobga olinishi kerak. Asar narxlar ro‘yxati yoki xo‘jalik hisoboti emas; unda kundalik tajriba til misollari orqali saqlangan. Shu sabab eng ishonchli natija atamani alohida ajratishdan emas, uni izohi va qo‘llanish konteksti bilan birga o‘qishdan kelib chiqadi.

Pul muomalasi tarixini o‘rganishda “Devon”ning qiymati tangalardan bevosita bilinmaydigan harakat va munosabatlarni ochishidadir. Tanga saralash haqidagi misol pul sifatiga munosabatni tekshirishga, qarz haqidagi maqol majburiyatning ijtimoiy ta’sirini o‘rganishga, quloch misoli esa o‘lchov amaliyotini qiyoslashga yo‘l ochadi. Bu ma’lumotlar aniq sanalangan arxeologik va numizmatik majmualar bilan tekshirilsa, lug‘aviy dalil tarixiy rekonstruksiyaning mustaqil, ammo chegaralari belgilangan tarkibiy qismiga aylanadi.

Foydalanilgan manbalar va adabiyotlar

Birlamchi manba

1. Махмуд ал-Кашгари. Диван лугат ат-турк (Свод тюркских слов). Т. 1 / Пер. с араб. А. Р. Рустамова; под ред. И. В. Кормушина. – Москва: Восточная литература, 2010. – 461 с.

Tadqiqotlar

2. Əskər R. Mahmud Kaşğari və onun «Divanü lüğat-it-türk» əsəri. – Bakı: MBM, 2008. – 432 s.

3. Maralbek Y., Koçak M. Kaşgarlı Mahmut'un Divanu Lügati't-Türk adlı eserinde yer alan ölçü birimleri // Türk Kültürü ve Hacı Bektaş Veli Araştırma Dergisi. – 2018. – № 88. – S. 187–200. – URL: https://dergipark.org.tr/tr/pub/tkhcbva/article/1157307.

4. Alan S. Dīvānu Lugāti't-Türk'te yer alan kumaş terimleri ve kelime kökenleri üzerine bir değerlendirme // RumeliDE Dil ve Edebiyat Araştırmaları Dergisi. – 2020. – № 20. – S. 23–42. – DOI: 10.29000/rumelide.791077.

5. Kavalçalan E. Dîvânu Lugâti't-Türk'te mimari ve el sanatları // Hacettepe Üniversitesi Türkiyat Araştırmaları Dergisi. – 2022. – № 37. – S. 111–141. – URL: https://dergipark.org.tr/tr/download/article-file/2472546.

Global Trends in Overtourism and Their Impact on the Sustainable Development of Tourist Destinations

Isrofilov Firdavs Ibrohim o'g'li

Independent Researcher Samarkand State Technical University

Abstract

Overtourism has become one of the most significant challenges facing the global tourism industry, particularly in destinations experiencing rapid growth in visitor numbers and increasing pressure on local infrastructure, natural resources, cultural heritage, and resident communities. Although tourism contributes to economic growth, employment generation, investment attraction, and international cultural exchange, its uncontrolled expansion can create serious environmental, social, and economic problems. Overtourism occurs when the number of visitors and the intensity of tourism activities exceed the capacity of a destination to manage tourism sustainably without negatively affecting the quality of life of local residents and the experiences of tourists. This issue has become increasingly important in popular urban destinations, coastal areas, historical cities, and environmentally sensitive regions.

The purpose of this thesis is to examine global trends in overtourism and analyze their impact on the sustainable development of tourist destinations. Particular attention is given to the growing concentration of tourists in popular locations, the seasonal nature of tourism demand, the expansion of short-term accommodation, the increasing pressure on public infrastructure, and the commercialization of cultural and historical spaces. These trends demonstrate that the challenges associated with overtourism extend beyond the number of visitors and are closely connected with tourism management, spatial planning, infrastructure capacity, environmental protection, and the participation of local communities in decision-making.

Keywords

Overtourism, sustainable tourism, tourist destinations, global tourism trends, destination management, carrying capacity, visitor-flow management, tourism sustainability, local communities, environmental protection, cultural heritage, tourism development, responsible tourism, seasonal tourism, tourism planning.

Introduction

Tourism is widely recognized as an important driver of economic development, international cooperation, employment, cultural exchange, and regional investment. The development of transport networks, digital booking platforms, low-cost airlines, online accommodation services, and social media has made travel more accessible to a growing number of people. As a result, many destinations have experienced substantial increases in tourist arrivals, creating new opportunities for local businesses, hospitality services, transport providers, restaurants, and cultural institutions. Tourism can also encourage the restoration of historical monuments, support the preservation of cultural traditions, and provide financial resources for the development of local infrastructure. However, the rapid expansion of tourism has also revealed a number of structural challenges that can undermine the long-term development of destinations.

One of the most important challenges is overtourism, which refers to a situation in which tourism activity places excessive pressure on a destination and negatively affects the quality of life of local residents, the condition of the environment, cultural heritage, or the overall visitor experience. Overtourism does not necessarily occur only in destinations with the largest number of tourists. It may also develop in relatively small areas where visitor flows are concentrated within limited geographical spaces or short periods of time. Consequently, the relationship between the number of tourists, the available infrastructure, the sensitivity of local ecosystems, and the needs of resident communities is central to understanding this phenomenon. The relevance of this topic has increased because tourism development is increasingly expected to comply with the

principles of sustainability. Sustainable tourism aims to balance economic benefits with social responsibility and environmental protection while meeting the needs of visitors, tourism enterprises, local populations, and future generations. From this perspective, the success of a tourist destination should not be evaluated exclusively by the growth of visitor arrivals, hotel occupancy, or tourism revenue. It should also be assessed through indicators such as the efficient use of natural resources, the preservation of cultural heritage, residents' satisfaction, the quality of employment, the distribution of tourism income, and the destination's ability to maintain its attractiveness over time.

Global trends in overtourism reveal several interconnected developments. The first is the increasing concentration of tourists in well-known cities, coastal resorts, islands, and cultural heritage sites. Internationally recognized destinations often attract large numbers of visitors because of their historical importance, unique architecture, natural landscapes, entertainment opportunities, and global visibility. However, when most visitors concentrate in a limited number of streets, monuments, beaches, or public spaces, even destinations with relatively developed infrastructure may experience congestion and pressure on essential services. This situation demonstrates that destination-level planning must consider not only total tourist arrivals but also where, when, and how visitors move within a destination. The second important trend is the growing influence of digital technologies and social media on tourist behavior. Online platforms enable travelers to identify attractive destinations, compare prices, make reservations, and share their experiences with a global audience. These technologies provide substantial benefits to tourism businesses and travelers, but they can also accelerate the concentration of demand in locations that become popular through online visibility. A particular street, viewpoint, historical building, or natural attraction may rapidly become a major tourist hotspot without having sufficient infrastructure to accommodate increased visitor flows. Therefore, digital tourism marketing should be

accompanied by responsible destination promotion and effective systems for managing visitor demand.

Another significant trend is the expansion of short-term accommodation and platform-based tourism services. These services can increase accommodation options, generate additional income for property owners, and support tourism development in areas with limited hotel capacity. Nevertheless, in destinations experiencing strong demand, the conversion of residential properties into tourist accommodation may reduce the supply of long-term housing, contribute to rising rental prices, and change the social structure of local neighborhoods. The impact varies according to local housing markets, regulatory frameworks, and the scale of tourism activity. Consequently, destination authorities need to develop policies that balance the economic opportunities created by tourism with the housing needs and welfare of permanent residents.

Seasonality is another factor contributing to overtourism. In many destinations, the majority of visitors arrive during particular months, holidays, weekends, or major events. This creates temporary but intensive pressure on transport systems, water supplies, waste collection, public spaces, and emergency services. During peak periods, local infrastructure may become overloaded, while tourism businesses may face labor shortages and increased operating costs. Outside the peak season, the same destinations may experience underused facilities, reduced employment opportunities, and lower business revenues. Managing seasonal demand through the promotion of alternative travel periods, cultural events, nature-based tourism, and less crowded attractions can help improve the utilization of resources and reduce pressure on the most popular locations. The environmental consequences of overtourism are particularly important in coastal areas, mountain regions, islands, protected natural areas, and other ecologically sensitive destinations. High visitor numbers can increase water and energy consumption, generate excessive waste, contribute to air and noise pollution, and damage fragile

ecosystems. In some locations, tourism-related construction and transport infrastructure may also affect biodiversity and natural landscapes. Climate change further complicates this relationship because destinations must manage tourism-related environmental pressures while adapting to heatwaves, water scarcity, extreme weather events, and other climate-related risks. Sustainable destination management therefore requires the integration of tourism planning with environmental regulation, resource efficiency, climate adaptation, and the conservation of natural assets.

Overtourism also creates social and cultural challenges. Local residents may experience crowded public spaces, traffic congestion, higher prices, noise, and reduced access to services that were originally designed primarily for the local population. In historic destinations, the commercialization of cultural spaces may weaken the everyday functions of traditional neighborhoods and transform residential areas into tourist-oriented commercial zones. If local communities believe that tourism benefits are distributed unfairly while they bear the costs, public support for tourism development may decline. This can damage relations between residents and visitors and weaken the social foundations of the destination's long-term competitiveness. For this reason, local communities should be involved in tourism planning, policy development, and decisions concerning the use of public spaces and cultural resources. Despite these challenges, overtourism should not be interpreted as evidence that tourism itself is incompatible with sustainable development. Tourism can contribute positively to local economies, support small and medium-sized enterprises, create employment, stimulate investment, and finance the conservation of cultural and natural heritage. The central issue is whether tourism growth is properly managed and whether its benefits are distributed fairly. Effective management requires a shift from maximizing the number of visitors toward improving the quality, resilience, and sustainability of tourism development. This approach includes assessing the carrying capacity of destinations, monitoring visitor

flows, improving public transport, regulating tourism activities where necessary, encouraging responsible visitor behavior, and supporting economic diversification.

In conclusion, understanding global trends in overtourism is essential for developing tourism destinations that remain attractive, competitive, and resilient in the long term. The challenge is not simply to reduce visitor numbers everywhere, but to ensure that tourism activity remains within manageable limits, supports local well-being, and protects the natural and cultural resources on which tourism depends. By combining effective planning, visitor-flow management, digital monitoring, community participation, and environmental responsibility, destinations can reduce the negative effects of overtourism and strengthen the foundations of sustainable tourism development.

Conclusion

Overtourism represents a complex global challenge that affects the economic performance, social stability, environmental quality, and cultural identity of tourist destinations. The analysis demonstrates that this phenomenon is not determined solely by the absolute number of visitors. It also depends on the geographical concentration of tourism, seasonal fluctuations in demand, the capacity of local infrastructure, the vulnerability of natural and cultural resources, and the effectiveness of destination management. Therefore, overtourism should be understood as a problem of balancing tourism demand with the economic, social, environmental, and institutional capacities of a destination. Social sustainability is equally important. Local residents should not be treated merely as service providers within the tourism economy; they are essential stakeholders whose quality of life, cultural identity, and access to public services must be protected. Tourism planning should therefore incorporate public consultation, transparent decision-making, and mechanisms for addressing residents' concerns. Housing policies, the regulation of short-term accommodation where necessary, and the

fair distribution of tourism-related economic benefits can help maintain a positive relationship between tourism development and local communities. A destination that provides a satisfactory living environment for its residents is more likely to sustain a positive visitor experience over time.

In conclusion, addressing overtourism is essential for protecting the long-term competitiveness and sustainability of global tourism destinations. A balanced approach can help maintain tourism's economic contribution while reducing pressure on local communities and ecosystems. By prioritizing destination carrying capacity, responsible visitor behavior, inclusive governance, and the efficient use of natural and cultural resources, tourist destinations can create a more sustainable relationship between tourism growth and the well-being of present and future generations.

References

1. United Nations World Tourism Organization (UNWTO). (2018). *'Overtourism'? Understanding and Managing Urban Tourism Growth beyond Perceptions.* Madrid: UNWTO. https://www.untourism.int/global/publication/overtourism-understanding-and-managing-urban-tourism-growth-beyond-perceptions-executive

2. United Nations World Tourism Organization (UNWTO). (2019). *'Overtourism'? Understanding and Managing Urban Tourism Growth beyond Perceptions: Case Studies.* Madrid: UNWTO. https://doi.org/10.18111/9789284420629

3. United Nations World Tourism Organization (UNWTO). (2017). *Tourism and the Sustainable Development Goals – Journey to 2030.* Madrid: UNWTO.

4. United Nations Environment Programme (UNEP) and World Tourism Organization (UNWTO). (2005). *Making Tourism More Sustainable: A Guide for Policy Makers.* Paris and Madrid.

5. Butler, R. W. (1980). The Concept of a Tourist Area Cycle of Evolution: Implications for Management of Resources. *The Canadian Geographer, 24*(1), 5–12.

6. Gössling, S., Hall, C. M., & Scott, D. (2015). *Tourism and Water*. Bristol: Channel View Publications.

7. Hall, C. M., Scott, D., & Gössling, S. (2013). The Primacy of Climate Change for Sustainable International Tourism. *Sustainable Development, 21*(2), 112–121.

8. Goodwin, H. (2017). *The Challenge of Overtourism.* Responsible Tourism Partnership Working Paper 4.

9. President of the Republic of Uzbekistan. (2021, April 6). *Decree No. PF-6199 "On Measures to Further Improve the Public Administration System in the Fields of Tourism, Sports and Cultural Heritage."* National Database of Legislation of the Republic of Uzbekistan. https://lex.uz

10. President of the Republic of Uzbekistan. (2024, January 12). *Decree No. PF-9 "On Measures to Sharply Increase the Flow of Foreign Tourists to the Republic and Further Intensify Domestic Tourism."* National Database of Legislation of the Republic of Uzbekistan. https://lex.uz

METHODOLOGICAL ASPECTS OF ECONOMETRIC MODELING OF THE IMPACT OF WOMEN'S ENTREPRENEURSHIP ON IMPROVING THE EFFICIENCY OF HIGHER EDUCATION SERVICES

Kubayiva Sarvinoz Asrorbek qizi
Assistant Lecturer, Samarkand Institute of Economics and Service
sarvinozkubayiva@gmail.com

Abstract

This thesis examines the theoretical and methodological foundations of econometric modeling of the impact of women's entrepreneurship on improving the efficiency of educational and research services provided by higher education institutions. The study develops a system of dependent and explanatory indicators and substantiates the use of multiple linear and power-function (Cobb–Douglas-type) regression models, panel data analysis, and the instrumental variables (2SLS) methodology to address the problem of endogeneity.

Keywords

higher education services, educational efficiency, women's entrepreneurship, econometric modeling, multiple regression, panel data, endogeneity, human capital, innovative collaboration.

OLIY TA'LIM XIZMATLARI SAMARADORLIGINI OSHIRISHDA AYOLLAR TADBIRKORLIGI TA'SIRINI EKONOMETRIK MODELLASHTIRISHNING USLUBIY JIHATLARI

Kubayiva Sarvinoz Asrorbek qizi
Samarqand iqtisodiyot va servis instituti assistenti
sarvinozkubayiva@gmail.com

Annotatsiya. Ushbu tezisda oliy ta'lim muassasalari tomonidan ko'rsatilayotgan ta'lim va ilmiy-tadqiqot xizmatlari samaradorligini oshirishda ayollar tadbirkorligi

ta’sirini ekonometrik modellashtirishning nazariy va uslubiy asoslari tadqiq etilgan. Tadqiqotda natijaviy va omilli ko‘rsatkichlar tizimi shakllantirilib, ko‘p omilli chiziqli va darajali (Kobb-Duglas tipidagi) regressiya modellari, panel ma’lumotlar tahlili hamda endogenlik muammosini bartaraf etishning instrumental o‘zgaruvchilar (2SLS) uslubiyati asoslab berilgan.

Kalit so‘zlar: oliy ta’lim xizmatlari, ta’lim samaradorligi, ayollar tadbirkorligi, ekonometrik modellashtirish, ko‘p omilli regressiya, panel ma’lumotlar, endogenlik, inson kapitali, innovatsion hamkorlik.

Kirish va muammoning qo‘yilishi. Zamonaviy raqamli iqtisodiyot va bilimlar iqtisodiyoti sharoitida oliy ta’lim muassasalari (OTM) nafaqat malakali kadrlar tayyorlovchi maskan, balki hududiy va tarmoqlararo innovatsion ekotizimning markaziy bo‘g‘ini sifatida namoyon bo‘lmoqda. O‘zbekistonda xotin-qizlarning oliy ta’lim bilan qamrov darajasi hamda ularning tadbirkorlik faoliyatidagi ulushi izchil oshib borayotgan bir davrda, ayollar tadbirkorligi va oliy ta’lim xizmatlari samaradorligi o‘rtasidagi o‘zaro bog‘liqlikni miqdoriy baholash dolzarb ilmiy-amaliy ahamiyat kasb etadi. Ayollar rahbarligidagi biznes subyektlari oliy ta’lim xizmatlariga bo‘lgan talabni shakllantirish (korporativ treninglar, maqsadli kadrlar buyurtmasi, dual ta’lim), OTMlar qoshidagi startap va spin-off loyihalarni moliyalashtirish hamda xotin-qizlar o‘rtasida amaliy ko‘nikmalarni rivojlantirish orqali oliy ta’lim tizimining ijtimoiy-iqtisodiy qaytimini sezilarli darajada oshiradi.

Ekonometrik modellashtirishning uslubiy bosqichlari va ko‘rsatkichlar tizimi. Mazkur jarayonning murakkab va ko‘p qirrali tabiati oddiy statistik qiyoslash bilan cheklanmasdan, chuqur ekonometrik modellashtirish uslubiyatini qo‘llashni taqozo etadi. Ekonometrik modellashtirishning uslubiy jihatlarini ishlab chiqishda, avvalo, “oliy ta’lim xizmatlari samaradorligi” hamda “ayollar tadbirkorligi rivojlanish darajasi” tushunchalarini empirik o‘lchanadigan indikatorlarga transformatsiya qilish

(operatsionallashtirish) zarur. Uslubiy jihatdan ta’lim xizmatlari samaradorligini faqatgina moliyaviy tushumlar bilan emas, balki bitiruvchilarning mehnat bozoridagi bandligi, ilmiy-innovatsion ishlanmalarning tijoratlashtirilishi va ta’lim sifatining xalqaro standartlarga mosligi orqali kompleks ifodalash maqsadga muvofiqdir.

1-jadval. Ekonometrik model o‘zgaruvchilarining uslubiy tavsifi

Belgi	Ko‘rsatkich nomi va mazmuni	O‘lchov birligi va hisoblash uslubi
Y (HEE)	Oliy ta’lim xizmatlari samaradorligi integral indeksi (Higher Education Efficiency)	Bitiruvchilar bandlik darajasi (0,4), ilmiy shartnomalar ulushi (0,3) va ta’lim sifati indeksi (0,3) asosidagi integral ko‘rsatkich (0 dan 100 gacha)
X1 (WEA)	Ayollar tadbirkorligi faolligi darajasi (Women Entrepreneurship Activity)	Hududda faoliyat yuritayotgan jami kichik va o‘rta biznes subyektlari tarkibida ayollar rahbarligidagi korxonalar ulushi (%)
X2 (UWC)	OTM va ayollar biznesi o‘rtasidagi kooperatsiya (University-Women Business Collaboration)	Ayollar tadbirkorlik subyektlari bilan tuzilgan xo‘jalik shartnomalari, dual ta’lim va amaliyot dasturlari hajmi (mln so‘m)
X3 (WST)	Talaba va tadqiqotchi xotin-qizlar startaplari (Women Student & Academic Startups)	OTM inkubatsiya va akseleratsiya markazlarida xotin-qizlar tomonidan amalga oshirilgan innovatsion loyihalar soni va grantlar hajmi
X4 (FDI_E)	Ta’lim va ayollar tadbirkorligini qo‘llab-quvvatlashga yo‘naltirilgan kredit va investitsiyalar	Imtiyozli ta’lim kreditlari hamda ayollar tadbirkorligini rivojlantirish jamg‘armalari mablag‘lari hajmi (mlrd so‘m)
X5 (DIG)	Oliy ta’lim xizmatlarini raqamlashtirish va masofaviy ta’lim qamrovi	Raqamli ta’lim platformalari orqali o‘qitilayotgan va malaka oshirayotgan xotin-qizlar ulushi (%)

Model spetsifikatsiyasi va funksional shaklni tanlash. Oliy ta’lim xizmatlari samaradorligiga ayollar tadbirkorligi omillarining ta’sirini baholashda hududlar (viloyatlar yoki OTMlar) kesimidagi dinamik o‘zgarishlarni qamrab olish uchun panel ma’lumotlar (Panel Data) modellaridan foydalanish uslubiy jihatdan eng yuqori aniqlikni ta’minlaydi. Bunda bazaviy chiziqli-logarifmik va Kobb-Duglas tipidagi

multiplikativ ishlab chiqarish funksiyasiga asoslangan quyidagi ekonometrik spetsifikatsiya taklif etiladi:

$$ln(HEE_it) = \beta_0 + \beta_1\, ln(WEA_it) + \beta_2\, ln(UWC_it) + \beta_3\, ln(WST_it) + \beta_4\, ln(FDI_E_it) + \beta_5\, DIG_it + \mu_i + \lambda_t + \varepsilon_it, \quad (1)$$

bu yerda: i — hudud (yoki oliy ta’lim muassasasi) indeksi (i = 1, ..., N); t — vaqt davri (yil) indeksi (t = 1, ..., T); β_1, β_2, ..., β_5 — noma’lum regressiya parametrlari bo‘lib, ular mos omillarning oliy ta’lim samaradorligiga nisbatan elastiklik koeffitsiyentlarini ifodalaydi; μ_i — kuzatilmaydigan individual (hududiy yoki institutsional) xususiyatlar effekti; λ_t — vaqt effekti; ε_it — normal taqsimot qonuniga bo‘ysunuvchi tasodifiy xatolik hadidir.

Endogenlik muammosi va baholashning diagnostik mezonlari. Ekonometrik modellashtirishning muhim uslubiy jihati shundaki, oliy ta’lim samaradorligi (HEE) va ayollar tadbirkorligi faolligi (WEA) o‘rtasida ikki tomonlama sabab-oqibat bog‘liqligi (simultaneity) mavjud. Ya’ni, bir tomondan ayollar tadbirkorligining rivojlanishi ta’lim xizmatlari sifatini oshirsa, ikkinchi tomondan sifatli oliy ta’lim olgan xotin-qizlar tadbirkorlik subyektlarini ko‘proq tashkil etadi. Bu holat klassik eng kichik kvadratlar usuli (OLS) baholarining siljishiga (endogenlik muammosiga) olib keladi. Mazkur uslubiy muammoni bartaraf etish uchun ikki bosqichli eng kichik kvadratlar usuli (2SLS — Two-Stage Least Squares) yoki umumlashtirilgan momentlar usuli (System GMM) qo‘llaniladi. Instrumental o‘zgaruvchilar (Z_it) sifatida hududdagi ayollar tadbirkorligini qo‘llab-quvvatlash bo‘yicha imtiyozli kredit kvotalari hamda oilaviy tadbirkorlik dasturlari doirasidagi subsidiyalar hajmi tanlanadi.

Shuningdek, uslubiyat doirasida modelning adekvatligini tekshirish quyidagi qat’iy ketma-ketlikda amalga oshiriladi: 1) omillar o‘rtasida multikollinearlik mavjudligini VIF (Variance Inflation Factor < 10) mezoni orqali tekshirish; 2) panel ma’lumotlarda stasionarlikni Levin-Lin-Chu (LLC) va Im-Pesaran-Shin (IPS) birlik ildiz testlari

yordamida aniqlash; 3) tasodifiy effektlar (Random Effects) va o‘zgarmas effektlar (Fixed Effects) modellari o‘rtasida optimal tanlovni Xausman (Hausman) testi asosida bajarish; 4) qoldiqlarning geteroskedastikligi (Breusch-Pagan testi) va avtokorrelyatsiyasini (Wooldridge testi) tekshirish hamda ular aniqlangan taqdirda Driskoll-Kray (Driscoll-Kraay) standart xatoliklaridan foydalanish.

Xulosa. Xulosa qilib aytganda, oliy ta’lim xizmatlari samaradorligini oshirishda ayollar tadbirkorligi ta’sirini ekonometrik modellashtirishning taklif etilgan uslubiyati ta’lim va biznes integratsiyasini tizimli baholash imkonini beradi. Integral samaradorlik indeksini shakllantirish, logarifmik-chiziqli panel modellaridan foydalanish va endogenlikni 2SLS/GMM yordamida bartaraf etish ilmiy xulosalarning ishonchliligini ta’minlaydi hamda oliy ta’lim muassasalarining rivojlanish strategiyalarini ishlab chiqishda mustahkam uslubiy poydevor bo‘lib xizmat qiladi.

Foydalanilgan adabiyotlar ro‘yxati:

1. O‘zbekiston Respublikasi Prezidentining “O‘zbekiston Respublikasi oliy ta’lim tizimini 2030-yilgacha rivojlantirish konsepsiyasini tasdiqlash to‘g‘risida”gi PF-5847-son Farmoni.

2. Wooldridge J.M. Econometric Analysis of Cross Section and Panel Data. – Cambridge, MA: MIT Press, 2010. – 1064 p.

3. Baltagi B.H. Econometric Analysis of Panel Data. 6th Edition. – Springer, 2021. – 426 p.

4. Audretsch D.B., Belitski M., Guerrero M. The dynamic contribution of innovation ecosystems to entrepreneurship and higher education // Research Policy. – 2022. – Vol. 51(4).

5. G‘ulomov S.S., Ayupov R.X. Raqamli iqtisodiyot va ta’lim xizmatlari samaradorligini ekonometrik modellashtirish. – T.: “Iqtisodiyot”, 2023. – 248 b.

Artificial to the intellect based flexible education technologies current to grow methodology

Jumanov Abbas Nabijonovich
Jizzakh polytechnic Institute, Assistant
abbosjumanovo02@gmail.com phone 93 -304-34-61

ABSTRACT

This scientific article presents the final results of an experimental study focused on determining the effectiveness indicators for developing professional competencies—specifically regarding the implementation of educational technologies—among students in the field of energy. The study utilizes adaptive learning technologies based on artificial intelligence. The results, including average academic performance, were analyzed using Student's t-test and Pearson's chi-square (ch^2) test—methods rooted in mathematical statistics.

Keywords

artificial intelligence, adaptive learning technologies, energy sector, Student's test, Pearson's test, mathematical statistics, competencies, hypothesis, variational series.

Introduction. In the model of developing professional competencies of students in the energy sector, the diagnostic and assessment block is an integral part of the educational process, which includes mechanisms for determining, monitoring and evaluating the level of knowledge, skills and competencies acquired by students. This block education process efficiency determination and model practical the results assessment opportunity gives.

Modern pedagogical in approaches assessment process only knowledge check with not limited to, but student's professional to activity readiness to determine aimed at complex system as is considered. Energy in education assessment system many criterion, continuous and competency-based to the character has to be necessary.

Diagnostic-assessment block following main directions cover takes:

First, competencies determination criteria and indicators. Every one professional competence clear criteria through is evaluated. For example, " energy" systems analysis to do competence " following indicators through to be determined possible:

- system parameters right define to take;
- technician problems determination and analysis to do;
- optimal solutions to be able to offer.

These indicators students' activity objective assessment opportunity gives.

Secondly, current (formative) assessment system. This assessment type education process during done increased and student's development dynamics to determine service For example, practical in training assignments to perform quality, laboratory works results and independent affairs regular is evaluated. Formative assessment to students own mistakes determination and them correction opportunity gives.

Third, final (summative) assessment system. This assessment type education stage in the end done increased and student's general competence level to determine service For example, semester in the end exams, project works protection and complex tests through assessment done is increased.

Fourth, practical assignments and cases based on assessment. Energy in the direction of students professional competencies realistic situations in assessment based assignments important importance has. For example, " electricity" on the network to the surface arrived malfunction determination and eliminate " to be " case assignment student's practical readiness determination opportunity gives.

Fifth, based on the portfolio assessment. Portfolio student training activity during achieved the results reflection provider documents package is, then project works, laboratory results, scientific articles and other activity results This method is student's development dynamics complex assessment opportunity gives.

Sixth, digital assessment systems. Modern in education assessment process automation important importance profession will reach. Electronic platforms through tests transfer, results analysis to do and monitoring possible.

Diagnostic-assessment of the block important aspect – evaluation objectivity and transparency This is to ensure. clear criteria, indicators and assessment scales working exit through done is increased.

Below energy direction of student's professional competencies assessment for exemplary criteria schedule is quoted:

Competence type	Low degree	Medium degree	High degree
Analysis to do	Simple concept there is	Partially analysis does	Complex analysis does
Problem solution	Help with will do	Independent solves	Innovative solution offer does
Digital skills	Home at the level	Programs uses	Complex systems manage

This table assessment process systematic and clear organization to grow opportunity gives.

Practical example as the following to bring possible: to the student electricity on the network energy their losses reduce according to project assignment is given. Student:

- problem determines,
- calculations do,
- technician solution offer will,
- the results justify.

Evaluation this of the process every one stage according to done is increased.

Diagnostic-assessment block also reverse also have a feedback mechanism inside Students own results about regular information take they go and this their own on to work help gives. Diagnostic-assessment block energy direction of students professional

competencies develop model important component It is education process efficiency identification, students monitoring the development and final the results to evaluate service does. This block through education quality control will be done and him/her improvement for necessary information is taken.

Energy direction of student's professional competencies develop in the model consequential block model final stage It is education process efficiency assessment, achieved the results generalization and formed competencies level to determine service does. This block through model practical importance and pedagogical efficiency based on is given. Modern pedagogical in theories education result only knowledge with not, maybe person's professional to activity readiness level with is determined. Resultant block energy direction in students formed competencies complex to evaluate focused.

Resultant of the block main task – based on the model formed professional competencies level to determine, their practical in activity application opportunities assessment and education process efficiency scientific from justification consists of.

This block within following main results formation in sight is caught:

First, professional knowledge and of skills formation. Students' energy to the field related theoretical knowledge deep mastered and them in practice application skills has For example, electricity networks computing, energy balance determination and technician devices management according to knowledge is strengthened.

Secondly, the problems independent solution to grow competence. Students are real technicians in situations independent decision acceptance to do, problems analysis to do and optimal solutions working exit to the ability has for example, energy in the system to the surface arrived malfunction determination and him/her eliminate to grow according to independent solution offer to be

Third, innovation and creative thinking competence. Modern energy field innovations with closely related that was because of students' new technologies working

exit and current to reach ready to be necessary. For example, energy efficiency to increase aimed at new technician solutions working exit

Fourth, digital competencies formation. Students SCADA systems, modeling programs and other digital from tools use skills has they will be.

Fifth, environmental and technician security culture. Energy in the field security important importance has that was because of students ecological responsibility and technician security to the rules compliance to do competencies For example, energy working in the release waste reduce and security to the standards action to do

Conclusion as in other words, consequential block energy direction of students professional competencies develop model final stage is, which is the model efficiency assessment and his/her practical the results to determine service This will do. block through energy field for high competent, competitive and innovative thinking experts preparation opportunity is created.

ADA BI YACHTS

1. https://sciencetech.uz/index.php/ojs2/issue/view/15

2. https://mentaljournal-jspu.uz/index.php/mesmj/article/view/1559

3.US. Department of Education, Office of Educational Technology. Artificial Intelligence and the Future of Teaching and Learning: Insights and Recommendations. Washington, DC, 2023. – P.52.

4.Siemens G., Long P. Penetrating the fog: Analytics in learning and education // EDUCAUSE Review. 2011. Vol. 46, No. 5. – P.125-131.

5. Ifenthaler D., Widanapathirana C. Development and validation of a learning analytics framework: Two case studies using support vector machines // Technology, Knowledge and Learning. 2014. Vol. 19. – P.183.

6.Siemens G. Learning analytics: The emergence of a discipline // American Behavioral Scientist. 2013. Vol. 57, No. 10. – P.141-149

The Pedagogical and Psychological Essence of Forming and Developing the Deontological Competence of Future Teachers in the Higher Education System

Yoqubova Maftuna Shoyim qizi
Doctoral Researcher, Bukhara State University
myoqubova.@gmail.com

Abstract

This article examines the pedagogical and psychological essence of forming and developing the deontological competence of future teachers in the higher education system. It also analyzes the content of pedagogical deontology and the importance of ethical standards, professional responsibility, pedagogical duty, moral principles, and humanistic qualities in teachers' professional activities. The pedagogical conditions and psychological factors involved in developing deontological competence among future teachers, as well as its role in establishing effective pedagogical relationships throughout the teaching and educational process, are substantiated. In addition, recommendations are proposed for improving the professional and ethical preparation of future teachers in higher education institutions.

Keywords

deontology, deontological competence, future teacher, pedagogical deontology, professional ethics, pedagogical duty, professional responsibility, ethical standards, pedagogical culture, pedagogical and psychological factors, higher education, professional training.

Oliy ta'lim tizimida bo'lajak o'qituvchilarning deontologik kompetensiyasini shakllantirish va rivojlantirishning pedagogik-psixologik mohiyati

Yoqubova Maftuna Shoyim qizi
Buxoro davlat universiteti tayanch doktoranti

myoqubova.@gmail.com

Annotatsiya. Mazkur maqolada oliy ta’lim tizimida bo‘lajak o‘qituvchilarning deontologik kompetensiyasini shakllantirish va rivojlantirishning pedagogik-psixologik mohiyati yoritilgan. Shuningdek, pedagogik deontologiyaning mazmuni, o‘qituvchi kasbiy faoliyatida axloqiy me’yorlar, kasbiy mas’uliyat, pedagogik burch, odob-axloq tamoyillari va insonparvarlik fazilatlarining ahamiyati tahlil qilingan. Bo‘lajak o‘qituvchilarda deontologik kompetensiyani rivojlantirishning pedagogik shart-sharoitlari, psixologik omillari hamda ta’lim-tarbiya jarayonida samarali pedagogik munosabatlarni qaror toptirishdagi o‘rni asoslab berilgan. Shuningdek, oliy ta’lim muassasalarida bo‘lajak pedagoglarning kasbiy-axloqiy tayyorgarligini takomillashtirishga doir tavsiyalar ilgari surilgan.

Kalit so‘zlar: deontologiya, deontologik kompetensiya, bo‘lajak o‘qituvchi, pedagogik deontologiya, kasbiy etika, pedagogik burch, kasbiy mas’uliyat, axloqiy me’yorlar, pedagogik madaniyat, pedagogik-psixologik omillar, oliy ta’lim, kasbiy tayyorgarlik.

Bugungi kunda oliy ta’lim tizimining asosiy vazifalaridan biri jamiyatning ijtimoiy-iqtisodiy va ma’naviy taraqqiyotiga munosib hissa qo‘sha oladigan, yuqori darajadagi kasbiy kompetensiyaga ega, mustaqil fikrlaydigan hamda kasbiy faoliyatida axloqiy-me’yoriy talablarga rioya qiladigan mutaxassislarni tayyorlashdan iborat. Ayniqsa, pedagog kadrlarni tayyorlash jarayonida mazkur talab yanada muhim ahamiyat kasb etadi. Zero, o‘qituvchi nafaqat muayyan bilimlarni o‘rgatuvchi mutaxassis, balki ta’lim oluvchining shaxsiyati, dunyoqarashi, ijtimoiy faolligi va ma’naviy-axloqiy sifatlarining shakllanishiga bevosita ta’sir ko‘rsatuvchi subyekt hisoblanadi. Shu bois bo‘lajak o‘qituvchining kasbiy tayyorgarligini uning faqat predmetga oid bilim va metodik ko‘nikmalari bilan chegaralash yetarli emas. Pedagogning kasbiy faoliyatida namoyon bo‘ladigan burch, mas’uliyat, adolat, insonparvarlik, pedagogik odob, kasbiy

halollik va ta’lim oluvchi shaxsiga hurmat kabi sifatlarni shakllantirish ham oliy ta’limning muhim vazifalaridan biri sifatida namoyon bo‘ladi.

Mazkur jarayonni ilmiy jihatdan asoslashda “deontologiya” tushunchasining mazmun-mohiyatiga murojaat qilish zarur. Deontologiya atamasi yunoncha “deon” – burch, majburiyat va “logos” – ta’limot, fan ma’nolarini anglatib, muayyan kasbiy faoliyatda amal qilinishi lozim bo‘lgan axloqiy-me’yoriy talablarni ifodalaydi. Pedagogik faoliyat nuqtayi nazaridan esa deontologiya o‘qituvchining kasbiy burchi, mas’uliyati, pedagogik odobi, ta’lim oluvchilar bilan munosabatlarida amal qilishi lozim bo‘lgan axloqiy tamoyillar hamda kasbiy xulq-atvor me’yorlarini o‘z ichiga oladi. Demak, pedagogik deontologiya o‘qituvchi faoliyatining “qanday bilimga ega bo‘lishi kerak?” degan savolidan tashqari, “o‘z bilim va imkoniyatlarini qanday axloqiy-me’yoriy asosda qo‘llashi kerak?” degan masalani ham qamrab oladi.

O‘qituvchilik kasbining insonparvarlik xususiyati uning faoliyatida deontologik talablarning alohida o‘rin tutishini belgilaydi. Chunki pedagogning har bir qarori, munosabati, baholashi yoki muloqot shakli ta’lim oluvchining shaxsiy rivojlanishiga muayyan darajada ta’sir ko‘rsatadi. Shu nuqtayi nazardan, pedagogik faoliyatda kasbiy bilimning mavjudligi o‘z-o‘zidan uning samarali va axloqiy jihatdan maqbul amalga oshirilishini kafolatlamaydi. Bilimni qo‘llash jarayonida kasbiy burchni anglash, mas’uliyatni his qilish, pedagogik vaziyatni axloqiy jihatdan baholash va maqbul xatti-harakatni tanlay olish qobiliyati ham talab etiladi. Mazkur jihatlar bo‘lajak o‘qituvchining deontologik kompetensiyasini belgilovchi muhim omillar sifatida qaraladi.

“Kompetensiya” va “kompetentlik” kategoriyalarining zamonaviy pedagogik tadqiqotlardagi talqini deontologik kompetensiyaning mohiyatini aniqlashtirish uchun metodologik asos bo‘lib xizmat qiladi. Kompetensiya muayyan faoliyatni samarali amalga oshirish uchun zarur bo‘lgan bilim, ko‘nikma, malaka, tajriba, munosabat va

shaxsiy sifatlar majmuini ifodalasa, kompetentlik mazkur imkoniyatlarning real faoliyat jarayonida namoyon bo‘lish darajasini anglatadi. Shundan kelib chiqib, deontologik kompetensiyani pedagogik faoliyatning axloqiy-me’yoriy talablarini bilish bilangina bog‘lash bir tomonlama yondashuv hisoblanadi. Uning mazmuni ushbu bilimlarni kasbiy qadriyatlar bilan uyg‘unlashtirish, muayyan pedagogik vaziyatda axloqiy jihatdan asoslangan qaror qabul qilish va qabul qilingan qarorni tegishli xulq-atvor orqali namoyon etishni ham nazarda tutadi.

Bo‘lajak o‘qituvchining deontologik kompetensiyasi uning kasbiy faoliyatida amal qilishi lozim bo‘lgan me’yor va qoidalarni o‘zlashtirish, ularning mazmunini anglash, kasbiy burch va mas’uliyatni ichki ehtiyoj sifatida qabul qilish hamda mazkur qadriyatlarni amaliy pedagogik faoliyatda namoyon eta olish imkoniyatini ifodalovchi integrativ shaxsiy-kasbiy sifat sifatida qaralishi mumkin. Bunda deontologik kompetensiyaning shakllanishi tashqi me’yorlarning mexanik tarzda o‘zlashtirilishi emas, balki ularning talaba shaxsining ichki e’tiqodi va kasbiy pozitsiyasiga aylanish jarayonini anglatadi.

Deontologik kompetensiyaning integrativ xarakteri uning tarkibida bir-biri bilan uzviy bog‘liq bo‘lgan bir nechta komponentlarning mavjudligini taqozo etadi. Mazkur komponentlarni motivatsion-qadriyatli, kognitiv, emotsional-irodaviy, faoliyatli-xulqiy va refleksiv komponentlar sifatida tizimlashtirish mumkin.

Motivatsion-qadriyatli komponent bo‘lajak o‘qituvchining pedagogik kasbga munosabati, kasbiy burchni anglash darajasi, pedagogik qadriyatlarni qabul qilishi, insonparvarlik, adolat, halollik, mas’uliyat va hurmat kabi qadriyatlarga tayanishini ifodalaydi. Ushbu komponentning shakllanganligi talabaning pedagoglik faoliyatini faqat kasbiy vazifa sifatida emas, balki muayyan ijtimoiy va ma’naviy mas’uliyatni talab qiluvchi faoliyat sifatida qabul qilishi bilan belgilanadi.

Kognitiv komponent deontologik mazmundagi bilimlarning mavjudligini ifodalaydi. Bunga pedagogik etika, kasbiy burch va mas'uliyat, pedagogik muloqot madaniyati, ta'lim oluvchining huquq va manfaatlarini hurmat qilish, kasbiy xulq-atvor me'yorlari hamda pedagogik vaziyatlarda axloqiy qaror qabul qilishga oid bilimlar kiradi. Biroq mazkur bilimlarning mavjudligi deontologik kompetensiyaning to‘liq shakllanganligini anglatmaydi. Ular amaliy faoliyat va shaxsiy qadriyatlar bilan uyg‘unlashgandagina kompetensiyaviy xarakter kasb etadi.

Emotsional-irodaviy komponent pedagogning murakkab pedagogik vaziyatlarda o‘z hissiy holatini boshqarishi, sabr-toqatli bo‘lishi, ta'lim oluvchining holatini tushunishi, empatiya ko‘rsatishi va kasbiy me'yorlardan chetga chiqmasligini ta'minlaydi. Pedagogik faoliyatda turli nizoli yoki stressli vaziyatlarning yuzaga kelishi tabiiy holat bo‘lganligi sababli bo‘lajak o‘qituvchining emotsional barqarorligi va o‘zini boshqara olish qobiliyati deontologik xulq-atvorning muhim psixologik sharti hisoblanadi.

Faoliyatli-xulqiy komponent deontologik bilim va qadriyatlarning real pedagogik faoliyatda namoyon bo‘lishini ifodalaydi. Mazkur komponent doirasida bo‘lajak o‘qituvchining pedagogik vaziyatni tahlil qilishi, axloqiy jihatdan maqbul qaror qabul qilishi, ta'lim oluvchilar bilan hurmatga asoslangan munosabat o‘rnatishi, kasbiy majburiyatlarini mas'uliyat bilan bajarishi va pedagogik odob me'yorlariga amal qilishi muhim ahamiyat kasb etadi.

Refleksiv komponent esa bo‘lajak pedagogning o‘z kasbiy faoliyati va xatti-harakatlarini tahlil qila olishi, o‘zining kuchli va zaif jihatlarini anglash, yo‘l qo‘yilgan xatolardan tegishli xulosa chiqarish hamda kasbiy rivojlanish yo‘nalishlarini belgilash qobiliyatini ifodalaydi. Aynan refleksiya orqali tashqi deontologik talablar shaxsning ichki nazorati va o‘z-o‘zini tartibga solish mexanizmiga aylanadi.

Shunday qilib, deontologik kompetensiyaning pedagogik-psixologik mohiyatini aniqlashda uning ikki tomonlama tabiatiga e’tibor qaratish lozim. Bir tomondan, u pedagogik faoliyatga qo‘yiladigan obyektiv axloqiy-me’yoriy talablarni o‘zida mujassamlashtiradi. Ikkinchi tomondan esa ushbu talablarning bo‘lajak o‘qituvchi shaxsining individual-psixologik xususiyatlari, qadriyatlari, motivlari, e’tiqodi va xulq-atvorida subyektiv tarzda o‘zlashtirilishini nazarda tutadi. Demak, deontologik kompetensiya tashqi me’yorlar bilan ichki kasbiy pozitsiyaning integratsiyasi natijasida shakllanadi.

Oliy ta’lim muassasasida deontologik kompetensiyani rivojlantirish jarayoni ham mazkur ikki jihatning uyg‘unligini ta’minlashi lozim. Buning uchun ta’lim mazmuniga pedagogik etika va deontologik me’yorlarni singdirish bilan bir qatorda, talabalarda kasbiy vaziyatlarni tahlil qilish, axloqiy qaror qabul qilish, o‘z xatti-harakatlarini baholash va refleksiv faoliyat yuritish ko‘nikmalarini shakllantirish zarur. Ayniqsa, muammoli pedagogik vaziyatlar, keyslar, rolli o‘yinlar, munozaralar, pedagogik amaliyot va refleksiv topshiriqlardan foydalanish deontologik bilimlarning amaliy faoliyat bilan bog‘lanishiga imkon beradi.

THE AESTHETICS OF JAPANESE PUNK IN CONTEMPORARY CLOTHING DESIGN

Abu-Sharip K.E.
Master's student, group ММӨ-26-1нк
Scientific supervisor:
Dzhakipbekova M.Zh.,
Candidate of Pedagogical Sciences
M.Auezov South Kazakhstan University, Shymkent, Kazakhstan

Abstract

The article examines how the aesthetics of Japanese punk has been formed, transformed and absorbed into contemporary clothing design. Japanese punk is treated not as a simple copy of the British and American movements of the 1970s, but as a hybrid cultural phenomenon in which the visual vocabulary of Western punk (tearing, safety pins, studs, slogans, the do-it-yourself principle) was reinterpreted through local ideas of imperfection, asceticism, craftsmanship and the street as a creative laboratory. Using historical-cultural, comparative and semiotic methods, the study traces three lines of development: the "anti-fashion" of Rei Kawakubo and Yohji Yamamoto, the "street-to-runway" punk of Jun Takahashi (Undercover) and Takahiro Miyashita (Number (N)ine), and the youth subcultures of Harajuku and Kōenji. The analysis shows that in contemporary design punk functions less as a protest uniform and more as a system of design techniques and cultural codes – deconstruction, controlled destruction, sampling, layering and musical citation – which Japanese designers turned into a recognizable international language. The results may be used in courses on fashion history, design theory and cultural studies.

Keywords

Japanese punk, anti-fashion, deconstruction, subculture, Comme des Garçons, Undercover, Harajuku, street style, DIY aesthetics.

Introduction

Punk is usually described as one of the most influential youth subcultures of the second half of the twentieth century. Born in the mid-1970s between New York and London, it quickly went beyond music and became a visual system: ripped clothes, safety pins, chains, leather jackets, hand-written slogans and deliberately "ugly" hairstyles. In his classic study of subcultural style, D. Hebdige interpreted punk dress as a form of bricolage, in which everyday objects are torn out of their usual context and acquire a new, provocative meaning [1]. This idea remains central for understanding how punk entered the fashion industry: what began as a gesture of refusal gradually became a resource for designers.

Japan occupies a special position in this history. Punk arrived there almost simultaneously with its Western peak, but it met a very different cultural environment. The result was not a simple imitation of London streets. Japanese musicians, designers and young people reworked punk through their own aesthetic traditions and social circumstances, and by the 1980s–2000s Japanese designers had become some of the most important interpreters of punk aesthetics on the world stage. This is confirmed by the fact that the major exhibition "Punk: Chaos to Couture" at the Metropolitan Museum of Art (2013) placed the work of Rei Kawakubo (Comme des Garçons), Yohji Yamamoto, Junya Watanabe and Jun Takahashi (Undercover) alongside Vivienne Westwood and Malcolm McLaren [2; 3].

The relevance of the topic is determined by several factors. First, contemporary fashion is characterized by constant recycling of subcultural styles, and Japanese brands are among the main sources of this process. Second, in the 2020s there has been a noticeable renewal of interest in the Japanese punk heritage: Undercover marked its 35th

anniversary, Takahiro Miyashita relaunched his historic brand, and in 2026 a feature film about the first Tokyo punk scene was released [4; 5; 6]. Third, for design education, including in Kazakhstan, the Japanese case is a valuable example of how a borrowed global style can be adapted to national cultural codes without losing its expressive force.

The aim of the article is to identify the main features of the aesthetics of Japanese punk and to determine how they are realized in contemporary clothing design. To achieve this aim, the following objectives were set: to describe the historical formation of the Japanese punk scene; to analyze the role of Japanese "anti-fashion" in translating punk into high fashion; to examine the work of designers who directly connect fashion and punk music; and to characterize the role of street subcultures in the further circulation of this aesthetic.

Materials and methods

The research material includes academic works on subcultural theory and Japanese fashion [1; 7; 8; 9; 10; 11], exhibition catalogues and museum collection records [2; 12; 13; 14], as well as fashion journalism and designer interviews that document recent collections [4; 5; 15; 16]. Museum descriptions were used as primary sources about specific garments, since they provide reliable data on dates, materials and techniques.

The study relies on a combination of methods. The historical-cultural method made it possible to reconstruct the stages of the development of Japanese punk from the late 1970s to the present. The comparative method was used to correlate Japanese interpretations with British and American models. Semiotic analysis, following the tradition of Hebdige [1], was applied to interpret clothing details (holes, asymmetry, black colour, musical prints) as signs. Finally, elements of formal analysis of design were used to describe cut, construction and surface treatment.

Results and discussion

The formation of the Japanese punk scene

The Japanese punk scene took shape in 1978. A group of Tokyo bands, including Friction, Lizard and Mirrors, united under the name "Tokyo Rockers" and performed in small venues such as S-KEN Studio in Roppongi and the Loft live houses in Shinjuku and Shimokitazawa [17]. In March 1979 a live album "Tokyo ROCKERS" recorded at Shinjuku Loft was released by CBS Sony, which gave the movement wider visibility [6]. In the same year Kansai no wave bands came to Tokyo, and the band Anarchy, formed by high school students in Saitama, became one of the first widely known Japanese punk groups [17]. Later, more radical bands such as The Stalin provoked public debates about the moral danger of punk for youth [17].

From the very beginning, punk in Japan existed in two dimensions: as music and as a style of appearance. Researchers and observers note that the visual side, connected with the image of the Sex Pistols and the shop of McLaren and Westwood, had at least as strong an influence on Japanese youth as the music itself [18]. This "visual priority" is important for the subsequent history: it explains why the Japanese reception of punk was so quickly absorbed by the fashion system. At the same time, Japanese punk was eclectic: alongside punk proper, the Tokyo scene included avant-garde, new wave and even reggae and dub, which many musicians of that circle actively absorbed [6; 17]. This openness to mixing genres became a characteristic feature of Japanese punk design as well.

The persistence of this heritage is shown by its current revival. The film "Street Kingdom: Make Your Own Sound" (2026), directed by Tomorowo Taguchi, is based on the memoirs of photographer Yuichi Jibiki, who documented the Tokyo Rockers [6]. Its release was accompanied by themed clothing collaborations, which demonstrates that

the historical punk scene is now perceived as a cultural brand and a source of design motifs.

Anti-fashion: punk as a principle of construction

The most significant contribution of Japan to the "translation" of punk into high fashion was made by designers who did not consider themselves punks. In the early 1980s Rei Kawakubo and Yohji Yamamoto presented their collections in Paris and shocked the fashion establishment with black, asymmetrical, loose and seemingly unfinished clothes. The press called the Comme des Garçons debut "Hiroshima chic", and Kawakubo gained a reputation as a leader of anti-fashion [19]. Y. Kawamura analyzes this moment as a "Japanese revolution" in Paris fashion that changed the very criteria of what was considered beautiful and finished in clothing [8].

The key object of this period is the black hand-knitted sweater with randomly placed holes from the autumn–winter 1982–83 collection, which Kawakubo herself called "lace". The Victoria and Albert Museum describes this sweater as using the decorative potential of post-punk holes and notes that it was carefully hand-knitted, and that its design was quickly copied by mass-market producers [12]. The National Gallery of Victoria, which holds an item from the same "Holes" collection, emphasizes the intentionally distressed knitwear and the layered, asymmetrical silhouettes [13].

This example reveals the fundamental difference between Western punk and Japanese anti-fashion. For London punks, a hole in a T-shirt was the trace of a spontaneous act of destruction. For Kawakubo, the hole is planned, constructed and executed with the precision of craftsmanship. Destruction becomes a design technique. Researchers of anti-fashion stress precisely this paradox: the impression of the unfinished coexisted with thoroughly structured garments, and methods such as turning the garment inside out and blurring boundaries became systematic [20]. Scholars connect this approach with traditional Japanese ideas of beauty in imperfection and

asymmetry (*wabi-sabi*), with the practice of patching and repairing worn textiles (*boro*), and with attention to the space between body and fabric [9; 10]. Thus punk "destruction" found an unexpected point of contact with an old aesthetic of the imperfect.

In the context of contemporary design, this line has had a lasting effect. The deconstructivism of Martin Margiela and the Antwerp designers, the "dark" avant-garde of Rick Owens and the so-called "antagonistic fashion" of later generations are described by researchers as continuing the path opened by Yamamoto, Kawakubo and Issey Miyake [21]. Punk, filtered through Japanese anti-fashion, became not a set of symbols but a method: controlled destruction, asymmetry, monochrome, layering and the rejection of traditional ideals of the female silhouette.

Punk as citation: Undercover and Number (N)ine

If Kawakubo and Yamamoto turned punk into an abstract principle, the next generation of Japanese designers returned to its direct cultural sources: music, record covers, posters and the image of the band. The key figure here is Jun Takahashi. While studying at Bunka Fashion College in Tokyo in the late 1980s, he sang in the tribute band Tokyo Sex Pistols, and in 1990 he founded his brand Undercover [14; 15]. In 1993, together with Nigo, the future founder of A Bathing Ape, he opened the shop Nowhere in Harajuku, which became one of the centres of the Ura-Harajuku street fashion movement [14; 4].

Takahashi himself recalls that in his mid-teens he was struck by the collaboration between the Sex Pistols, Westwood and McLaren, and by the aggressive graphic design of the band's record covers [4]. The motto of the brand – "We make noise, not clothes" – directly links clothing to music [15]. The Fashion Institute of Technology Museum notes that Takahashi's Paris debut collection "Scab" consisted of garments that were violently deconstructed, torn and reassembled with haphazard red stitching, and that the designer described his own work as "cute but scary, beautiful but ugly" [14].

Importantly, it was Kawakubo who supported Undercover and persuaded Takahashi to show in Paris in the early 2000s [16]. This shows the direct continuity between the two generations: anti-fashion provided the institutional platform, while the younger designer brought back the explicit punk vocabulary.

The second important figure is Takahiro Miyashita, founder of Number (N)ine. His autumn–winter 2003 collection, dedicated to Kurt Cobain and known as the "Kurt era", reinterpreted grunge clothing – faded mohair cardigans and distressed denim – through precise tailoring [22]. Miyashita's method may be called musical sampling: images of Cobain, Johnny Cash, Patti Smith and Ian Curtis appear on his garments as quotations, and the collections themselves are built like albums. In 2025–2026 Miyashita relaunched the brand under the name "Number (N)ine by Takahiro Miyashita"; the first release was a series of T-shirts with portraits of Patti Smith and Ian Curtis, and the press directly linked the return with the revival of the punk and grunge spirit of the brand's original era [5].

Both designers show a distinctive feature of Japanese punk design: deep, almost archival knowledge of Western music culture combined with Japanese perfectionism in fabric and construction. In contrast to the raw DIY of the 1970s, here punk becomes an object of connoisseurship. The historian of Japanese menswear W. D. Marx describes this attitude as a characteristic Japanese model of borrowing, in which a foreign style is studied in detail, reproduced with greater accuracy than the original and then transformed [11]. The punk aesthetic, therefore, is preserved not through spontaneity but through careful citation.

4. Street subcultures and the circulation of punk aesthetics

The third channel through which punk enters contemporary design is the street. Since the 1990s Tokyo districts such as Harajuku, Shibuya and Kōenji have functioned as open-air laboratories of youth style. Y. Kawamura, basing her research on

ethnographic fieldwork, shows that Japanese youth subcultures blur the border between professionals and amateurs: young people act simultaneously as models, stylists, photographers and designers [7]. Among the Harajuku styles she describes are varieties of Lolita fashion, including "Punk Lolita" and "Gothic Lolita", where elements of punk (tartan, chains, safety pins, black leather) are combined with the image of a Victorian doll [7; 23].

Kawamura interprets this diversity as a response of young people to unstable social and economic conditions, when traditional values no longer correspond to their real experience [7]. In this sense, Japanese street punk preserves something of the original protest meaning of punk, but expresses it not through aggression but through extreme individualization of appearance – what Kawamura calls "silent rebellion" in Harajuku as opposed to the more outspoken style of Shibuya [7]. Photographic projects such as S. Aoki's FRUiTS magazine documented this layered, self-made style and spread it internationally [24].

The relationship between street and designer is two-way. Brands such as Undercover grew directly out of the Harajuku retail scene, while street styles, in turn, borrow and rework designer pieces. Kawamura describes this through the theory of "trickle-up" or "bubble-up" fashion, according to which new trends come not from above but from youth communities [7]. Punk aesthetics in Japan thus circulates in a cycle: from Western music to Tokyo streets, from the street to independent brands, from them to Paris runways and museums, and back to the street through secondhand shops and remakes.

5. The main features of Japanese punk aesthetics in contemporary design

Summarizing the material, we can identify several features that characterize the aesthetics of Japanese punk in contemporary clothing design.

First, controlled destruction. Holes, tears, raw edges and frayed seams are used not as traces of wear but as deliberate constructive and decorative elements executed with high craftsmanship [12; 13; 20].

Second, deconstruction and asymmetry. The garment is shown "from the inside", seams and linings are exposed, proportions are shifted; this line runs from Kawakubo and Yamamoto to the deconstructed collections of Undercover [8; 14].

Third, monochrome and the semantics of black. Black, which for Western punk was associated with leather and aggression, in Japanese design acquires additional meanings of asceticism, shadow and depth [9; 12].

Fourth, musical citation and sampling. Clothes become a medium for quoting record covers, lyrics and portraits of musicians; the collection is built like an album or a concert [4; 5; 22].

Fifth, hybridization. Punk is combined with gothic, Victorian, military, workwear and sports elements (for example, Takahashi's running line with Nike), and in street style – with "cute" (*kawaii*) aesthetics, which produces the characteristic Japanese contrast of the sweet and the frightening [14; 16; 7].

Sixth, the transformation of DIY into craftsmanship. The punk principle "do it yourself" is preserved as an attitude, but in Japanese design it is realized through hand work, traditional repair techniques and very high quality of execution [9; 10; 11].

These features show that the Japanese contribution consists not in inventing new punk symbols but in transforming punk into a design system that can be reproduced and developed. That is why punk elements in contemporary collections of global brands are often perceived as being "in the Japanese spirit", even when the designers themselves are not Japanese [2; 21].

At the same time, this transformation raises a critical question that has accompanied punk in fashion from the beginning: does the integration of punk into luxury fashion

mean the loss of its protest content? The curators of the Metropolitan Museum exhibition themselves noted the contradiction between the democracy of punk and the autocracy of fashion [3]. The Japanese case suggests a partial answer. Protest in Japanese design is shifted from the level of political statement to the level of form: rejection of conventional beauty, of the finished garment, of the predictable silhouette. This "formal resistance" has proved more durable than the original symbols of punk, which were quickly commercialized.

Japanese punk aesthetics in the fashion of the 2020s

In the fashion of the 2020s, the Japanese punk heritage is realized in at least three new contexts. The first is archive culture. Collections of Undercover, Number (N)ine and early Comme des Garçons from the 1980s–2000s have become objects of collecting and resale, and designers themselves increasingly refer to their own past. The anniversary collection of Undercover and the relaunch of Number (N)ine by Takahiro Miyashita, which deliberately opened with graphic T-shirts as the original brand did in the 1990s, show that punk aesthetics now functions as a form of cultural memory [4; 5]. Even contemporary pieces by Miyashita, such as the mohair cardigan of the autumn–winter 2025 season, were openly presented as a reminder of the "Kurt era" of 2003 [22]. Punk, which once declared "no future", has thus acquired its own canon and history.

The second context is sustainability. The punk principle of reworking old clothes, cutting, patching and re-sewing, together with the Japanese tradition of repairing worn textiles, is increasingly read today through the lens of responsible consumption. Secondhand shops and remake practices in districts such as Kōenji, which Y. Kawamura describes as a centre for lovers of used clothing [7], show how DIY becomes an ecological strategy: a garment is not thrown away but continues its life in a new form. In this sense, the "destruction" proposed by Kawakubo in 1982 can be reinterpreted as

an early form of thinking about the life cycle of clothing, in which imperfection and traces of time are valued rather than hidden.

The third context is the globalization of street style through digital media. If in the 1990s Harajuku styles became known abroad through printed photo magazines [24], today they spread instantly through social networks, where Japanese punk details – tartan, safety pins, layered black, musical prints – circulate detached from their original meaning. This creates a risk of reducing punk to a set of decorative signs, which Hebdige already described as the inevitable "incorporation" of subcultural style by the market [1]. At the same time, Japanese designers demonstrate a different strategy: they preserve the connection between form and cultural source through careful citation, documentation of musical references and high quality of execution. For contemporary design education, this is a valuable lesson: the borrowing of a subcultural style is productive only when it is accompanied by understanding of its history and meaning, and not merely by copying of external attributes.

These observations also have significance beyond Japan. Many national fashion schools, including those in Central Asia, face the task of combining global youth styles with local traditions of ornament, textile and craft. The Japanese experience shows that such a synthesis is possible when a traditional aesthetic category (for example, the value of the hand-made, of repair or of asymmetry) is used not as an exotic decoration but as a principle of construction. This approach allows designers to avoid both direct imitation of Western subcultures and a purely ethnographic use of national motifs.

Conclusion

The study shows that the aesthetics of Japanese punk is a hybrid cultural phenomenon formed at the intersection of Western subcultural style and Japanese traditions of craftsmanship and perception of the imperfect. Emerging in 1978 together

with the Tokyo Rockers, Japanese punk from the very beginning gave special weight to the visual side, which made it easily translatable into the language of fashion.

Three main lines of the influence of Japanese punk on contemporary clothing design have been identified: anti-fashion (Kawakubo, Yamamoto), which turned punk destruction into a constructive principle; the musical-citational line (Takahashi, Miyashita), which returned to punk its direct cultural sources while combining them with perfect execution; and the street line (Harajuku, Kōenji), where punk mixes with other styles and constantly feeds back into designer fashion. Together they formed a set of techniques – controlled destruction, deconstruction, monochrome, citation, hybridization and crafted DIY – that remain relevant in the 2020s, as shown by recent anniversary collections, brand relaunches and new cultural projects.

The practical significance of the study lies in the possibility of using its results in teaching the history of costume, design theory and cultural studies, as well as in the creative practice of young designers. The Japanese experience shows how a borrowed global style can be reinterpreted through national aesthetic categories. This perspective is also productive for Kazakhstani design, where the dialogue between global youth styles and national decorative and textile traditions is an important direction for future research.

References:

1. Hebdige D. Subculture: The Meaning of Style. London: Methuen, 1979. 195 p.

2. Bolton A. Punk: Chaos to Couture. New York: The Metropolitan Museum of Art; New Haven: Yale University Press, 2013. 240 p.

3. PUNK: Chaos to Couture. Exhibition overview, May 9 August 14, 2013 // The Metropolitan Museum of Art. URL: https://www.metmuseum.org/exhibitions/punk.

4. Jun Takahashi on the music that makes Undercover // 10 Magazine. 2025. URL: https://10magazine.com/jun-takahashi-on-the-music-that-makes-undercover-tm61/.

5. Number (N)ine by Takahiro Miyashita // Highsnobiety. – 2026. – URL: https://www.highsnobiety.com/p/number-nine-by-takahiro-miyashita-2026/.

6. Shinno K. The story of "Tokyo Rockers": the movement that changed the world in just one year // Openers. – 13.03.2026. – URL: https://openers.jp/en/design/design_features/q6SBFZqC.

7. Kawamura Y. Fashioning Japanese Subcultures. – London; New York: Berg, 2012. – 175 p.

8. Kawamura Y. The Japanese Revolution in Paris Fashion. – Oxford; New York: Berg, 2004. – 192 p.

9. English B. Japanese Fashion Designers: The Work and Influence of Issey Miyake, Yohji Yamamoto and Rei Kawakubo. – London; New York: Berg, 2011. – 176 p.

10. Kondo D. About Face: Performing Race in Fashion and Theater. – New York; London: Routledge, 1997. – 288 p.

11. Marx W. D. Ametora: How Japan Saved American Style. – New York: Basic Books, 2015. – 288 p.

12. Jumper, Comme des Garçons (Rei Kawakubo), 1982. Museum no. T.167-1985 // Victoria and Albert Museum. – URL: https://collections.vam.ac.uk/item/O73390.

13. Comme des Garçons, Rei Kawakubo. Jacket and gloves, Holes collection, autumn–winter 1982–83 // National Gallery of Victoria. URL: https://www.ngv.vic.gov.au/explore/collection/work/155251/.

14. Jun Takahashi // The Museum at FIT. URL: https://fashionmuseum.fitnyc.edu/people/6357/jun-takahashi/objects.

15. Jun Takahashi history // Highsnobiety. – URL: https://highsnobiety.com/p/jun-takahashi-history.

16. Bergl S. Undercover, Supreme's latest collaborator, is Japanese punk fashion at its best // Complex. – URL: https://www.complex.com/style/a/skylar-bergl/undercover-supreme-collaboration-explanation

17. The Sabukaru guide to Japanese punk music // Sabukaru Online. – URL: https://sabukaru.online/articles/the-sabukaru-guide-to-japanese-punk (accessed: 14.10.2026).

18. Punk rock in Japan // JapanVisitor. – URL: https://www.japanvisitor.com/japanese-culture/punk .

19. Comme des Garçons // Comme un camion. – URL: https://www.commeuncamion.com/guide/marques/comme-des-garcons/

20. Anti-fashion: Japanese designers and the shock of the old // ZMJ – Zone Moda Journal. – University of Bologna. – URL: https://zmj.unibo.it/article/download/11284/11472

21. Pompa C. Antagonistic Fashion. The Last Generations after the Japanese Post-atomic Wave. – Milano: Bruno Mondadori, 2016. ISBN 9788867741229.

22. Introduction of TAKAHIROMIYASHITATheSoloist. kurt.cardigan: a design reminiscent of the "Kurt era" from NUMBER (N)INE // Fascinate. 2025.

URL:https://fascinate-online.com/en/cont/takahiromiyashitathesoloist_kurt_cardigan_introduction_en.

23. Gagné I. Urban princesses: performance and "women's language" in Japan's Gothic/Lolita subculture // Journal of Linguistic Anthropology. – 2008. – Vol. 18, No. 1. P. 130–150.

24. Aoki S. Fruits. – London: Phaidon, 2001. 288 p.

PRIMARY PREVENTION OF CARDIOEMBOLIC STROKE IN ATRIAL FIBRILLATION AND THE ROLE OF ANTICOAGULANT THERAPY

Sultonmurodov Baxtiyorjon Davlatjon o‘g‘li

Third-Year Master’s Student in Neurology, Andijan State Medical Institute (ASMI)

Abstract

Atrial fibrillation is one of the major risk factors for cardioembolic stroke. In this arrhythmia, impaired effective atrial contraction leads to slower blood flow and an increased likelihood of thrombus formation. The aim of this thesis is to highlight the clinical significance of primary prevention of cardioembolic stroke and anticoagulant therapy in patients with atrial fibrillation. Preventive strategies place particular emphasis on the individual assessment of thromboembolic risk, consideration of patients’ comorbidities, and reduction of bleeding risk. According to current clinical guidelines, direct oral anticoagulants are preferred for most patients when indicated. However, the choice of medication depends on the condition of the heart valves, renal function, drug interactions, and other clinical factors.

Keywords

atrial fibrillation, cardioembolic stroke, primary prevention, anticoagulant therapy, thromboembolism, CHA_2DS_2-VA, bleeding risk.

BO‘LMACHALAR FIBRILLYATSIYASIDA KARDIOEMBOLIK INSULTNING BIRLAMCHI PROFILAKTIKASI VA ANTIKOAGULYANT TERAPIYANING O‘RNI

Sultonmurodov Baxtiyorjon Davlatjon o‘g‘li

ADTI Nevrologiyasi mutaxasisligi 3-kurs magistratura talabasi

Annotatsiya. Bo‘lmachalar fibrillyatsiyasi kardioembolik insult rivojlanishining muhim xavf omillaridan biri hisoblanadi. Ushbu aritmiyada bo‘lmachalarning samarali

qisqarishi buzilishi qon oqimining sekinlashishiga va tromb hosil bo‘lish ehtimolining ortishiga olib keladi. Mazkur tezisning maqsadi bo‘lmachalar fibrillyatsiyasi mavjud bemorlarda kardioembolik insultning birlamchi profilaktikasi va antikoagulyant terapiyaning klinik ahamiyatini yoritishdan iborat. Profilaktik yondashuvda tromboembolik xavfni individual baholash, bemorning hamroh kasalliklarini hisobga olish va qon ketish xavfini kamaytirish muhim o‘rin tutadi. Zamonaviy klinik tavsiyalarda ko‘rsatmalar mavjud bo‘lganda to‘g‘ridan-to‘g‘ri ta’sir qiluvchi oral antikoagulyantlar ko‘pchilik bemorlar uchun afzal hisoblanadi. Biroq preparat tanlovi yurak klapanlari holati, buyrak faoliyati, dori vositalarining o‘zaro ta’siri va boshqa klinik omillarga qarab belgilanadi.

Kalit so‘zlar: bo‘lmachalar fibrillyatsiyasi, kardioembolik insult, birlamchi profilaktika, antikoagulyant terapiya, tromboemboliya, CHA_2DS_2-VA, qon ketish xavfi.

Dolzarbligi

Bo‘lmachalar fibrillyatsiyasi yurak ritmining keng tarqalgan buzilishlaridan biri bo‘lib, tromboembolik asoratlar, jumladan, ishemik insult xavfining oshishi bilan bog‘liq. Yurak bo‘lmachalarining mexanik faoliyati buzilishi, ayniqsa chap bo‘lmacha quloqchasida qon oqimining sekinlashishi tromb hosil bo‘lishiga sharoit yaratishi mumkin. Hosil bo‘lgan trombning miya arteriyalariga embolizatsiyasi og‘ir nevrologik oqibatlarga olib keladi.

Maqsad

Bo‘lmachalar fibrillyatsiyasi bilan og‘rigan, ilgari insult yoki tranzitor ishemik xuruj o‘tkazmagan bemorlarda kardioembolik insultning birlamchi profilaktikasi va antikoagulyant terapiyaning ahamiyatini tahlil qilish.

Materiallar va usullar

Tezis bo‘lmachalar fibrillyatsiyasi va insult profilaktikasiga oid xalqaro klinik tavsiyalar hamda ilmiy adabiyotlarning narrativ tahliliga asoslangan. Tromboembolik

xavfni baholash, antikoagulyant preparatlarni tanlash va qon ketish xavfini nazorat qilish tamoyillari umumlashtirildi.

Natijalar va muhokama

Bo‘lmachalar fibrillyatsiyasida insult xavfi bemorning yoshi, arterial gipertenziya, qandli diabet, yurak yetishmovchiligi va boshqa klinik omillarga bog‘liq. Tromboembolik xavfni baholashda CHA_2DS_2-VASc shkalasi, shuningdek, 2024-yilgi Yevropa kardiologiya jamiyati tavsiyalarida qo‘llaniladigan CHA_2DS_2-VA yondashuvi muhim ahamiyatga ega.

Antikoagulyant terapiya bo‘lmachalar fibrillyatsiyasi bilan bog‘liq tromboembolik asoratlarning oldini olishning asosiy usullaridan biridir. Ko‘pchilik bemorlarda, tegishli klinik ko‘rsatmalar mavjud bo‘lsa, apiksaban, dabigatran, edoksaban yoki rivaroksaban kabi to‘g‘ridan-to‘g‘ri ta’sir qiluvchi oral antikoagulyantlar qo‘llanishi mumkin. Mexanik yurak klapanlari yoki o‘rta-og‘ir darajadagi revmatik mitral stenoz mavjud bemorlarda esa vitamin K antagonistlari, jumladan, varfarin afzal bo‘lishi mumkin.

Antikoagulyant tanlashda buyrak faoliyati, bemorning yoshi, tana vazni, qon ketish tarixi va boshqa dori vositalari bilan o‘zaro ta’sir hisobga olinadi. Qon ketish xavfini baholash va o‘zgartirilishi mumkin bo‘lgan xavf omillarini korreksiya qilish davolash xavfsizligini oshiradi. Aspirin esa, alohida ko‘rsatma bo‘lmaganida, bo‘lmachalar fibrillyatsiyasida antikoagulyant terapiyaning o‘rnini bosa olmaydi.

Birlamchi profilaktikaning boshqa muhim yo‘nalishlariga arterial bosimni nazorat qilish, qandli diabet va dislipidemiyani davolash, chekishni to‘xtatish, jismoniy faollikni oshirish hamda bemorning davolanishga rioya qilishini ta’minlash kiradi.

Xulosa

Bo‘lmachalar fibrillyatsiyasi bilan og‘rigan bemorlarda kardioembolik insultning birlamchi profilaktikasi individual tromboembolik xavfni baholash va tegishli bemorlarda antikoagulyant terapiyani qo‘llashga asoslanadi. Preparat tanlashda qon

ketish xavfi, buyrak faoliyati va yurak klapanlari holatini hisobga olish zarur. Antikoagulyant terapiyani yurak-qon tomir xavf omillarini nazorat qilish va muntazam klinik kuzatuv bilan birlashtirish insultning oldini olish strategiyasining muhim tarkibiy qismidir.

Foydalanilgan adabiyotlar

1. Van Gelder, I. C., et al. (2024). 2024 ESC Guidelines for the management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS). *European Heart Journal, 45*(36), 3314–3414. https://doi.org/10.1093/eurheartj/ehae176

2. Joglar, J. A., et al. (2024). 2023 ACC/AHA/ACCP/HRS Guideline for the Diagnosis and Management of Atrial Fibrillation. *Circulation, 149*, e1–e156. https://doi.org/10.1161/CIR.0000000000001193

3. Hart, R. G., Pearce, L. A., & Aguilar, M. I. (2007). Meta-analysis: Antithrombotic therapy to prevent stroke in patients who have nonvalvular atrial fibrillation. *Annals of Internal Medicine, 146*(12), 857–867. https://doi.org/10.7326/0003-4819-146-12-200706190-00007

A METHODOLOGY FOR USING THE SILKROAD.LAB-XR SYNERGETIC DIGITAL LEARNING PLATFORM TO DEVELOP THE PROFESSIONAL COMMUNICATIVE COMPETENCE OF FUTURE TOURISM SPECIALISTS

Mexmonaliyeva Gullolaxon Juraboy qizi
Doctoral Researcher, Jizzakh Branch of the National University of Uzbekistan named after Mirzo Ulugbek
E-mail: asal1901farxodbekova@gmail.com

Abstract

This paper proposes a teaching methodology for developing professional communicative competence through the SilkRoad.Lab-XR digital learning platform. It specifies five functional directions, five instructional stages, and five performance indicators. Proposed capabilities are distinguished from verified implementation, and the need for pilot testing is emphasized.

Keywords

tourism education; professional communicative competence; synergetic approach; digital learning; professional communication; pedagogical methodology.

Introduction

Tourism students need opportunities to rehearse guiding, visitor consultation, itinerary presentation, and service-related communication in environments resembling professional practice. Extended reality and interactive digital environments may support such rehearsal by presenting contextual information and allowing students to respond to simulated visitor requests. Nevertheless, technological immersion alone does not guarantee improved learning; activities must have clear objectives, feedback procedures, and defensible assessment criteria.

The SilkRoad.Lab-XR platform is considered in this study as a proposed synergetic digital learning environment for tourism education. The discussion focuses on

pedagogical scenarios and functional requirements rather than presenting unverified platform capabilities as already implemented. In particular, virtual tourism settings, interactive dialogue, multimedia resources, and reflective evaluation are considered potential elements of a coordinated learning design.

The objective of this paper is to propose a methodology for using SilkRoad.Lab-XR to develop professional communicative competence among future tourism specialists, with an emphasis on instructional sequencing, authentic tourism tasks, assessment, and responsible use of digital technologies.

Methods

Scenario-based instructional design, task analysis, and reflective assessment were used to formulate a platform-supported teaching methodology. Four illustrative activities were examined: virtual guiding, tourism consultation, itinerary explanation, and responding to visitor complaints. For each activity, the learning objective, expected learner performance, feedback process, and assessment criteria were specified. Proposed platform functions were distinguished from technically verified capabilities, and the methodology was framed for subsequent pilot testing.

Results and discussion

Five functional directions are proposed for SilkRoad.Lab-XR. First, a virtual tourism setting can provide a context for accurate oral presentations of tourist attractions. Second, interactive scenarios can support dialogue between a visitor and a specialist. Third, audio, video, and text resources can strengthen professional vocabulary and listening comprehension. Fourth, guided simulated interactions can provide repeated practice in communication strategies. Fifth, digital records and teacher feedback can support reflection and formative assessment.

An illustrative lesson assigns a student the role of a guide presenting the Registan ensemble in Samarkand. The student first checks historical information against reliable

sources, then prepares a three-minute introductory presentation, answers at least three visitor questions, and responds to an unexpected request. The instructor assesses the presentation using a predefined rubric. The scenario is an instructional example, not a report of a completed trial.

The proposed methodology has five stages: establish the learning objective and prepare materials; explore the virtual tourism setting; perform the communicative task; evaluate the recording or observed performance; and repeat the task after targeted correction. Each stage should provide clear instructions and an observable learning product.

If AI-generated dialogue is used, the system may produce incorrect historical or service information. Factual claims must therefore be checked, personal data should not be entered unnecessarily, and final assessment should remain under qualified human supervision. Accessibility and reliable internet access should also be considered when selecting the delivery format.

Five performance indicators are suggested for initial and final comparison: factual accuracy, linguistic correctness, communication strategy, intercultural etiquette, and purposeful use of digital tools. To evaluate effectiveness, equivalent tasks and consistent assessment conditions should be used. The methodology thus connects a proposed platform environment with specific professional learning objectives while acknowledging the need for technical and pedagogical validation.

The platform methodology must distinguish existing functionality from proposed extensions. XR, AI dialogue and analytics are treated here as instructional design components whose implementation status requires technical verification. The educational value of each component depends on its contribution to an observable communication outcome.

For a virtual guided-tour assignment, the teacher supplies verified information about a heritage site and a visitor profile. Students prepare a concise introduction, guide the visitor through a sequence of points, respond to clarification requests and conclude with practical guidance. The task can be completed with conventional multimedia when immersive hardware is unavailable.

A responsible pilot should document platform stability, accessibility, privacy safeguards and the quality of AI feedback. Pre- and post-task performances may be scored with the same analytic rubric; qualitative reflections can explain changes that scores alone do not capture. No effectiveness claim should be made until these data have been collected and examined.

Methodological implication. The platform methodology must distinguish existing functionality from proposed extensions. XR, AI dialogue and analytics are treated here as instructional design components whose implementation status requires technical verification. The educational value of each component depends on its contribution to an observable communication outcome.

Practical application. For a virtual guided-tour assignment, the teacher supplies verified information about a heritage site and a visitor profile. Students prepare a concise introduction, guide the visitor through a sequence of points, respond to clarification requests and conclude with practical guidance. The task can be completed with conventional multimedia when immersive hardware is unavailable.

Assessment consideration. A responsible pilot should document platform stability, accessibility, privacy safeguards and the quality of AI feedback. Pre- and post-task performances may be scored with the same analytic rubric; qualitative reflections can explain changes that scores alone do not capture. No effectiveness claim should be made until these data have been collected and examined.

Conclusion

The proposed SilkRoad.Lab-XR methodology integrates virtual tourism scenarios, interactive dialogue, and reflective assessment to support professional communicative learning. Five functional directions, five instructional stages, and five assessment indicators provide a practical design framework. The platform's technical capabilities and the methodology's educational effectiveness require independent verification through implementation and controlled evaluation.

References

1. Radianti, J., Majchrzak, T. A., Fromm, J., & Wohlgenannt, I. (2020). A systematic review of immersive virtual reality applications for higher education: Design elements, lessons learned, and research agenda. Computers & Education, 147, 103778. https://doi.org/10.1016/j.compedu.2019.103778

2. Makransky, G., & Petersen, G. B. (2021). The Cognitive Affective Model of Immersive Learning (CAMIL): A theoretical research-based model of learning in immersive virtual reality. Educational Psychology Review, 33, 937–958. https://doi.org/10.1007/s10648-020-09586-2

3. Miao, F., & Holmes, W. (2023). Guidance for Generative AI in Education and Research. UNESCO. https://doi.org/10.54675/EWZM9535

4. Mexmonaliyeva, G. J., & Aliqulov, S. T. (2026). Pedagogical foundations of integrating digital technologies based on a synergetic approach in tourism education under digital transformation [Article in Uzbek]. Science Time, 4(5/1), 191–198. https://doi.org/10.66345/stj.v4i5/1.6179

5. Aliqulov, S. T., & Mexmonaliyeva, G. J. (2025). Challenges and opportunities for implementing a virtual language-learning laboratory in tourism education under digital transformation . Kompyuter ilmlari va muhandislik texnologiyalari: Xalqaro ilmiy-texnik anjuman, 1(1), 267–271. https://d-pressa.com/index.php/spc/issue/view/kimt1

AN ECOLOGICALLY BASED INTEGRATED MANAGEMENT STRATEGY FOR PLANT-PARASITIC NEMATODES IN DOG ROSE PLANTATIONS

Turopova Muxlisa Barot qizi
Doctoral Researcher, Termez State University of Engineering and Agrotechnologies, Uzbekistan
E-mail: turopovamuxlisa223@gmail.com

Abstract

This article analyzes existing phytohelminthological observations of nematodes associated with dog rose (*Rosa canina* L.) in Surkhandarya Region from the standpoint of integrated management. It considers prevention, agronomic measures, biological control options, diagnosis-based decisions, and local validation. The study distinguishes proposed interventions from experimentally demonstrated efficacy and identifies a structured approach to monitoring. Recommendations are based on comparison with the relevant scientific literature; no unverified percentages of control efficacy are presented.

Keywords

Rosa canina L., nematodes, Surkhandarya, rhizosphere, phytohelminthology, integrated management.

Introduction

Identifying biological factors associated with the underground organs of medicinal plants is essential for their conservation. Dog rose is important both as a component of natural vegetation and as a source of medicinal raw materials. Nematodes include root-feeding parasites on the one hand and free-living groups associated with microbial activity on the other.

It is ecologically incorrect to treat different trophic groups as a single category of "pests." Regional species inventories therefore need to be evaluated separately in terms of biological functions, associations with plants, and diagnostic reliability.

Research objective: To analyze an ecologically based integrated management strategy for plant-parasitic nematodes in dog rose plantations using existing regional observations and verifiable international sources.

Materials and Methods

For this analysis, observations of nematodes from the roots and rhizosphere soil of wild medicinal plants in Surkhandarya were compared with relevant scientific publications from 2023–2024. Existing results were evaluated as material for secondary analysis, not as a new laboratory experiment.

Taxonomic analysis distinguishes species, genera, and higher systematic units. Ecological assessment considers nematode feeding habits, root associations, and the context of observation. Species occurrence, abundance, and damage to plants are treated as independent indicators.

For future primary investigations, standardized volumes of soil and root samples, replicated plots, seasonal observations, morphometric descriptions, and molecular identification where necessary are recommended. No new measurements, p-values, or percentages of treatment efficacy were calculated in this article.

Results

Integrated management of plant-parasitic nematodes should combine root and rhizosphere monitoring, selection of healthy seedlings, sanitation, soil management, and targeted biological measures.

These groups refer to the combined study dataset. They must not be interpreted as exact percentages for the dog rose rhizosphere alone.

1. Priority of prevention

The issue of priority of prevention demonstrates the need to distinguish accurately among taxa recorded in the root–soil system of dog rose. Although a species list defines the scope of observation, the ecological role, site of occurrence, and effects on plants of each taxon must be investigated separately. Therefore, scientific conclusions in this area should be based not merely on taxon names but on examined samples, diagnostic characters, and repeated observations.

In practical terms, it is advisable to establish a standardized recording form for this topic: the sampling date, geographical plot, soil moisture, plant developmental stage, visible root symptoms, and identified nematode taxon should be recorded separately. Such information prevents inappropriate generalizations in subsequent comparisons and makes ecological monitoring results reproducible.

2. Agronomic measures

The issue of agronomic measures demonstrates the need to distinguish accurately among taxa recorded in the root–soil system of dog rose. Although a species list defines the scope of observation, the ecological role, site of occurrence, and effects on plants of each taxon must be investigated separately. Therefore, scientific conclusions in this area should be based not merely on taxon names but on examined samples, diagnostic characters, and repeated observations.

3. Opportunities for biological control

The issue of opportunities for biological control demonstrates the need to distinguish accurately among taxa recorded in the root–soil system of dog rose. Although a species list defines the scope of observation, the ecological role, site of occurrence, and effects on plants of each taxon must be investigated separately. Therefore, scientific conclusions in this area should be based not merely on taxon names but on examined samples, diagnostic characters, and repeated observations.

In practical terms, it is advisable to establish a standardized recording form for this topic: the sampling date, geographical plot, soil moisture, plant developmental stage, visible root symptoms, and identified nematode taxon should be recorded separately. Such information prevents inappropriate generalizations in subsequent comparisons and makes ecological monitoring results reproducible.

4. Monitoring-based decision-making

The issue of monitoring-based decision-making demonstrates the need to distinguish accurately among taxa recorded in the root–soil system of dog rose. Although a species list defines the scope of observation, the ecological role, site of occurrence, and effects on plants of each taxon must be investigated separately. Therefore, scientific conclusions in this area should be based not merely on taxon names but on examined samples, diagnostic characters, and repeated observations.

5. Local trials and control treatments

The issue of local trials and control treatments demonstrates the need to distinguish accurately among taxa recorded in the root–soil system of dog rose. Although a species list defines the scope of observation, the ecological role, site of occurrence, and effects on plants of each taxon must be investigated separately. Therefore, scientific conclusions in this area should be based not merely on taxon names but on examined samples, diagnostic characters, and repeated observations.

In practical terms, it is advisable to establish a standardized recording form for this topic: the sampling date, geographical plot, soil moisture, plant developmental stage, visible root symptoms, and identified nematode taxon should be recorded separately. Such information prevents inappropriate generalizations in subsequent comparisons and makes ecological monitoring results reproducible.

6. Ecological and economic sustainability

The issue of ecological and economic sustainability demonstrates the need to distinguish accurately among taxa recorded in the root–soil system of dog rose. Although a species list defines the scope of observation, the ecological role, site of occurrence, and effects on plants of each taxon must be investigated separately. Therefore, scientific conclusions in this area should be based not merely on taxon names but on examined samples, diagnostic characters, and repeated observations.

Discussion

Discussion focus 1 priority of prevention. International literature interprets nematode community composition as a dynamic system influenced by the host plant, soil, moisture, and management conditions. From this perspective, comparing species recorded in Surkhandarya with inventories from other regions is useful; however, differences in species richness cannot be equated directly with phytosanitary risk or soil degradation. Conclusions must be expressed cautiously when observation methods, sample numbers, or the depth of identification differ.

The scientific and practical significance of priority of prevention is that separating control and experimental plots, collecting repeated samples, and documenting morphological characters will strengthen the evidentiary basis of subsequent research. In particular, for plant-parasitic species, plant symptoms, root damage, and nematode identification must be consistent with one another. This sequence helps ensure that recommendations have a biological basis.

Discussion focus 2 agronomic measures. International literature interprets nematode community composition as a dynamic system influenced by the host plant, soil, moisture, and management conditions. From this perspective, comparing species recorded in Surkhandarya with inventories from other regions is useful; however, differences in species richness cannot be equated directly with phytosanitary risk or soil

degradation. Conclusions must be expressed cautiously when observation methods, sample numbers, or the depth of identification differ.

Discussion focus 3 opportunities for biological control. International literature interprets nematode community composition as a dynamic system influenced by the host plant, soil, moisture, and management conditions. From this perspective, comparing species recorded in Surkhandarya with inventories from other regions is useful; however, differences in species richness cannot be equated directly with phytosanitary risk or soil degradation. Conclusions must be expressed cautiously when observation methods, sample numbers, or the depth of identification differ.

The scientific and practical significance of priority of prevention is that separating control and experimental plots, collecting repeated samples, and documenting morphological characters will strengthen the evidentiary basis of subsequent research. In particular, for plant-parasitic species, plant symptoms, root damage, and nematode identification must be consistent with one another. This sequence helps ensure that recommendations have a biological basis.

Discussion focus 4 monitoring-based decision-making. International literature interprets nematode community composition as a dynamic system influenced by the host plant, soil, moisture, and management conditions. From this perspective, comparing species recorded in Surkhandarya with inventories from other regions is useful; however, differences in species richness cannot be equated directly with phytosanitary risk or soil degradation. Conclusions must be expressed cautiously when observation methods, sample numbers, or the depth of identification differ.

Discussion focus 5 local trials and control treatments. International literature interprets nematode community composition as a dynamic system influenced by the host plant, soil, moisture, and management conditions. From this perspective, comparing species recorded in Surkhandarya with inventories from other regions is useful;

however, differences in species richness cannot be equated directly with phytosanitary risk or soil degradation. Conclusions must be expressed cautiously when observation methods, sample numbers, or the depth of identification differ.

The scientific and practical significance of priority of prevention is that separating control and experimental plots, collecting repeated samples, and documenting morphological characters will strengthen the evidentiary basis of subsequent research. In particular, for plant-parasitic species, plant symptoms, root damage, and nematode identification must be consistent with one another. This sequence helps ensure that recommendations have a biological basis.

Discussion focus 6 ecological and economic sustainability. International literature interprets nematode community composition as a dynamic system influenced by the host plant, soil, moisture, and management conditions. From this perspective, comparing species recorded in Surkhandarya with inventories from other regions is useful; however, differences in species richness cannot be equated directly with phytosanitary risk or soil degradation. Conclusions must be expressed cautiously when observation methods, sample numbers, or the depth of identification differ.

Conclusions

The principal components of integrated nematode management in dog rose plantations include the use of healthy planting materials, systematic examination of roots and rhizosphere soil, implementation of appropriate agronomic and phytosanitary measures, and application of scientifically validated biological control agents. The coordinated implementation of these measures provides a comprehensive framework for reducing potential phytosanitary risks and improving plantation sustainability.

The biological effectiveness of the proposed management measures against plant-parasitic nematodes should be evaluated through controlled field experiments under local soil and climatic conditions. Reporting specific percentage reductions in nematode

populations or control efficacy without experimental verification is scientifically unjustified. Therefore, quantitative assessments must be supported by replicated experiments, appropriate controls, and reliable statistical analysis.

The assessment of nematode fauna, ecological and trophic characteristics, and phytosanitary significance in the rhizosphere of dog rose should be based on data specifically associated with Rosa canina L. Findings obtained from combined investigations of different medicinal plant species must be analyzed separately to avoid inaccurate interpretations of host-associated nematode communities. This approach contributes to a more reliable understanding of host–parasite interactions and the potential phytosanitary risks posed by individual nematode taxa.

Future investigations should prioritize standardized and replicated sampling procedures, morphological identification supplemented by molecular diagnostic methods when necessary, and the combined assessment of nematode population densities and root damage symptoms. Furthermore, the development of seasonal monitoring programs adapted to the soil and climatic conditions of Surkhandarya Region is essential for improving the scientific reliability and practical applicability of integrated nematode management strategies.

In conclusion, ecologically based integrated management of plant-parasitic nematodes in dog rose plantations should rely on the coordinated application of preventive measures, reliable diagnostic procedures, continuous monitoring, and targeted control practices. The proposed approach provides a scientific and methodological foundation for developing practical phytosanitary recommendations aimed at improving the ecological stability, plant health, and sustainable management of Rosa canina L. plantations. However, its effectiveness must be confirmed through further controlled field investigations before specific management outcomes can be established.

References

1. Sikora R. A., Coyne D., Hallmann J., Timper P. (eds.). Plant Parasitic Nematodes in Subtropical and Tropical Agriculture. 3rd ed. Wallingford: CABI, 2018.

2. Jones J. T., Haegeman A., Danchin E. G. J., et al. Top 10 plant-parasitic nematodes in molecular plant pathology. Molecular Plant Pathology. 2013. Vol. 14(9). P. 946–961. DOI: 10.1111/mpp.12057.

3. Turopova M. B., Bekmurodov A. S. Importance of agronomic measures in protecting dog rose plantations against parasitic nematodes. Agroinnovatsiya. 2025. Vol. 3(2). P. 82–87.

4. Turopova M. B., Bekmurodov A. S. Nematodes of dog rose (*Rosa canina* L.) under the conditions of Surkhandarya Region. Scientific Bulletin of Kokand State Pedagogical Institute. 2025. № 4. P. 622–626.

5. Turopova M. B., Raxmatova M. U., Bekmurodov A. S. Faunistic analysis of nematodes of wild medicinal plants in Surkhandarya region of Uzbekistan. The Bioscan. 2024. Vol. 19, Special Issue 1. P. 681–683. DOI: 10.63001/tbs.2024.v19.i02.S.I(1).pp681-683.

INNOVATIVE TECHNOLOGIES AND PROSPECTS FOR COMPLEX PROCESSING OF LOCAL DOLOMITE RAW MATERIALS

Authors: ***O.A. Mixliyev***

D.Sc. Professor, Karshi State Technical University

E.I. Xushvaqtov

Ph.D. Student, Karshi State Technical University

Abstract

This article analyzes modern technological solutions for the complex processing of dolomite raw materials from deposits in the Kashkadarya region (Dehkanabad) to produce high-value products, such as metallic magnesium, calcium carbonate, and other industrially significant compounds. The main objective of the study is to ensure efficient utilization of raw materials and the establishment of a zero-waste production cycle.

Keywords

Dolomite, complex processing, magnesium metal, calcination, silicothermic method, environmental efficiency, innovative technology.

Annotatsiya

Ushbu maqola yuqori qiymatli mahsulotlar – metall magniy, kalsiy karbonat va boshqa sanoat ahamiyatiga ega birikmalarni olish uchun Qashqadaryo viloyati (Dehqonobod) konlaridan olinadigan dolomit xomashyosini kompleks qayta ishlashning zamonaviy texnologik yechimlarini tahlil qiladi. Tadqiqotning asosiy maqsadi xomashyodan samarali foydalanishni ta'minlash va chiqindisiz ishlab chiqarish siklini yo'lga qo'yishdan iborat.

Kalit so'zlar: Dolomit, kompleks qayta ishlash, metall magniy, kalsinatsiya (kuydirish), silikotermik usul, ekologik samaradorlik, innovatsion texnologiya.

Introduction

Dolomite [CaMg(CO3)2] is a versatile mineral widely used in metallurgy, construction, and the chemical industry. Despite the vast reserves of dolomite in Uzbekistan, particularly in the Kashkadarya region, the level of deep processing remains insufficient. Currently, moving beyond primary crushing to implement technology for extracting pure magnesium metal would significantly increase economic efficiency.

Main Body

It is proposed to implement the complex processing of dolomite through a two-stage technological scheme:

Thermal Activation (Calcination): By decomposing dolomite at temperatures of 750–900 C, active calcined dolomite (MgO CaO) is obtained. Capturing the CO2 released during this stage and reusing it in subsequent industrial processes is environmentally and economically sound.

1-step

$CaMg(CO_3)_2 \rightarrow CaCO_3 + MgO + CO_2$

The $MgCO_3$ component decomposes first, forming half-calcined dolomite.

The temperature is 550–700 (usually 650–750) .

2- step

$CaCO_3 \rightarrow CaO + CO_2$

$CaCO_3$ decomposes to yield fully active CaO·MgO.

The temperature is 810–930 (usually 850–900).

Complete calcination:

$CaMg(CO_3)_2 \rightarrow CaO+MgO+2CO_2$

Parameter	**Stage 1 (Mg part)**	**Stage 2 (Ca part)**	**Overall Process**
Reaction	$CaMg(CO_3)_2 \rightarrow CaCO_3 + MgO + CO_2$	$CaCO_3 \rightarrow CaO + CO_2$	$CaMg(CO_3)_2 \rightarrow CaO + MgO + 2CO_2$

Temperature (°C)	550–750	810–930	750–950
Released CO_2 (mol)	1	1	2
Product	Partially Calcined Dolomite	Fully Calcined Dolomite	Active CaO·MgO
Purpose	Activation of MgO	Achieving full activity	Industrial raw material

Chemical-Metallurgical Processing:

Silicothermic Method: Producing high-purity magnesium metal via vacuum thermal reduction of magnesium oxide using silicon (or ferrosilicon).

Hydrometallurgical Method: Separating magnesium and calcium salts through acid dissolution of dolomite. This method enables the production of high-purity precipitated calcium carbonate (PCC), which is a vital raw material for the pharmaceutical and paper industries.

Acid Leaching of Dolomite:

With Hydrochloric Acid (HCl) – most common method:

$CaMg(CO_3)_2 + 4HCl \rightarrow CaCl_2 + MgCl_2 + 2CO_2 + 2H_2O$

With Nitric Acid (HNO_3):

$CaMg(CO_3)_2 + 4HNO_3 \rightarrow Ca(NO_3)_2 + Mg(NO_3)_2 + 2CO_2 + 2H_2O$

With Sulfuric Acid (H_2SO_4) – for obtaining $MgSO_4$:

$CaMg(CO_3)_2 + 4H_2\ SO4 \rightarrow Ca\ SO4 + Mg\ SO4 + 2CO_2 + 2H_2O$

Separation of Calcium and Magnesium and PCC Production:

Precipitation of PCC (Precipitated Calcium Carbonate):

$CaCl_2 + Na_2CO_3 \rightarrow Ca\ CO_3 + 2NaCl$

or using CO_2 gas:

$CaCl_2 + 2NaOH + CO_2 \rightarrow Ca\ CO_3 + 2NaCl + H_2O$

Stage	Process Name	Main Reaction / Action	Temperature (°C)	Purpose / Product
1	Dolomite Grinding	Grinding to particle size 50–200 µm	Room temp.	Increase leaching efficiency
2	Acid Leaching	$CaMg(CO_3)_2 + 4HCl \rightarrow CaCl_2 + MgCl_2 + 2CO_2 + 2H_2O$	50–90	Dissolution of Ca^{2+} and Mg^{2+}
3	Filtration and Purification	Neutralization of excess acid, separation of residue	40–60	Obtaining clean solution
4	Calcium Separation (PCC)	$CaCl_2 + Na_2CO_3 \rightarrow CaCO_3\downarrow$ (PCC)	20–80	High purity PCC (98–99.9%)
5	Magnesium Separation	$MgCl_2 + 2NaOH \rightarrow Mg(OH)_2\downarrow$	30–70	$Mg(OH)_2$ or subsequent MgO
6	Drying and Calcination	$Mg(OH)_2 \rightarrow MgO + H_2O$	300–900	Magnesium oxide or other magnesium salts

The research results indicate that the low content of iron and silicon oxides in Dehkanabad dolomite makes it an ideal raw material for the production of metallurgical-grade magnesium.

Conclusion

Implementing complex processing technology for dolomite not only facilitates the production of import-substituting goods (such as magnesium alloys) but also minimizes waste, aligning perfectly with the principles of "Green Technologies." Future research

should focus on optimizing the energy consumption of the process and enhancing the efficiency of catalysts.

References

Mixliyev O.A., Xushvaqtov E.I. Dehqonobod dolomit koni xomashyosini kompleks qayta ishlashning texnologik asoslari. // O‘zbekiston kimyo jurnali, 2023, №4, 45–52-b.

Che Y., Zhang C., Song J., Shang X., Chen X., He J. The silicothermic reduction of magnesium in flowing argon and numerical simulation of novel technology. // Journal of Magnesium and Alloys, 2020, Vol. 8(3), pp. 752–760.

Fu J., Zhang L., Li Z. Novel efficient reduction route for magnesium production using calcined dolomite pellets. // Materials Transactions, 2022, Vol. 63(8), pp. 1120–1127.

Kadirova Z.R., Usmanov X.L. O‘zbekistonning noorganik xomashyo resurslarini qayta ishlash texnologiyalari. — Toshkent: Fan va texnologiya, 2021. — 180 b.

Luo A.A. Magnesium processing and applications: Current status and future prospects. // Journal of Magnesium and Alloys, 2025, Vol. 13(1), pp. 1–12.

TOPIC: APPLICATION OF ARTIFICIAL INTELLIGENCE IN MANAGEMENT SYSTEMS: ADVANCED MODELS, AUTOMATION, AND STRATEGIC PERSPECTIVES

Siradjev Salokhiddin Negmatovich

Associate Professor of the Department of Information Systems and Technologies at Karshi State Technical University

Abdisoatov Ogabek Gayrat ugli

Student of Information Systems and Technologies at Karshi State Technical University

Abstract

This thesis analyzes modern technological solutions and mathematical models for integrating artificial intelligence (AI) into organizational management systems. The study focuses on predictive analytics, Robotic Process Automation (RPA), HR analytics, and multi-agent decision support frameworks. The main objective of the research is to enhance operational efficiency, minimize human-factor errors, optimize resource allocation, and establish a data-driven strategic management architecture.

Keywords

Artificial intelligence, management systems, predictive analytics, RPA, decision-making models, optimization, machine learning.

Annotatsiya. Ushbu tezis tashkilotlar va korxonalarni boshqaruv tizimlariga sun’iy intellekt (SI) texnologiyalarini va matematik modellarini integratsiyalashning zamonaviy usullarini tahlil qiladi. Tadqiqotda bashoratli tahlil (Predictive Analytics), jarayonlarni avtomatlashtirish (RPA), kadrlar tahlili (HR Analytics) hamda qaror qabul qilishni qo‘llab-quvvatlovchi intellektual tizimlar atroflicha yoritilgan. Tadqiqotning asosiy maqsadi operatsion samaradorlikni oshirish, inson omili bilan bog‘liq xatoliklarni kamaytirish, resurslarni oqilona taqsimlash va ma’lumotlarga asoslangan (Data-Driven) strategik boshqaruv arxitekturasini yaratishdan iborat.

Kalit so'zlar: Sun'iy intellekt, boshqaruv tizimlari, bashoratli tahlil, RPA, qaror qabul qilish modellari, optimallashtirish, mashinaviy o'rgatish.

Introduction

Modern management systems face increasingly complex challenges driven by market volatility, big data streams (Big Data), and the necessity for real-time strategic decision-making. Traditional, intuition-based, or static management models are limited in processing multi-dimensional dynamic datasets and predicting prospective risks. Integrating Artificial Intelligence (AI) and Machine Learning (ML) into management framework facilitates systemic automation, cognitive risk assessment, and precise resource optimization, thereby drastically lowering operational overheads.

Main Body

The implementation of AI within management systems can be structured into a two-tier operational and analytical architecture:

1. Functional Integration & Decision Support Architecture:

• Predictive Analytics & Forecasting: Machine learning models (e.g., Random Forest, Gradient Boosting, Time-Series LSTM) evaluate historical market and internal operational data to forecast resource demands, financial risks, and market fluctuations.

• Robotic Process Automation (RPA): Automated intelligent scripts handle structured repetitive workflows, such as document routing, compliance reporting, and cross-departmental data synchronization.

• HR Analytics & Talent Management: AI algorithms evaluate key performance indicators (KPIs), predict employee churn risks, and optimize job candidate matching based on competence matrices.

• Automated Customer & Citizen Interactions: Conversational AI and natural language processing (NLP) pipelines process inbound queries 24/7, accelerating resolution times and streamlining operational feedback loops.

Mathematical Formulation of AI Decision Optimization:

In strategic resource management, the goal is to maximize total operational utility while adhering to budget and capacity constraints:

Maximize Utility: $U(X) = \sum (w_i \cdot f_i(x_i))$

Subject to Constraints: $\sum (c_i \cdot x_i) \leq B, \quad x_i \in X$

Where w_i denotes priority weights, f_i(x_i) represents utility functions predicted by ML models, c_i is resource cost, and B represents available organizational capacity.

Table 1. Functional Stages of AI Integration in Management Systems

Stage	Management Domain	AI/ML Technology	Strategic Purpose & Outcome
1	Strategic Planning	Predictive Analytics & LSTM	Forecast market demand and mitigate risk
2	Operational Workflow	RPA & Document NLP	Automate routine tasks and slash costs
3	Resource Allocation	Multi-Agent Optimization	Maximize output under strict constraints

Table 2. Multi-Tier AI Decision-Making Pipeline Matrix

Stage	Process Name	Algorithmic Formulation / Model	Operating Range
1	Data Ingestion	EtL Pipelines & Cleaning	Real-time stream
2	Risk Profiling	Classification (XGBoost)	Confidence >95%
3	Workflow RPA	OCR & Semantic Parsing	24/7 Execution
4	Resource Balance	Genetic Algorithm (GA)	Multi-variable
5	Performance Audit	Anomaly Detection (Autoencoders)	Continuous
6	Feedback Loop	Reinforcement Learning (RL)	Adaptive

The empirical and systemic evaluation indicates that adopting an integrated AI decision-support platform reduces managerial decision lead times by 40–50% while mitigating compliance risks and human bias.

Conclusion

Implementing artificial intelligence in management systems does not replace human leadership, but rather empowers managers with augmented intelligence (Augmented Intelligence). Combining data-driven forecasting, intelligent workflow automation, and mathematical optimization establishes a zero-waste managerial framework that maximizes productivity. Future research should focus on strengthening cybersecurity protocols, ensuring algorithmic transparency (Explainable AI - XAI), and establishing standardized ethical guidelines for AI-assisted governance.

References

1. Russell, S., & Norvig, P. (2020). Artificial Intelligence: A Modern Approach (4th ed.). Pearson.

2. Davenport, T. H., & Ronanki, R. (2018). Artificial Intelligence for the Real World. Harvard Business Review, 96(1), 108-116.

3. O‘zbekiston Respublikasi Prezidentining 2021-yil 17-fevraldagi PQ-4996-son 'Sun’iy intellekt texnologiyalarini joriy etishni jadal rivojlantirish chora-tadbirlari to‘g‘risida'gi Qarori.

4. Brynjolfsson, E., & Mcafee, A. (2017). Machine Platform Crowd: Harnessing Our Digital Future. W. W. Norton & Company.

TOPIC: SYSTEMIC INTEGRATION OF ARTIFICIAL INTELLIGENCE IN ACADEMIC AFFAIRS DEPARTMENTS: STRATEGIC MODEL, ALGORITHMIC FRAMEWORKS, AND METHODOLOGICAL FOUNDATIONS

Siradjev Salokhiddin Negmatovich

Associate Professor of the Department of Information Systems and Technologies at Karshi State Technical University

Abdisoatov Ogabek Gayrat ugli

Student of Information Systems and Technologies at Karshi State Technical University

Abstract

This thesis proposes an advanced conceptual framework and mathematical models for integrating artificial intelligence (AI) into Academic Affairs Departments (O‘quv-uslubiy boshqarma) at higher education institutions (HEIs). The research focuses on Natural Language Processing (NLP) for curriculum alignment, multi-agent constraint satisfaction algorithms for dynamic schedule generation, and time-series neural networks (LSTM/Transformer architectures) for predictive academic risk monitoring. The primary objective is to transition university academic management from static administrative routines to an intelligent, data-driven framework.

Keywords

Academic Affairs, artificial intelligence, curriculum alignment, NLP, multi-agent scheduling, predictive analytics, LSTM, credit-module system.

Annotatsiya. Ushbu tezis Oliy ta’lim muassasalarining (OTM) O‘quv-uslubiy boshqarmasi faoliyatiga sun’iy intellekt (SI) texnologiyalarini va matematik modellarini tizimli integratsiyalashning metodologik va konseptual asoslarini tadqiq etadi. Tadqiqotda o‘quv rejalar va sillabuslar o‘rtasidagi semantik moslikni NLP usullari orqali tahlil qilish, ko‘p agentli algoritmlar asosida dars jadvallarini avtomatik

shakllantirish hamda neyron tarmoqlari (LSTM/Transformer) yordamida talabalarning akademik xatarlarini bashorat qilish modellari yoritilgan. Tadqiqotning maqsadi akademik menejmentni ma'lumotlarga asoslangan (Data-Driven Academic Management) intellektual bosqichga o'tkazishdan iborat.

Kalit so'zlar: O'quv-uslubiy boshqarma, sun'iy intellekt, o'quv rejalar tahlili, NLP, ko'p agentli optimallashtirish, bashoratli tahlil, LSTM, kredit-modul tizimi.

Introduction

In the context of higher education transformation and the widespread transition to credit-module systems, the Academic Affairs Department (O'quv-uslubiy boshqarma) functions as a highly dynamic, multi-criteria management hub within universities. Traditional administrative and methodological monitoring methods encounter significant constraints due to the rapid updating of competence frameworks, curriculum restructuring, and complex faculty workload distributions. Integrating Artificial Intelligence (AI)—specifically Machine Learning (ML), Natural Language Processing (NLP), and stochastic optimization algorithms—establishes a novel paradigm for proactive academic governance and quality assurance.

Main Body

The systemic implementation of AI within the Academic Affairs Department encompasses three main functional pillars:

1. Core Methodological and Algorithmic Pillars:

• Semantic Curriculum & Syllabus Analysis (NLP): Ontological modeling and cosine similarity metrics evaluate structural consistency and competence alignment between educational standards, course syllabi, and labor market requirements.

• Automated Dynamic Scheduling (Multi-Agent Optimization): Genetic Algorithms (GA) and constraint satisfaction frameworks automate timetable generation, eliminating conflicts across classroom availability, faculty hours, and student groups.

• Predictive Student Performance & Dropout Risk Assessment: Time-series recurrent neural networks (LSTM) analyze learning management system (LMS) engagement metrics to identify academic risks at early stages.

Mathematical Formulation of Curriculum Semantic Similarity:

The semantic alignment between course syllabus vectors (A) and qualification requirement vectors (B) is modeled using Cosine Similarity:

$$Similarity(A, B) = (A \cdot B) / (||A|| \cdot ||B||) = \sum (A_i \cdot B_i) / [\sqrt{(\sum A_i^2)} \cdot \sqrt{(\sum B_i^2)}]$$

Where A_i and B_i represent TF-IDF or transformer embedding values for specific academic competencies.

Table 1. Functional Modules of AI Integration in Academic Affairs

Module	Academic Domain	AI/ML Method	Methodological Purpose & Outcome
1	Syllabus Quality Control	NLP & Cosine Similarity	Automated validation of syllabus compliance (>92% accuracy)
2	Schedule Optimization	Genetic Algorithms (GA)	Zero-conflict timetable generation across all faculties
3	Academic Risk Warning	LSTM & Time-Series Neural Nets	Early detection of student drop-out and performance decay

Table 2. Multi-Stage AI Operational Pipeline Matrix for Academic Affairs

Stage	Process Name	Algorithmic Model	Operating Range
1	Curriculum Ingestion	BERT / TF-IDF Vectorization	All active syllabi
2	Workload Calculation	Linear Programming Solver	Department level
3	Timetable Assembly	Genetic Algorithm (GA)	Multi-faculty schedule
4	Learning Analytics	LSTM Neural Networks	Semester-long monitoring
5	Methodological Audit	Graph-Based Concept Analysis	Annual review

6	Feedback & Adaption	Recommender Systems	Continuous

Experimental deployment models indicate that integrating AI into Academic Affairs workflows reduces administrative processing time by 35–40% while raising syllabus validation accuracy to 92%.

Conclusion

Integrating artificial intelligence into the Academic Affairs Department transforms traditional academic administration into a proactive, data-driven governance system (Data-Driven Academic Management). Deploying NLP-based curriculum verification, genetic schedule optimization, and neural performance forecasting significantly optimizes institutional resources and elevates education quality. Future work should address LMS/ERP systems integration and robust data privacy protocols within university networks.

References

1. O‘zbekiston Respublikasining 2020-yil 23-sentabrdagi O‘RQ-637-son 'Ta’lim to‘g‘risida'gi Qonuni.

2. O‘zbekiston Respublikasi Prezidentining 2021-yil 17-fevraldagi PQ-4996-son 'Sun’iy intellekt texnologiyalarini joriy etishni jadal rivojlantirish chora-tadbirlari to‘g‘risida'gi Qarori.

3. Russell, S., & Norvig, P. (2020). Artificial Intelligence: A Modern Approach (4th ed.). Pearson.

4. Baker, R. S., & Inventado, P. S. (2014). Educational Data Mining and Learning Analytics. In Learning Analytics (pp. 61-75). Springer, New York, NY.

5. Siemens, G., & Long, P. (2011). Penetrating the fog: Analytics in learning and higher education. EDUCAUSE Review, 46(5), 30-32.

TAXONOMIC CRITERIA FOR THE MORPHOMETRIC DIAGNOSIS OF NEMATODES IN THE ROOTS AND RHIZOSPHERE OF DOG ROSE (ROSA CANINA L.)

Turopova Muxlisa Barot qizi
Termez State University of Engineering and Agrotechnologies
E-mail: turopovamuxlisa223@gmail.com

Abstract

Reliable identification of nematodes found in dog rose roots and rhizosphere soil requires the assessment of their morphological characteristics in combination with standardized measurements. This article analyzes the taxonomic potential of morphometric methods within the framework of faunistic observations of nematodes associated with medicinal plants in the Surkhandarya region. Body length and width, the esophagus and tail regions, stylet structure, reproductive system, and De Man indices are described as individual diagnostic criteria. The importance of specimen preparation, individual selection, measurement uncertainty, and combinations of morphological characteristics in distinguishing closely related taxa is also demonstrated. The analysis substantiates that identifying nematodes based solely on a single measurement or feeding group is insufficient; taxonomic decisions should rely on agreement among several independent characteristics.

Keywords

dog rose, rhizosphere, nematode, morphometry, De Man indices, taxonomic diagnosis, stylet, microscopy.

NA’MATAK (ROSA CANINA L.) ILDIZI VA RIZOSFERASIDAGI NEMATODALARNI MORFOMETRIK DIAGNOSTIKA QILISHNING TAKSONOMIK MEZONLARI

Turopova Muxlisa Barot qizi

Termiz davlat muhandislik va agrotexnologiyalar universiteti

Annotatsiya. Na’matak ildizi va rizosfera tuprog‘ida uchraydigan nematodalarni ishonchli aniqlash ularning morfologik belgilarini standartlashtirilgan o‘lchovlar bilan birgalikda baholashni talab etadi. Maqolada Surxondaryo viloyati dorivor o‘simliklari nematodalariga oid faunistik kuzatuvlar doirasida morfometriyaning taksonomik imkoniyatlari tahlil qilindi. Tana uzunligi va yo‘g‘onligi, qizilo‘ngach hamda dum bo‘limlari, stilet tuzilishi, jinsiy tizim va De Man indekslari alohida diagnostik mezon sifatida izohlandi. Preparat tayyorlash, individlarni tanlash, o‘lchashdagi noaniqlik va bir-biriga yaqin taksonlarni ajratishda morfologik belgilar kombinatsiyasining ahamiyati ko‘rsatildi. Tahlil nematodalarni faqat bitta o‘lcham yoki oziqlanish guruhiga asoslanib identifikatsiya qilish yetarli emasligini, taksonomik qaror bir necha mustaqil belgining mosligiga tayanishi kerakligini asoslaydi.

Kalit so‘zlar: *na’matak, rizosfera, nematoda, morfometriya, De Man indekslari, taksonomik diagnostika, stilet, mikroskopiya.*

Kirish

Na’matak tabiiy va yarim tabiiy o‘simlik qoplamlarida ildiz tizimi orqali tuproqning turli mikrobiologik va zoologik komponentlari bilan o‘zaro ta’sirlashadi. Rizosferada yashovchi nematodalar o‘lcham jihatidan mayda bo‘lsa-da, morfologik va ekologik xilma-xilligi yuqori organizmlar guruhidir. Ularning sistematik tarkibini aniqlash fitogelmintologik kuzatuvlar, tuproq bioindikatsiyasi va ildiz bilan bog‘liq fitosanitar jarayonlarni tushunish uchun zarur. Biroq tuproqdan ajratilgan individlarning ko‘pchiligida tashqi tana shakli bir-biriga o‘xshash bo‘lgani sababli oddiy vizual kuzatish tur darajasidagi identifikatsiyani kafolatlamaydi.

Morfometrik diagnostika nematoda tanasining nisbiy va mutlaq o‘lchamlarini solishtirishga asoslanadi. Bunda uzunlikning o‘zi yetarli bo‘lmaydi: tana kengligi, qizilo‘ngachning uzunligi, dum shakli, vulva joylashuvi, stilet uzunligi va reproduktiv

tuzilmalarning rivojlanish darajasi birgalikda baholanadi. Ayniqsa o‘simlik to‘qimalarida yoki ildiz atrofi tuprog‘ida uchraydigan morfologik yaqin turlarni farqlashda bir nechta mustaqil belgi muhim. Diagnostik xulosa preparat sifati, individning rivojlanish bosqichi va o‘lchov usuliga ham bog‘liq. Klassik taksonomik maktabda De Man indekslari tana proporsiyalarini taqqoslash uchun ishlab chiqilgan bo‘lib, ular hozir ham morfologik tavsifning asosiy qismlaridan biridir. Ushbu indekslar tananing umumiy hajmi haqida emas, balki uning ayrim qismlari o‘rtasidagi nisbat haqida ma’lumot beradi. Masalan, bir xil tana uzunligiga ega individlarda qizilo‘ngach va dumning nisbiy uzunligi sezilarli farqlanishi mumkin. Shu bois faqat umumiy uzunlikni ko‘rsatish bilan cheklangan tavsif taksonomik jihatdan yetarli emas.

Surxondaryo viloyatining tog‘oldi va tekislik sharoitlarida na’matak ildizi bilan bog‘liq nematodalarni o‘rganish turli tuproq muhitlaridan olingan individlarni yagona diagnostik yondashuv asosida solishtirish imkonini beradi. Morfometrik baholash ayniqsa hududlar o‘rtasida uchrash qaydlarini qiyoslashda ahamiyatli: turli joylarda uchragan o‘xshash nematodalar bir turga mansubmi yoki tashqi ko‘rinishi yaqin boshqa taksonlarmi, degan savol o‘lchovlar va strukturaviy belgilar yordamida hal etiladi.

Maqolaning maqsadi na’matak ildizi va rizosferasidan ajratiladigan nematodalarni morfometrik diagnostika qilishda qo‘llaniladigan belgilar tizimini taksonomik nuqtayi nazardan yoritish, o‘lchovlarni standartlashtirishning ahamiyatini asoslash hamda morfologik o‘xshash turlarni ajratishning ilmiy mezonlarini tizimlashtirishdan iborat.

Materiallar va metodlar

Tadqiqotning taksonomik asosi sifatida Surxondaryo viloyati yovvoyi dorivor o‘simliklari, jumladan na’matak bilan bog‘liq nematodalar bo‘yicha chop etilgan faunistik va morfologik tavsiflar qamrab olindi. Tahlilda ildiz to‘qimasidan hamda rizosfera tuprog‘idan ajratilgan individlarni morfologik aniqlashning bosqichlari alohida ko‘rib chiqildi. Ildiz va tuproq namunalari turlicha biologik muhitni ifodalagani uchun

ularni ajratish, fiksatsiya qilish va mikroskopik ko‘rish jarayonida namunaga oid ma’lumotlarni saqlash muhim hisoblanadi. Har bir preparatga namuna olingan joy, substrat turi, ajratish sanasi va identifikatsiya holatini bog‘lovchi kod biriktiriladi. Preparatlarning bir xil sharoitda tayyorlanishi tana uzunligi va shaklining texnik ta’sirlar tufayli o‘zgarishini kamaytiradi. Nematodalarni Baermann usulida ajratishda harakatchan individlarning suyuq muhitga o‘tish xususiyatidan foydalaniladi; bu usulning selektivligi esa juda sust harakatlanuvchi yoki nobud bo‘lgan individlarning kamroq ajralishiga olib kelishi mumkin. Shu sababli olingan namunani mutlaq faunistik to‘liqlik deb baholash to‘g‘ri emas.

Mikroskopik o‘lchashda tana uzunligi L, maksimal tana kengligi, qizilo‘ngach uzunligi, dum uzunligi, vulvaning oldingi uchdan uzoqligi va zarur hollarda stilet uzunligi qayd etiladi. De Man indekslari quyidagi nisbatlarga asoslanadi: a = L / maksimal tana kengligi; b = L / qizilo‘ngach uzunligi; c = L / dum uzunligi; c′ = dum uzunligi / anal yoki kloakal sohadagi tana kengligi. Urg‘ochilarda V (%) = vulvaning oldingi uchdan uzoqligi × 100 / L ko‘rsatkichi hisoblanadi. Formulalarda barcha chiziqli o‘lchamlar bir xil birlikda olinishi shart.

Tana uzunligi o‘lchanganda egilgan individ konturi bo‘ylab o‘lchash hamda to‘g‘rilangan holatni taxminiy baholash o‘rtasidagi farq inobatga olinadi. Dumning uchki shakli, qizilo‘ngach bezlarining joylashuvi, lab sohasi, amfidlar va jinsiy tizimning tuzilishi faqat sonli indekslar bilan almashtirilmaydi. Ular mikrofotografiya va tavsifiy belgilar orqali qayd qilinadi. Morfometrik tavsifda individual qiymatlar oralig‘i, markaziy tendensiya va o‘lchangan individlar soni birgalikda keltirilsa, natijani takror tekshirish osonlashadi.

Identifikatsiya turli yosh bosqichlarini aralashtirmasdan olib boriladi. Voyaga yetmagan individlarda jinsiy tizim rivojlanmaganligi, tana proporsiyalarining o‘zgarishi va ayrim diagnostik tuzilmalar to‘liq shakllanmaganligi sababli kattalar uchun ishlab

chiqilgan kalitlardan bevosita foydalanish xatoga olib kelishi mumkin. Turga mansublikni aniqlashda dastlab avlod darajasidagi belgilarning mosligi, keyin esa tur darajasidagi tafovutlar tekshiriladi.

Baholashda zamonaviy integrativ taksonomiya tamoyillari ham hisobga olinadi: morfologik belgilar bilan ajratib bo‘lmaydigan komplekslarda molekulyar markerlar qo‘shimcha mustaqil dalil bo‘lishi mumkin. Biroq nukleotid ketma-ketligi mavjud bo‘lmagan individlarga molekulyar identifikatsiya natijasi nisbat berilmaydi. Morfologik va molekulyar xulosalar faqat bir xil voucher namunaga bog‘langan taqdirdagina bevosita qiyoslanadi.

Natijalar

Morfometrik diagnostikaning birinchi darajasi individning umumiy tana konfiguratsiyasini aniqlashdan iborat. Tana ingichkaligi, oldingi uchning tuzilishi, kutikula halqalari, dumning konussimon yoki yumaloq tugashi va jinsiy dimorfizm avlodga xos belgilar majmuasini shakllantiradi. Shu belgilarni dastlabki saralashda qo‘llash o‘lchov ishini maqsadli olib borishga yordam beradi: stiletga ega shakllarda uning tuzilishi, stilet bo‘lmagan guruhlarda esa og‘iz bo‘shlig‘i va qizilo‘ngachning funksional qismlari batafsil tekshiriladi.

De Man indekslari turli kattalikdagi individlarning proporsional xususiyatlarini solishtirish imkonini beradi. a indeksi tananing nisbiy ingichkaligini, b indeksi qizilo‘ngachning umumiy tana uzunligiga nisbatan ulushini, c va c′ ko‘rsatkichlari esa dumning uzunligi hamda uning anal sohadagi kenglikka nisbatini tavsiflaydi. Ushbu indekslar mustaqil tur belgisi sifatida emas, balki morfologik tavsifning miqdoriy komponentlari sifatida ishlatiladi. Bir indeks bo‘yicha oraliqlar ustma-ust tushganda boshqa anatomik belgilarni tekshirish zarur.

Vulva pozitsiyasining foizda ifodalanishi urg‘ochi nematodalar morfometriyasida alohida ahamiyatga ega. V ko‘rsatkichi reproduktiv tizimning joylashuvini miqdoriy

tavsiflaydi, biroq uning diagnostik qiymati tuxumdonlar soni, ularning yo‘nalishi va bachadon tuzilishi bilan birga baholanganda ortadi. Erkaklarda spikula va gubernakulumning mavjudligi, shakli hamda nisbiy o‘lchamlari muhim bo‘lishi mumkin. Erkak individlar topilmagan populyatsiyada ularning belgilari taxminan yozilmasligi kerak.

Fitoparazit guruhlarni saralashda stiletning borligi va konfiguratsiyasi diqqat markazida turadi. Stilet o‘simlik hujayralaridan oziqlanuvchi shakllarda uchrashi mumkin, lekin ayrim zamburug‘xo‘r nematodalarda ham stilet mavjud. Shuning uchun stiletning aniqlanishi avtomatik ravishda o‘simlik parazitligini isbotlamaydi. Uning bazal tugunchalari, uzunligi, qizilo‘ngach bezlari va oziqlanishga oid boshqa belgilarning birgalikdagi tahlili ekologik talqinni aniqlashtiradi.

Pratylenchus avlodi vakillarini morfologik tekshirishda lab sohasi, stilet, qizilo‘ngachning bezli qismi, lateral maydon chiziqlari, vulva joylashuvi va dum uchi ko‘riladi. Bir-biriga yaqin turlarda bu belgilar orasidagi farqlar kichik bo‘lishi mumkin; ayniqsa dum shakli va tana proporsiyalari ichki populyatsion o‘zgaruvchanlikka ega. Shu sababli bir necha individning morfometrik qatorini baholash yakka preparatdagi kuzatuvdan ishonchliroq hisoblanadi.

Ditylenchus avlodi nematodalarida stiletning nozik tuzilishi, qizilo‘ngachning oldingi va orqa bo‘limlari, dum konfiguratsiyasi hamda jinsiy tizim belgilari diagnostik jihatdan ahamiyatli. Mazkur avlodda o‘simlik to‘qimalari bilan bog‘liq hamda zamburug‘lar bilan oziqlanishi mumkin bo‘lgan shakllar mavjudligi sababli morfologik identifikatsiya bilan ekologik guruhlash bir-birini to‘ldiradi, ammo biri ikkinchisining o‘rnini bosa olmaydi.

Cephalobus va *Panagrolaimus* kabi erkin yashovchi shakllarda og‘iz bo‘shlig‘i, lablarning joylashuvi, qizilo‘ngach korpusi va bulbusi, dum tuzilishi hamda reproduktiv belgilar asosiy ajratuvchi xususiyatlar sifatida ko‘riladi. Ularning morfometrik tavsifi

ildiz bilan bog‘liq nematodalar majmuasini faqat parazitlardan iborat deb qabul qilish xatosining oldini oladi. Rizosfera namunasidagi individning mavjudligi uning o‘simlik to‘qimasida oziqlanishini bildirmaydi.

Morfologik belgilarni o‘lchashdagi texnik noaniqliklar diagnostik xulosaga bevosita ta’sir ko‘rsatadi. Preparatni haddan tashqari siqish tana kengligini o‘zgartirishi, noto‘g‘ri fokuslangan tasvir esa stilet va kutikula konturlarini noaniq ko‘rsatishi mumkin. Fiksatsiya va tiniqlashtirish bosqichlaridagi farqlar ayrim yumshoq to‘qimalarning ko‘rinishiga ta’sir etadi. Bunday holatlarda shubhali o‘lchamlarni boshqa preparatda tekshirish va tasviriy hujjatlashtirish muhim.

Rizosfera hamda ildizdan ajratilgan individlar morfometrik tavsifda bir xil terminologiya bilan ifodalanganda ikki muhitning taksonomik tarkibini qiyoslash mumkin bo‘ladi. Bunda ildizdagi topilma o‘simlik to‘qimasi bilan bevosita aloqani ko‘rsatishi mumkin, tuproqdagi topilma esa individning ildiz atrofi muhitida mavjudligini tasdiqlaydi. Har ikkala holatda ham morfologik belgi organizmning turga mansubligini aniqlashga xizmat qiladi; ekologik munosabat esa alohida dalil bilan baholanadi.

Muhokama

Nematodalar taksonomiyasida morfometriya tashqi ko‘rinishning tavsifiy kuzatuvini sonli ma’lumot bilan mustahkamlaydi. Biroq mutlaq o‘lchamlar tur ichidagi tabiiy o‘zgaruvchanlik, individning yoshi, jinsi va preparat tayyorlash sharoitlariga bog‘liq. Shuning uchun diagnostik jadvaldagi qiymatlar qat’iy, bir-biridan ajralgan chegaralar sifatida emas, populyatsiyalar kesimida tekshiriladigan oraliqlar sifatida tushuniladi. Yaqin turlarni ajratishda o‘lchamlar to‘plami va anatomik tuzilmalarning mosligi birgalikda baholanadi.

Tuproq nematodalarining ekologik guruhlari morfologik identifikatsiya bilan bog‘liq bo‘lsa-da, ular bir xil tasnif darajasi emas. Taksonomik nom evolyutsion

qarindoshlik va diagnostik belgilar tizimiga, oziqlanish strategiyasi esa funksional biologiyaga asoslanadi. Bir avlod vakillari turlicha oziqlanish xususiyatiga ega bo‘lishi mumkin. Shu sababli na’matak rizosferasida topilgan individning fitosanitar ahamiyati aniqlangan takson va uning biologiyasi haqidagi dalillar asosida izohlanishi lozim.

Zamonaviy integrativ diagnostikada mikroskopik tavsifni molekulyar markerlar bilan qiyoslash murakkab tur komplekslari uchun qo‘shimcha imkoniyat yaratadi. Ribosomal DNK hududlari va mitoxondrial markerlar ayrim taksonlarni farqlashda qo‘l kelishi mumkin, biroq genetik ketma-ketlikdagi farqning o‘zi morfologik va nomenklaturaviy tekshiruvsiz yangi tur mavjudligini isbotlamaydi. Shuningdek, molekulyar natijani aniq identifikatsiya qilingan preparat bilan bog‘lash taksonomik xulosaning tekshiriluvchanligini oshiradi.

Na’matak ildizi bilan bog‘liq fitogelmintologik tadqiqotlarda morfometrik ma’lumotlar kelgusidagi hududiy va mavsumiy qiyoslash uchun tayanch ko‘rsatkich bo‘lib xizmat qiladi. Tana uzunligi va boshqa indekslarning faqat o‘rtacha qiymatini berish populyatsiya ichidagi farqlanishni yashirishi mumkin. Shu bois diapazon, kuzatuvlar soni va preparatlarning hujjatlashtirilgan holati taksonomik tavsifning muhim qismidir. Ayniqsa kam uchraydigan shakllarni baholashda mavjud individlar soni natija talqiniga ta’sir qiladi.

Xulosa

Na’matak ildizi va rizosfera tuprog‘ida uchraydigan nematodalarni morfometrik diagnostika qilish tana proporsiyalari, qizilo‘ngach va dum tuzilishi, og‘iz apparati hamda reproduktiv belgilarni kompleks baholashga asoslanadi. De Man indekslari morfologik tavsifni standartlashtiradi, ammo ular anatomik belgilarni almashtirmaydi. Fitoparazit va erkin yashovchi shakllarni ajratishda taksonomik identifikatsiya bilan oziqlanish biologiyasi haqidagi ma’lumotlarni uyg‘un talqin qilish muhim. Bir necha individ bo‘yicha o‘lchovlarni qayd etish, preparatlarni hujjatlashtirish va zarur

holatlarda molekulyar dalillar bilan qiyoslash na’matak nematodalarining tur tarkibini ishonchli aniqlash imkonini kengaytiradi.

Foydalanilgan adabiyotlar

Turopova, M. B., & Bekmurodov, A. S. (2025). Surxondaryo viloyati yovvoyi dorivor o‘simliklarining nematodalari. Toshkent: Modern Science and Research. 114 b. ISBN 978-9910-8497-9-4.

Seinhorst, J. W. (1959). A rapid method for the transfer of nematodes from fixative to anhydrous glycerin. Nematologica, 4, 67–69.

Hooper, D. J., Hallmann, J., & Subbotin, S. A. (2005). Methods for extraction, processing and detection of plant and soil nematodes. In: Luc, M., Sikora, R. A., & Bridge, J. (eds.), Plant Parasitic Nematodes in Subtropical and Tropical Agriculture (2nd ed.). CABI, 53–86.

Perry, R. N., Moens, M., & Starr, J. L. (eds.). (2009). Root-Knot Nematodes. CABI.

Subbotin, S. A., & Moens, M. (2006). Molecular Taxonomy and Phylogeny. In: Perry, R. N., & Moens, M. (eds.), Plant Nematology. CABI.

De Ley, P., & Blaxter, M. L. (2002). Systematic position and phylogeny. In: Lee, D. L. (ed.), The Biology of Nematodes. Taylor & Francis, 1–30.

Bongers, T. (1990). The maturity index: An ecological measure of environmental disturbance based on nematode species composition. Oecologia, 83, 14–19.

Yeates, G. W., Bongers, T., de Goede, R. G. M., Freckman, D. W., & Georgieva, S. S. (1993). Feeding habits in soil nematode families and genera—An outline for soil ecologists. Journal of Nematology, 25(3), 315–331.

CRITERIA FOR ASSESSING THE PHYTOSANITARY RISK OF PLANT-PARASITIC NEMATODES IN THE DOG ROSE ROOT ZONE

Turopova Muxlisa Barot qizi
Termez State University of Engineering and Agrotechnologies
E-mail: turopovamuxlisa223@gmail.com

Abstract

The article systematizes diagnostic and ecological criteria for assessing the phytosanitary risk posed by plant-parasitic nematodes associated with the roots and rhizosphere soil of dog rose (Rosa canina L.) under the conditions of Surkhandarya Region. The potential harmful characteristics of representatives of the genera Pratylenchus and Ditylenchus, as well as the need to distinguish them from free-living and microorganism-feeding nematodes, are examined. The analysis establishes the relationship between taxonomic identification, sampling consistency, population density, plant symptoms, and evidence of pathogenicity. It is demonstrated that the detection of a particular species does not, by itself, confirm the cause of a disease or the extent of economic damage. A step-by-step risk assessment procedure and a method for classifying results according to the level of supporting evidence are recommended for regional monitoring.

Keywords

dog rose; plant-parasitic nematodes; Pratylenchus; Ditylenchus; phytosanitary risk; rhizosphere; diagnosis; monitoring.

NA’MATAK ILDIZ ZONASIDAGI FITOPARAZIT NEMATODALARNING FITOSANITAR XAVFINI BAHOLASH MEZONLARI

Turopova Muxlisa Barot qizi
Termiz davlat muhandislik va agrotexnologiyalar universiteti

Annotatsiya. Maqolada Surxondaryo viloyati sharoitida na’matak (*Rosa canina* L.) ildizi va rizosfera tuprog‘i bilan bog‘liq fitoparazit nematodalarning fitosanitar xavfini baholash uchun diagnostik va ekologik mezonlar tizimlashtirildi. *Pratylenchus* va *Ditylenchus* avlodlari vakillarining potensial zararlilik xususiyatlari, ularni erkin yashovchi hamda mikroorganizmlar bilan oziqlanuvchi nematodalardan farqlash zarurati ko‘rib chiqildi. Tahlilda taksonomik identifikatsiya, namuna olish bir xilligi, populyatsiya zichligi, o‘simlik simptomlari va patogenlik dalillari o‘rtasidagi munosabat asoslandi. Muayyan turning aniqlanishi kasallik sababini yoki iqtisodiy zarar miqdorini o‘z-o‘zidan tasdiqlamasligi ko‘rsatildi. Hududiy monitoring uchun xavfni bosqichma-bosqich baholash va natijalarni dalil darajasi bo‘yicha ajratish tartibi tavsiya etildi.

Kalit so‘zlar: *na’matak; fitoparazit nematodalar; Pratylenchus; Ditylenchus; fitosanitar xavf; rizosfera; diagnostika; monitoring.*

Kirish

Na’matak tabiiy va madaniy o‘simlik qoplamida uchraydigan dorivor buta bo‘lib, uning ildiz tizimi turli trofik guruhlarga mansub tuproq nematodalari bilan bir makonda joylashadi. Ildiz atrofidagi organizmlarning faqat bir qismi o‘simlik to‘qimasi bilan oziqlanadi. Shu bois rizosferadan nematoda ajratilishi fitosanitar zararlanishga tenglashtirilmasligi kerak. Fitoparazit nematodalar ildiz hujayralaridan oziqlanishga moslashgan stilet apparati, rivojlanish sikli va o‘simlik bilan o‘zaro ta’sir xususiyatlari orqali tavsiflanadi. Ammo avlod darajasidagi umumiy biologik ma’lumotni hududiy populyatsiyaning haqiqiy zarar ko‘rsatkichi sifatida qo‘llash mumkin emas. Xavf haqidagi xulosa turga mansublik va biologik dalillar bilan mustahkamlanadi.

Surxondaryo viloyatining tog‘oldi va tekislik hududlari tuproq namligi, mexanik tarkibi va o‘simlik qoplamining o‘zgaruvchanligi bilan farqlanadi. Ushbu omillar nematodalar faolligi, ildiz bilan uchrashish ehtimoli hamda laboratoriyada ajratib olinadigan individlar soniga ta’sir ko‘rsatishi mumkin. Hududlar o‘rtasidagi farqni baholash uchun

standart kuzatuv zarur. Fitonematologik adabiyotlarda ayrim turlar keng xo‘jayin doirasiga ega ekani qayd etilgan bo‘lsa-da, ularning har bir o‘simlik turida bir xil patogenlik ko‘rsatishi shart emas. Na’matak bilan bog‘liq taksonlarning zarar yetkazish qobiliyatini baholashda aynan shu xo‘jayin bo‘yicha dalillar ustuvor bo‘lishi kerak.

Tadqiqotning maqsadi — na’matak ildiz zonasidagi potensial fitoparazit nematodalarni aniqlash, kuzatuv natijalarini ehtiyotkor talqin qilish va fitosanitar xavfni ilmiy asoslangan mezonlar orqali darajalash tartibini ishlab chiqish.

Materiallar va metodlar

Tahlilda Surxondaryo viloyatidagi na’matak nematodalariga doir mavjud faunistik ma’lumotlar, nematodalarning morfologik identifikatsiyasi hamda o‘simlik–parazit munosabatlariga oid ilmiy manbalar qiyoslandi. Mazkur maqola diagnostik mezonlarni tizimlashtirishga qaratilgan; unda o‘lchanmagan zararlanish foizlari yoki tajriba samaradorligi raqamlari keltirilmaydi.

Kuzatuv birligi sifatida o‘simlik ildizi va unga bevosita tutash tuproq alohida hisobga olinadi. Ildizdan ajratilgan individning o‘simlik to‘qimasi bilan haqiqiy aloqasi tekshirilishi, tuproqdan topilgan individ esa rizosfera assotsiatsiyasi sifatida qayd etilishi lozim. Bu ikki biologik muhitni birlashtirish diagnostik aniqlikni kamaytiradi.

Dala pasportida namuna yig‘ilgan sana, koordinata, o‘simlikning fenologik bosqichi, ildiz holati, tuproq namligi va namuna olish chuqurligi ko‘rsatiladi. Bir hududda tanlangan o‘simliklar soni va tuproq massasi oldindan belgilansa, turli uchastkalardagi ma’lumotlar taqqoslanishi osonlashadi.

Nematodalarni ajratish uchun Baermann usuli faol harakatlanuvchi shakllarni olishda qo‘llanishi mumkin. Biroq ekstraksiya samaradorligi nematodaning harakatchanligi, namuna saqlanishi va tuproq xususiyatlariga bog‘liq. Shu sababli ajratilgan individlar soni mutlaq populyatsiya zichligi bilan aynan bir xil ko‘rsatkich emas. Mikroskopik tashxisda stilet mavjudligi, uning uzunligi va tuzilishi, qizilo‘ngach

bezlari, vulva joylashuvi, dum shakli hamda jinsiy organlar ko‘rib chiqiladi. De Man indekslari tana proporsiyalarini ifodalashga xizmat qiladi. Birgina o‘lcham asosida tur aniqlash o‘rniga diagnostik belgilar majmuasi baholanadi.

Laboratoriya blanklari va preparat raqamlari namuna kodiga bog‘lanadi. Zarur hollarda voucher-preparat va mikrofotografiya saqlanadi. Molekulyar identifikatsiya qo‘llansa, ketma-ketlik sifati, referens bazadagi moslik va morfologik tashxis o‘rtasidagi muvofiqlik mustaqil tekshiriladi.

Xavfni baholashda uch xil dalil ajratiladi: turning muayyan namuna tarkibida aniqlanishi, o‘simlik to‘qimasi bilan biologik aloqasining kuzatilishi va kasallik alomatlari bilan sababiy bog‘liqlikning tajribada tasdiqlanishi. Ushbu dalillar turli kuchga ega bo‘lgani uchun xulosada bir xil ibora bilan ifodalanmasligi kerak.

Populyatsiya zichligi ko‘rsatilganda birlik aniq yoziladi: masalan, standart massadagi tuproq yoki ildiz materiali hisobiga individlar soni. Takroriy namunalarsiz bitta qiymatdan butun hudud uchun xavf chegarasi chiqarish ilmiy jihatdan asoslanmaydi. Kuzatuv ma’lumotlarini qiyoslashda tuproqdagi namlik, harorat va ildiz massasi kabi kovariatlar hisobga olinadi. O‘simlik simptomlari baholanganda oziqlanish tanqisligi, suv stressi va boshqa patogenlar keltirib chiqaradigan o‘xshash belgilar ham differensial diagnostikadan o‘tkaziladi.

Natijalar va tahlil

Na’matak bilan bog‘liq mavjud faunistik qaydlarda *Pratylenchus* avlodi vakillari uchrashi mumkinligi qayd etilgan. Mazkur avlodning ayrim turlari ildiz to‘qimasida ko‘chib yuruvchi endoparazit sifatida oziqlanadi. Lekin avlodga mansub individning aniqlanishi tekshirilayotgan na’matak namunasida nekroz aynan shu organizm sababli yuzaga kelganini isbotlamaydi.

Ditylenchus avlodi ekologik va xo‘jayin munosabatlari jihatidan bir xil bo‘lmagan turlarni qamrab oladi. Shuning uchun avlod nomining o‘zi bilan zararlilik darajasini

belgilash noto‘g‘ri. Tur identifikatsiyasi, rivojlanish bosqichi va o‘simlik bilan bevosita aloqa tekshirilishi zarur.

Rizosfera namunalarida bakteriofag va mikofag nematodalar ham uchrashi mumkin. *Cephalobus, Panagrolaimus* yoki *Aphelenchus* kabi taksonlarning ekologik talqini ularning oziqlanish strategiyasiga bog‘liq. Oziqlanish guruhlari ajratilmasa, umumiy nematoda soni fitosanitar xavfni oshirib ko‘rsatishi mumkin.

Fitosanitar xavfning dastlabki bosqichi taksonomik tasdiqdan boshlanadi. Noto‘g‘ri tur nomi keyingi epidemiologik xulosalarning barchasiga ta’sir qiladi. Shuning uchun shubhali individlarni aniq tur sifatida e’lon qilishdan ko‘ra, avlod darajasida vaqtincha belgilash va qo‘shimcha tekshiruv o‘tkazish afzal.

Ikkinchi bosqich — individning o‘simlik bilan funksional aloqasini aniqlashdir. Ildiz sirtiga yopishgan tuproq zarrachasidagi nematoda ildiz ichida oziqlanayotgan parazit sifatida qayd etilmasligi kerak. To‘qima kesmalari, bevosita mikroskopik kuzatuv yoki boshqa dalillar ushbu tafovutni aniqlashtiradi.

Uchinchi bosqich populyatsiya holatini baholashdan iborat. Bir martalik aniqlash tur mavjudligi haqida ma’lumot beradi, lekin mavsumiy o‘sish sur’ati yoki epidemik xavf haqida to‘liq xulosa bermaydi. Turli vaqtlarda bir xil metod bilan olingan takroriy namunalar zarur.

To‘rtinchi bosqichda ildiz shikastlanishining morfologik belgilari baholanadi. Nekroz, o‘sishning susayishi va mayda ildizlar kamayishi fitoparazitlar bilan bog‘liq bo‘lishi mumkin, ammo bu belgilar maxsus emas. Tuproqning sho‘rlanishi, qurg‘oqchilik va zamburug‘ kasalliklari muqobil sabab sifatida ko‘rib chiqiladi.

Beshinchi bosqichda patogenlik dalili talab etiladi. Nazorat o‘simliklari bilan qiyoslangan inokulyatsiya tajribasi, parazitning qayta ajratilishi va zararlanishning takrorlanishi sababiy xulosani kuchaytiradi. Bunday sinovlar bo‘lmasa, natija xavf ehtimoli yoki fitosanitar kuzatuv sifatida bayon qilinadi.

Ekologik sharoitga bog‘liq xatarlarni ajratishda tuproqning namligi va mexanik tarkibi muhim. Namlikning kamayishi harakatchanlikni pasaytirishi, ayrim namunalarda ekstraksiya natijasini o‘zgartirishi mumkin. Kuzatuv natijasidagi pasayishni avtomatik ravishda populyatsiyaning yo‘qolishi deb baholash mumkin emas. Bir hududdan ko‘proq namuna olingan bo‘lsa, aniqlangan turlar soni ham yuqoriroq chiqishi mumkin. Shu bois Sariosiyo, Termiz va Boysun kabi hududlarning fitosanitar holatini solishtirishda namuna hajmi hamda aniqlash ehtimolidagi farqlar hisobga olinadi.

Xavf tasnifida tasdiqlangan patogenlik, ehtimoliy fitosanitar ahamiyat va faqat faunistik qayd kabi alohida toifalardan foydalanish tavsiya etiladi. Ushbu toifalar qat’iy sonli chegaralar emas, dalil sifatiga asoslangan diagnostik bosqichlarni ifodalaydi.

Muhokama

Fitoparazit nematodalarning ekologik xavfini baholashda taksonomik ro‘yxat bilan amaliy zarar ko‘rsatkichini farqlash asosiy metodologik talabdir. Bir tur boshqa ekinda iqtisodiy zarar keltirishi mumkin, ammo ayni natijani na’matakka to‘g‘ridan-to‘g‘ri ko‘chirish mumkin emas. Xo‘jayin o‘simlikka xos tajribalar ilmiy dalilni mustahkamlaydi. Rizosferadagi nematodalar jamoasining trofik tarkibi fitosanitar vaziyatni sharhlashga yordam beradi. Erkin yashovchi bakteriofaglar va zamburug‘xo‘rlarning ko‘pligi ayrim sharoitlarda mikrobiologik jarayonlar bilan bog‘liq bo‘lishi mumkin. Ularning sonini parazit individlar bilan qo‘shib, bitta zarar ko‘rsatkichi yaratish ekologik ma’noni yo‘qotadi.

Namuna olish va ekstraksiya protokollarining standartlashuvi hududiy monitoringda muhim. Ildiz va tuproq namunalarini alohida saqlash, bir xil namuna massasidan foydalanish va preparatlarni hujjatlashtirish turli mavsumlarda olingan natijalarni qiyoslash imkonini oshiradi.

Morfologik va molekulyar tekshiruvning birgalikda qo‘llanishi yaqin turlar o‘rtasidagi noaniqliklarni kamaytiradi. Biroq DNK bazasidagi noto‘g‘ri belgilangan

referenslar va sifatsiz sekvenslar xato identifikatsiyaga sabab bo‘lishi mumkin. Shu sababli voucher material bilan bog‘lanmagan genetik moslik yakuniy tashxisning yagona asosi bo‘la olmaydi.

Kasallik simptomlarini qayd etishda ildizning anatomik holati, tuproqdagi boshqa patogenlar va agroekologik stresslar nazorat qilinishi kerak. Ayniqsa qurg‘oqchil hududlarda ildizning rivojlanmasligi ko‘plab omillar natijasi bo‘lishi mumkin. Fitosanitar xulosa muqobil sabablar tekshirilgach chiqariladi.

Kurash chorasini tanlashdan avval tur identifikatsiyasi va zararlilik darajasini aniqlash zarur. Nazoratsiz kimyoviy ishlov tuproqning foydali organizmlariga ta’sir qilishi mumkin. Profilaktik sanitariya, sog‘lom ko‘chat materiali va kuzatuv asosidagi qarorlar ekologik jihatdan ehtiyotkor yondashuv hisoblanadi.

Kelgusidagi tadqiqotlar uchun har bir uchastkada nematoda zichligi, ildiz simptomlari va tuproq omillarini bir vaqtning o‘zida o‘lchash tavsiya etiladi. Bu ko‘rsatkichlar o‘rtasidagi statistik bog‘liqlik sababiy munosabatni avtomatik tasdiqlamaydi, biroq tajriba uchun asosli gipotezalar yaratadi.

Na’matakzorlarning fitosanitar xavf xaritasini tuzishda tasdiqlangan tur qaydlari bilan taxminiy xavf zonalari alohida qatlamlarda berilishi maqsadga muvofiq. Xarita o‘lchangan populyatsiya zichligi va takroriy kuzatuvlarga asoslanmaguncha, uni epidemik xavfning miqdoriy bashorati sifatida talqin qilib bo‘lmaydi.

Xulosa

Na’matak ildiz zonasidagi nematodalarning fitosanitar ahamiyatini baholashda turga mansublik, oziqlanish strategiyasi, ildiz to‘qimasi bilan aloqa, populyatsiya holati va patogenlik dalillari alohida tekshirilishi lozim.

Pratylenchus hamda *Ditylenchus* avlodlari vakillarining aniqlanishi maqsadli monitoringni asoslaydi, biroq zararlanish foizi va iqtisodiy zarar miqdorini tajribasiz belgilashga asos bo‘lmaydi.

Standart namuna olish, morfologik-molekulyar tasdiq, simptomlarning differensial diagnostikasi va takroriy kuzatuvlar na’matakzorlar uchun ilmiy asoslangan fitosanitar baholash tizimini shakllantiradi.

Foydalanilgan adabiyotlar

1. Jones J. T., Haegeman A., Danchin E. G. J., et al. Top 10 plant-parasitic nematodes in molecular plant pathology. Molecular Plant Pathology. 2013;14(9):946–961. DOI: 10.1111/mpp.12057.

2. Sikora R. A., Coyne D., Hallmann J., Timper P. (eds.). Plant Parasitic Nematodes in Subtropical and Tropical Agriculture. 3rd ed. CABI, 2018.

3. Perry R. N., Moens M. (eds.). Plant Nematology. 2nd ed. CABI, 2013.

4. Yeates G. W., Bongers T., de Goede R. G. M., Freckman D. W., Georgieva S. S. Feeding habits in soil nematode families and genera—an outline for soil ecologists. Journal of Nematology. 1993;25(3):315–331.

5. van den Hoogen J., Geisen S., Routh D., et al. Soil nematode abundance and functional group composition at a global scale. Nature. 2019;572:194–198. DOI: 10.1038/s41586-019-1418-6.

6. Nicol J. M., Turner S. J., Coyne D. L., den Nijs L., Hockland S., Maafi Z. T. Current nematode threats to world agriculture. In: Jones J. et al. (eds.), Genomics and Molecular Genetics of Plant-Nematode Interactions. Springer, 2011. P. 21–43.

7. Turopova M. B., Bekmurodov A. S. Surxondaryo viloyati yovvoyi dorivor o‘simliklarining nematodalari. Monografiya. 2025. 114 b. ISBN 978-9910-8497-9-4.

MAIN DIRECTIONS OF PREPARING FUTURE SPECIAL EDUCATORS FOR THE CORRECTION OF ATTENTION DEFICIT HYPERACTIVITY DISORDER IN CHILDREN

Khasanova Mashkhura Makhammadsidiqovna

Senior Lecturer, Department of Creative Pedagogy and Psychology, Namangan State Pedagogical Institute

Annotation

The article substantiates the main directions of training future special educators for the correction of attention deficit hyperactivity disorder (ADHD) in children. The content of the theoretical-methodological, diagnostic, correction-technological, communicative-partnership, personal-psychological and research-innovative directions is revealed, together with the conditions for their implementation in higher education.

Keywords

ADHD, special educator, professional training, correction, inclusive education.

Annotatsiya. Maqolada bo‘lajak maxsus pedagoglarni bolalardagi diqqat yetishmasligi va giperaktivlik sindromini (DYeGS) korreksiyalashga tayyorlashning asosiy yo‘nalishlari ilmiy asoslangan. Nazariy-metodologik, diagnostik, korreksion-texnologik, kommunikativ-hamkorlik, shaxsiy-psixologik va tadqiqot-innovatsion yo‘nalishlarning mazmuni hamda ularni oliy ta'lim jarayonida amalga oshirish shart-sharoitlari yoritilgan.

Kalit so‘zlar: DYeGS, maxsus pedagog, kasbiy tayyorgarlik, korreksiya, inklyuziv ta'lim.

Аннотация. В статье научно обоснованы основные направления подготовки будущих специальных педагогов к коррекции синдрома дефицита внимания и гиперактивности (СДВГ) у детей. Раскрыто содержание теоретико-методологического, диагностического, коррекционно-технологического, комму-

никативно-партнёрского, личностно-психологического и исследовательско-инновационного направлений, а также условия их реализации в вузе.

Ключевые слова: СДВГ, специальный педагог, профессиональная подготовка, коррекция, инклюзивное образование.

INTRODUCTION

Over the past years, inclusive education has become one of the priorities of state policy in Uzbekistan. The Law "On Education" (2020), Presidential Resolution No. PQ-4860 of 13 October 2020 and the ratification of the UN Convention on the Rights of Persons with Disabilities in 2021 have created a legal basis for supporting children with special educational needs in regular and special institutions. Consequently, the requirements for the professional competence of special educators (defectologists) have risen considerably.

Children with attention deficit hyperactivity disorder represent one of the most numerous groups that need such support. According to the systematic review by G. Polanczyk and co-authors (2007), the worldwide prevalence of the disorder among children and adolescents is about 5.3%. The international consensus statement of the World Federation of ADHD (Faraone et al., 2021) confirms that, without adequate help, the disorder is associated with school failure, conflicts in the family and among peers, and later social difficulties.

Practice shows, however, that the topic of ADHD often occupies only a few hours within general courses on developmental disorders. Graduates know the main symptoms but feel insecure when they need to observe a child, plan corrective work, talk to parents or keep calm in a conflict situation. This contradiction between the demands of practice and the actual readiness of graduates determines the relevance of the present study, whose aim is to identify and substantiate the main directions of preparing future special educators for the correction of ADHD in children.

LITERATURE REVIEW

Modern ideas about ADHD are largely based on the theory of R. A. Barkley (2015), who considers the disorder as a deficit of behavioral inhibition and self-regulation. A. Diamond (2013) describes executive functions - inhibitory control, working memory and cognitive flexibility - as the basis of goal-directed behavior and shows that they can be trained through specially organized activity. These works are important for pedagogy because they shift the focus from the child's "bad behavior" to the development of regulatory mechanisms.

A significant body of research is devoted to non-pharmacological interventions. W. Pelham and G. Fabiano (2008) classify behavioral classroom management and behavioral parent training as well-established treatments; the meta-analyses of G. Fabiano et al. (2009) and D. Daley et al. (2014) confirm their positive effect on child behavior and parenting. G. DuPaul and G. Stoner (2014) describe school-based strategies that combine changes in the learning environment with systems of reinforcement.

In the national scientific tradition, the correction of attention and behavior disorders has been considered within special psychology and neuropsychology, with emphasis on the formation of voluntary regulation in joint activity with an adult, going back to the cultural-historical theory of L. S. Vygotsky (1978). At the same time, the structure of university training of special educators for working with this particular category of children has not yet been sufficiently described.

MATERIALS AND METHODS

The study relied on the systemic, competency-based, activity-based and personality-oriented approaches. The following methods were applied: analysis and generalization of psychological, medical and pedagogical literature; analysis of normative documents on inclusive and special education; content analysis of the

curriculum and syllabi of the "Special Pedagogy" bachelor's program; pedagogical observation of students during teaching practice; and generalization of the author's experience of teaching at Namangan State University.

RESULTS

The analysis made it possible to distinguish six interrelated directions of training. Each of them has its own goal, forms a certain group of competencies and requires specific forms of teaching.

Theoretical-methodological direction.

Its goal is to form a scientific understanding of ADHD as a neurodevelopmental disorder of self-regulation and to replace everyday explanations such as "the child is spoiled" or "the parents are to blame". Students study the etiology, presentations and developmental course of the disorder and learn to distinguish evidence-based methods from popular but unproven ones. Problem lectures, analysis of scientific articles, concept maps and seminar discussions are the most suitable forms here.

Diagnostic direction.

This direction prepares students to recognize signs of ADHD during lessons and play, to record behavior in observable terms, to use rating scales and to analyze in which situations problem behavior appears and what maintains it. Students also learn the limits of their role: the clinical diagnosis is made by a physician, while the special educator gives a detailed psycho-pedagogical description. Laboratory classes, video observation and visits to psychological-medical-pedagogical commissions are used.

Correction-technological direction.

This is the core of the training. Students master the organization of a structured and predictable environment, visual schedules, short and clear instructions, division of tasks into steps, positive reinforcement and token systems, planned motor breaks, and games for developing attention, inhibitory control and working memory. The key product of

this direction is an individual correction program designed by the student. Case studies, workshops, simulations and micro-teaching are the leading methods.

Communicative-partnership direction.

The result of correction largely depends on the consistency of the adults around the child. Students learn to explain the nature of the disorder to parents without blaming them, to teach families simple behavioral strategies and to coordinate their actions with teachers, psychologists and doctors. Role plays, mock consultations and joint projects with practice institutions serve this purpose.

Personal-psychological direction.

Work with children with ADHD demands patience, emotional stability and the ability to remain calm during conflicts. Psychological trainings, reflective diaries, supervision and group discussions help students develop tolerance and empathy and protect them from early professional burnout.

Research-innovative direction.

Knowledge about ADHD is renewing rapidly, so a specialist must be able to search for new information, critically evaluate methods and digital tools, and study the effectiveness of his or her own practice. Course and graduation papers, student research circles and small-scale action research are the main forms.

The content analysis of the curriculum showed that the material needed for these directions is scattered across several disciplines. The table below shows how existing courses can support each direction and in which year of study it is most appropriate to place the main emphasis.

Table 1

Interdisciplinary support of the directions of training

Direction	Supporting disciplines	Year of study
Theoretical-methodological	Special psychology, fundamentals of neuropathology, introduction to special pedagogy	1st–2nd
Personal-psychological	General psychology, pedagogical communication, psychological training	1st–4th
Diagnostic	Psychodiagnostics, psychology of children with developmental disorders	2nd–3rd
Correction-technological	Methods of correctional work, inclusive education, special methods of teaching	3rd
Communicative-partnership	Family pedagogy, teaching practice	3rd–4th
Research-innovative	Methodology of pedagogical research, course and graduation papers	3rd–4th

DISCUSSION

During teaching practice we observed that students who studied diagnostic and corrective techniques only theoretically had difficulties when facing real children, whereas those who had analyzed cases and rehearsed techniques in simulations adapted faster and planned sessions more purposefully. This agrees with the activity-based approach: professional abilities are formed in the student's own activity, not in listening alone. Integrative tasks proved especially useful. For example, students receive the following case: "Aziz, a seven-year-old first-grader, leaves his seat several times during each lesson, shouts out answers and rarely finishes written tasks. The teacher reprimands him, but nothing changes." They have to describe the behavior in observable terms, determine when it occurs most often, explain why reprimands do not work and propose measures - seating near the teacher, a visual lesson plan, short portions of written work,

agreed non-verbal signals, motor breaks and a daily report card linking school and home. One such task simultaneously develops the diagnostic, correction-technological and communicative-partnership directions. The effective implementation of the directions requires a number of pedagogical conditions: updating course content with modern data on ADHD; the predominance of interactive and practice-oriented methods; partnership with inclusive schools, special preschools and psychological-medical-pedagogical commissions; a bank of cases, video materials and methodological recommendations in the Uzbek language; and regular assessment of competencies with rubrics and portfolios.

CONCLUSION AND PROPOSALS:

Preparing future special educators for the correction of ADHD in children is a complex process that cannot be reduced to a few lectures about symptoms. The study identified six directions of training - theoretical-methodological, diagnostic, correction-technological, communicative-partnership, personal-psychological and research-innovative - and showed how existing disciplines can support each of them across the four years of study. Based on the results, it is proposed to introduce an elective course on the psycho-pedagogical correction of ADHD, to coordinate the content of related disciplines, to include integrative case tasks in teaching practice and to develop methodological recommendations for students and practicing specialists. Further research will be devoted to criteria for evaluating the formation of each direction and to experimental verification of the proposed system.

REFERENCES:

1. Law of the Republic of Uzbekistan "On Education" No. ZRU-637 of 23.09.2020.
2. Resolution of the President of the Republic of Uzbekistan No. PQ-4860 of 13.10.2020 "On measures to further improve the system of education for children with special educational needs".

3. Barkley R. A. (Ed.) Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment. 4th ed. – New York: Guilford Press, 2015.

4. Daley D. et al. Behavioral interventions in attention-deficit/hyperactivity disorder: A meta-analysis of randomized controlled trials across multiple outcome domains // Journal of the American Academy of Child & Adolescent Psychiatry. 2014. Vol. 53(8). P. 835–847.

5. Diamond A. Executive functions // Annual Review of Psychology. – 2013. – Vol. 64. – P. 135–168.

6. DuPaul G. J., Stoner G. ADHD in the Schools: Assessment and Intervention Strategies. 3rd ed. – New York: Guilford Press, 2014.

7. Fabiano G. A. et al. A meta-analysis of behavioral treatments for attention-deficit/hyperactivity disorder // Clinical Psychology Review. – 2009. – Vol. 29(2). – P. 129–140.

8. Faraone S. V. et al. The World Federation of ADHD International Consensus Statement: 208 evidence-based conclusions about the disorder // Neuroscience & Biobehavioral Reviews. – 2021. – Vol. 128. – P. 789–818.

9. Pelham W. E., Fabiano G. A. Evidence-based psychosocial treatments for attention-deficit/hyperactivity disorder // Journal of Clinical Child & Adolescent Psychology. – 2008. – Vol. 37(1). – P. 184–214.

10. Polanczyk G. et al. The worldwide prevalence of ADHD: A systematic review and metaregression analysis // American Journal of Psychiatry. – 2007. – Vol. 164(6). – P. 942–948.

11. Vygotsky L. S. Mind in Society: The Development of Higher Psychological Processes. – Cambridge, MA: Harvard University Press, 1978.

Economic Growth, Small-Business Employment and Poverty Reduction in Uzbekistan: An ARDL Bounds-Testing Analysis of Real Household Income, 2010–2025

Djurayev Turabay

Department of Econometrics, Tashkent State University of Economics, Tashkent, Uzbekistan Associate Professor

turabek1948@gmail.com

Abstract

Poverty in Uzbekistan fell from 17.0% in 2021 to 5.8% in 2025, while real income per capita rose 3.5-fold since 2010. This thesis asks whether the expansion of small business, a central instrument of the national poverty agenda, explains this income growth once aggregate growth is controlled for. Using official 2010–2025 data, an ARDL bounds test confirms a long-run relationship ($F = 6.98$). The long-run elasticity of real income with respect to real GDP per capita is 1.58, whereas the small-business share of employment has no significant long-run effect (+0.17% per percentage point, 95% CI ±1.90%). Deviations from equilibrium close within about one year. Poverty responds strongly to income growth (elasticity −4.0), and conditional projections indicate a poverty rate of about 3% in 2027 under baseline growth. Policy should therefore target productivity and job quality in small firms rather than their share of employment.

Keywords

poverty reduction; real household income; small business; growth elasticity of poverty; ARDL bounds test; Uzbekistan.

Introduction

Since official poverty measurement began in 2021, Uzbekistan has cut its poverty rate from 17.0% to 5.8% in 2025 [1]. Small business is widely regarded as a driver of

this progress: it accounts for three quarters of employment [2], and the cross-country literature links entrepreneurship and SMEs to growth and poverty reduction [3, 4]. Yet Beck et al. [3] find that SMEs accompany, rather than cause, growth and poverty reduction, and the composition of growth matters for the poor [5, 6]. In Uzbekistan the small-business share of employment declined from 78.2% in 2016 to 73.9% in 2024, precisely when incomes rose fastest. The aim of this thesis is to separate the contributions of aggregate growth and of small-business employment to real household income and, through income, to poverty. We test two hypotheses: (H1) the small-business share of employment has a positive long-run effect on real income per capita after controlling for real GDP per capita; (H2) poverty is highly elastic to real income growth.

Data and methods

All data are annual official statistics of the National Statistics Committee for 2010–2025 (T = 16): total income per capita and its real growth rate, the small-business share of employment SB_t [2], real GDP per capita growth and the investment-to-GDP ratio, and the poverty rate for 2021–2025 [1]. Real income and real GDP per capita are chain-linked indices converted to 2025 prices. KPSS tests indicate that the variables are I(1) or borderline I(0), and none is I(2), which justifies the ARDL bounds approach. Among five specifications, the AIC selects ARDL(1,0,0); adding investment or extra lags does not improve fit. The model and its long-run coefficients are:

$$\ln Y_t = \alpha_0 + \varphi \ln Y_{t-1} + \beta_1 SB_t + \beta_2 \ln G_t + \varepsilon_t, \quad \theta_j = \frac{\beta_j}{1-\varphi} \tag{1}$$

where Y_t is real income and G_t real GDP per capita. Standard errors are Newey–West, and long-run standard errors use the delta method. Short-run dynamics follow the error-correction model:

$$\Delta \ln Y_t = \delta_0 + \delta_1 \Delta SB_t + \delta_2 \Delta \ln G_t + \lambda ECT_{t-1} + u_t \tag{2}$$

Poverty P_t is linked to income through the growth elasticity of poverty, which is used for conditional projections to 2027 with 20,000 bootstrap draws of parameters and residuals:

$$\varepsilon_P = \frac{\Delta \ln P_t}{\Delta \ln Y_t}, \quad P_{t+h} = P_t \cdot exp[\varepsilon_P(\ln Y_{t+h} - \ln Y_t)] \tag{3}$$

Results

The bounds F-statistic of 6.98 exceeds the 1% upper critical value of Pesaran et al. [10] (6.36 for k = 2) and remains above the small-sample bounds of Narayan, so a long-run relationship exists. Table 1 reports the estimates.

Table 1. Determinants of real income per capita, 2011–2025

Variable	ARDL(1,0,0), eq. (1)	Long run, θ	ECM, eq. (2)
ln Y(t−1)	0.291*** (0.109)	—	—
Small-business share of employment, %	0.001 (0.007)	0.002 (0.010)	−0.016** (0.008) [a]
ln real GDP per capita	1.124*** (0.195)	1.584*** (0.046)	1.516* (0.785) [a]
ECT(t−1)	—	—	−0.846*** (0.066)
R^2; N	0.993; 15	—	0.784; 14

Growth, not the employment share, drives income. A 1% rise in real GDP per capita raises real income per capita by 1.58% in the long run, so incomes have grown faster than output, consistent with rising labour earnings and transfers. The small-business share of employment is insignificant in the long run: a one-percentage-point increase changes income by 0.17% with a 95% confidence interval of −1.72% to +2.07%. In the short run its coefficient is even negative (−0.016, p = 0.046), reflecting the 2017–2020 period when the share fell while formal wage employment and incomes rose. H1 is therefore rejected. The error-correction term of −0.85 implies that about 85% of any deviation from the long-run path is closed within a year. Out of sample (2018–

2025), the ARDL does not outperform a drift benchmark in one-step forecasts (RMSE 0.079 vs 0.050), owing to the volatile income growth of 2017–2020, so projections are presented as conditional scenarios with wide intervals.

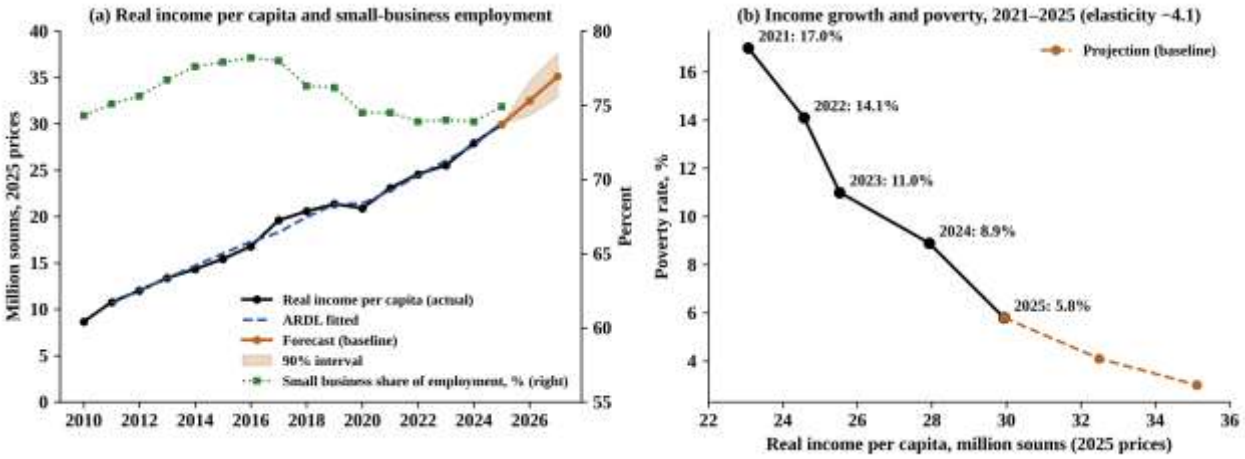


Figure 1. Real income, small-business employment and poverty in Uzbekistan

Poverty is highly responsive to income. Between 2021 and 2025 each 1% increase in real income per capita reduced the poverty rate by about 4.0% (log-log slope −4.00, SE 0.37, R^2 = 0.98; arc elasticity −4.13), well above typical cross-country estimates and consistent with a large population close to the poverty line. H2 is supported. With real GDP per capita growing at the 2021–2025 average of 4.9%, the median projection of real income per capita reaches 32.5 million soums in 2026 and 35.1 million in 2027 (90% interval 32.9–37.6 million). The implied poverty rate falls to 4.1% in 2026 and 3.0% in 2027; under a low-growth scenario (2.5%) it would be 3.8% in 2027, and under a high-growth scenario (6.5%) 2.5% (Figure 1).

Conclusion

Uzbekistan's rapid poverty reduction has been driven by broad-based income growth tied to aggregate output, not by a rising share of small business in employment, which has in fact declined. Because poverty is about four times as elastic as income, sustaining real GDP per capita growth of at least 4–5% remains the most powerful anti-

poverty instrument. Small-business policy should shift from expanding the number of small-firm jobs to raising their productivity, formality and wages, for example through access to credit, digital tax administration and support for firm growth beyond the micro scale. As the remaining poor move closer to the poverty line, the elasticity is likely to decline, so targeted social assistance will become increasingly important. With only 16 annual and 5 poverty observations, these estimates should be revisited as longer and regional series become available.

References

[1] National Statistics Committee of the Republic of Uzbekistan. Poverty rate (2.03.01.0042) [Internet]. SIAT; 2026 [cited 2026 Oct 29]. Available from: https://api.siat.stat.uz/media/uploads/sdmx/sdmx_data_3495.pdf

[2] National Statistics Committee of the Republic of Uzbekistan. Share of small businesses in total employment [Internet]. SIAT; 2026 [cited 2026 Oct 29]. Available from: https://api.siat.stat.uz/media/uploads/sdmx/sdmx_data_274.pdf

[3] Beck T, Demirguc-Kunt A, Levine R. SMEs, growth, and poverty: Cross-country evidence. Journal of Economic Growth. 2005;10(3):199–229.

[4] Naudé W. Entrepreneurship, developing countries, and development economics: new approaches and insights. Small Business Economics. 2010;34(1):1–12.

[5] Loayza NV, Raddatz C. The composition of growth matters for poverty alleviation. Journal of Development Economics. 2010;93(1):137–151.

[6] Ravallion M, Datt G. How important to India's poor is the sectoral composition of economic growth? World Bank Economic Review. 1996;10(1):1–25.

IMPROVING THE ORGANIZATIONAL AND ECONOMIC MECHANISM OF CUSTOMS ADMINISTRATION TO SUPPORT FOOD SECURITY

Matkarimova Iroda Muxtorovna
Staff member of the Customs Institute
e-mail: irodamatkarimova5259@gmail.com

Abstract

This study develops a proposal for improving the organizational and economic mechanism of customs administration in support of food security in Uzbekistan. Its empirical basis is a reassessment of six regression equations covering food trade, declarations and trading enterprises, with 44 observations per equation. Holm adjustment across 24 slopes retains four associations under conservative probability bounds and five under approximate t-derived probabilities. The customs-value association with food imports remains supported; the negative import-relief result is precision-sensitive. These findings inform the economic component of the mechanism but do not measure the effect of interagency coordination. The proposed improvement links targeted fiscal evaluation, verified agency decisions, a common consignment record and feedback from operational and compliance indicators. A prospective pilot is required to establish its effects on clearance performance and food security.

Keywords

customs administration; food security; organizational and economic mechanism; interagency coordination; fiscal relief; performance evaluation.

An organizational and economic mechanism of customs administration should connect policy objectives with instruments, institutional responsibilities and measurable results. For food consignments, this means aligning fiscal decisions and clearance procedures with lawful supply and justified safety controls. Customs receipts and

declaration counts show the scale of activity but cannot by themselves establish how well the mechanism works. The study therefore asks how the economic relationships observed in customs data can inform a management arrangement whose operational results can be independently evaluated.

The objective is to develop an improvement proposal that links economic instruments, interagency coordination, information exchange and corrective feedback. The economic component concerns payments, valuation, duty and relief. The organizational component concerns the allocation of decisions, exchange of verified evidence and coordination of processing stages. FAO's framework distinguishes availability, access, utilization and stability [2]; trade and clearance indicators capture only part of that wider food-security objective. The mechanism should consequently monitor both the movement of food and compliance, while household access and nutritional outcomes require separate evidence.

The six outcome variables are food imports, food exports, total declarations, import declarations, export declarations and the number of trading enterprises. Every equation reports 44 observations and five estimated parameters: an intercept and four predictors—customs payments, customs value, import duty and fiscal relief. The general specification is:

$$Y_{jt} = \alpha_j + \beta_{1j}P_t + \beta_{2j}V_t + \beta_{3j}D_t + \beta_{4j}R_t + \varepsilon_{jt}. \quad (1)$$

Here j identifies an outcome, while P, V, D and R denote the four predictors. With common regressors, mvreg produces the same equation-level coefficients and standard errors as separate ordinary least squares regressions and additionally estimates cross-equation covariance [3]. The interpretation here concerns conditional associations, not an identified causal intervention.

The analytical window is described as 2014–2025, or 48 quarters, whereas the outcome and estimation tables contain 44 observations. Exact estimation dates remain

unspecified. Fiscal descriptives are described as logarithmic, but the transformation base, original monetary units and their use in estimation are not fully documented. Coefficients are retained on the reported scale without interpretation as dollar changes or elasticities. Original dated observations and residuals are needed to verify stationarity, serial dependence and other diagnostics.

Holm adjustment [4] covers all 24 slopes, excluding intercepts. For probabilities reported to three decimals, a conservative upper bound $p^{+} = \min(1, p_{printed} + 0.001)$ accommodates rounding or truncation; a printed zero is assigned 0.001. A sensitivity calculation reconstructs approximate two-sided probabilities from rounded t statistics with $44 - 5 = 39$ residual degrees of freedom. This procedure reassesses existing estimates rather than fitting new regressions.

The reported R^2 values are 0.9225 for food imports and 0.7276 for food exports. Administrative equations also have high fit, ranging from 0.9028 for enterprises to 0.9650 for export declarations. These statistics describe in-sample relationships. They do not indicate that customs administration generated a corresponding percentage improvement in food security. Joint determination of payments, valuation and trade, together with shared trends, remains a competing explanation.

Across the complete family, eight slopes meet the nominal five percent criterion; four meet the conservative Holm criterion and five meet the approximate t-derived criterion. Table 1 reports every food-trade slope. Figure 1 includes all 24 test statistics so that the wider family used for adjustment remains visible.

The strongest retained food-trade association concerns customs value and imports: $\beta = 605.641$, with a reported, unadjusted 95 percent confidence interval of 329.951–881.330 and a conservative Holm bound of 0.024. Its interpretation is limited by the valuation relationship itself. Customs value can change with quantities, prices and composition; the coefficient alone cannot establish better access to food or a more

effective clearance process. Fiscal relief has a negative import coefficient of −206.160, with an unadjusted interval of −331.328 to −80.991 and nominal p = 0.002. The conservative adjusted upper bound is 0.060, compared with approximately 0.038 reconstructed from the t statistic. This precision-sensitive result does not establish that relief substitutes domestic production for food imports. Evidence on what received relief, subsequent production and the relevant timing would be required.

For exports, the customs-payments coefficient is nominally significant (β = 198.686; p = 0.049), but its conservative adjusted bound is 0.850. No food-export slope meets either adjusted criterion. The remaining conservative findings concern payments and relief in export declarations, and relief in enterprise numbers. They describe administrative associations, not verified formalization of previously informal trade. The reported payment–duty correlation of 0.984 also warrants scrutiny of collinearity on the actual estimation sample.

Table 1: Food-trade coefficients and multiple-testing adjustment

Outcome and predictor	Reported β	Reported p	Holm upper bound
Food imports Customs payments	187.476	0.076	1.000
Food imports Customs value	605.641	<0.001	0.024
Food imports Import duty	35.181	0.786	1.000
Food imports Fiscal relief	-206.160	0.002	0.060
Food exports Customs payments	198.686	0.049	0.850
Food exports Customs value	137.405	0.295	1.000
Food exports Import duty	-117.054	0.343	1.000
Food exports Fiscal relief	-28.877	0.626	1.000

N = 44 per equation. Holm bounds cover all 24 slopes, not only the eight displayed. Printed p = 0.000 is shown as <0.001; conservative calculation uses 0.001. Coefficients retain the reported scale. Source: [1] and calculations.



Figure 1 Reported t statistics across the six equations. Stars identify conservative Holm bounds ≤0.05 within the 24-test family. Colors indicate statistical direction, not causal effect size. Source: [1] and calculations.

Improving the organizational and economic mechanism

The empirical results identify limits to the economic interpretation of the mechanism. They do not directly evaluate organizational coordination, since the estimated equations contain no measures of document duplication, agency handoff time or safety compliance. The improvement proposal therefore adds a management layer that can be tested at consignment level. It links instrument selection to responsibility for execution, records what happened and uses measured outcomes to revise procedures. Table 2 sets out the proposed components and their evaluation measures.

Component	Management instrument	Evaluation measure
Economic	Relief eligibility and beneficiary register	Eligibility compliance and documented fiscal cost
Organizational	Verified agency decisions and reason-coded requests	Unnecessary repeat requests per eligible consignment
Information	Linked consignment records and timestamps	Median and P90 referral-to-decision time

Feedback	Independent audit and recorded process review	Non-compliant audited cases / all audited cases

Table 2: Proposed components of the organizational and economic mechanism

Author's proposal, not measured results. P90 is the 90th percentile. Rules for eligibility and unnecessary requests must be defined before the pilot. Audit sampling must remain comparable over time.

For the economic component, relief should be linked to defined goods, beneficiaries, duration and intended outcomes. Evaluation should trace actual use and distinguish resource savings from tax transfers. The negative import coefficient does not establish that relief caused import substitution. For the organizational component, each competent authority should remain responsible for its decision. Customs could reuse a verified decision only when its scope, validity and legal conditions cover the consignment; additional requests should carry a documented reason.

The information component should link declarations, certificates, agency decisions and release events through a common consignment identifier. A process coordinator would then be able to locate a delay and assign responsibility for resolving missing information. Reuse should be blocked when a decision is expired, incomplete or inapplicable. This arrangement is intended to reduce avoidable repetition while preserving the evidence needed for regulatory control. Neither faster release nor a higher reuse rate should override laboratory methods or a competent authority's safety decision.

WTO provisions on risk management, perishable goods and agency cooperation, together with SPS principles of scientific justification, provide international design benchmarks [5,6]. A pilot should define eligible consignments, comparison groups and indicators before implementation. It should examine pre-intervention patterns and account for seasonality, product composition and concurrent reforms. Outcomes should include release-time distributions and independently audited compliance; detection rates

from targeted inspections alone would be affected by selection. The results would guide a documented decision to retain, modify or discontinue the process.

Conclusion

The proposed improvement brings economic instruments, institutional responsibilities and feedback into one evaluable management arrangement. The six-equation analysis supports a customs-value association with food imports, while the import-relief finding is sensitive to reporting precision and export associations do not survive adjustment. These findings delimit the economic evidence; the organizational proposal requires its own pilot evaluation. The management contribution is a mechanism in which fiscal decisions, agency coordination and corrective action are assessed through explicit measures. Dated observations, reconciled definitions and verified diagnostics remain necessary for stronger econometric conclusions. No national saving or causal improvement in food security is claimed.

References

1. FAO. An introduction to the basic concepts of food security. 2008. Foundational conceptual guide. https://www.fao.org/docrep/013/al936e/al936e00.pdf.

2. StataCorp. mvreg—Multivariate regression. Multivariate Statistics Reference Manual. https://www.stata.com/manuals/mvmvreg.pdf.

3. Holm S. A simple sequentially rejective multiple test procedure. Scandinavian Journal of Statistics. 1979;6(2):65–70. Foundational statistical method. https://www.jstor.org/stable/4615733.

4. World Trade Organization. Agreement on Trade Facilitation. Articles 7 and 8. https://www.wto.org/English/docs_e/legal_e/tfa-nov14_e.htm.

5. World Trade Organization. Agreement on the Application of Sanitary and Phytosanitary Measures. Articles 2 and 5. https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm.

METHODS FOR ANALYZING PCR RESULTS AND IDENTIFYING DIAGNOSTIC SIGNALS USING INFORMATION TECHNOLOGIES

PhD Nodira Xolboyeva Xabibdjdon qizi
xalbaevanodirabegim@gmail.com

Abstract

This paper reviews literature on methods for processing real-time polymerase chain reaction (PCR) results and assessing diagnostically relevant signals using information technology. It addresses the storage of raw fluorescence data, baseline correction, analysis of amplification curves and quantification cycle (Cq) values, and verification of control results. A five-stage functional framework is proposed, covering data entry through electronic report generation. The importance of documenting analysis parameters and distinguishing calculated values from diagnostic interpretation is emphasized. The work is based on a literature review; the diagnostic performance of the proposed framework has not been experimentally evaluated.

Keywords

PCR, information technology, amplification curve, fluorescence signal, Cq, quality control, RDML, data processing.

AXBOROT TEXNOLOGIYALARI YORDAMIDA PZR NATIJALARINI TAHLIL QILISH VA DIAGNOSTIK SIGNALLARNI ANIQLASH USULLARI

PhD Nodira Xolboyeva Xabibdjdon qizi
xalbaevanodirabegim@gmail.com

Annotatsiya. Tezisda real vaqt rejimidagi polimeraza zanjir reaksiyasi (PZR) natijalarini axborot texnologiyalari yordamida qayta ishlash va diagnostik ahamiyatga ega signallarni baholash usullari adabiyotlar asosida ko‘rib chiqiladi. Dastlabki fluoresans ma’lumotlarini saqlash, fonni tuzatish, amplifikatsiya egri chizig‘i va Cq

ko‘rsatkichini tahlil qilish hamda nazorat natijalarini tekshirish masalalari yoritiladi. Ma’lumotlarni kiritishdan elektron hisobot tayyorlashgacha bo‘lgan besh bosqichli funksional tuzilma taklif etiladi. Tahlil parametrlarini hujjatlashtirish va hisoblangan ko‘rsatkichni diagnostik talqindan farqlash zarurligi asoslanadi. Ish adabiyotlar tahliliga tayangan; taklif etilgan tuzilmaning diagnostik samaradorligi tajribada baholanmagan.

Kalit so‘zlar: PZR, axborot texnologiyalari, amplifikatsiya egri chizig‘i, fluoresans signali, Cq, sifat nazorati, RDML, ma’lumotlarni qayta ishlash.

Kirish

Polimeraza zanjir reaksiyasi (PZR) biologik namunadagi muayyan nuklein kislota ketma-ketligini aniqlash va ko‘paytirishga asoslangan molekulyar tahlil usulidir. Uning real vaqt rejimidagi shaklida amplifikatsiya jarayoni davomida hosil bo‘ladigan fluoresans signali qayd etiladi. Ushbu ma’lumotlarni qayta ishlashda axborot texnologiyalaridan foydalanish natijalarni tartibli saqlash, hisoblash jarayonlarini avtomatlashtirish va namunalar o‘rtasidagi farqlarni baholash imkonini beradi [1, 2].

Real vaqt rejimidagi PZR natijalarini tahlil qilish faqat signal mavjudligini qayd etish bilan cheklanmaydi. Amplifikatsiya egri chizig‘ining shakli, fon signali, takroriy o‘lchovlarning mosligi hamda nazorat namunalarining natijalari birgalikda ko‘rib chiqilishi kerak. Sikl chegarasi ko‘rsatkichi ham qo‘llangan test tizimi va tahlil sharoitlari doirasida talqin qilinadi. Shu sababli diagnostik ahamiyatga ega signalni texnik shovqin yoki nospetsifik reaksiyadan farqlash ma’lumotlarni qayta ishlashning muhim vazifasidir [1, 3].

Tezisning maqsadi — real vaqt rejimidagi PZR ma’lumotlarini raqamli qayta ishlash, signalni baholash va natijalarni tekshirish usullarini adabiyotlar asosida tizimlashtirish. Ishda MIQE tavsiyalari, Cq talqini va PZR ma’lumotlarini almashishga bag‘ishlangan manbalar mazmunan qiyoslandi [1–6]. Tahlil sifat xarakteriga ega bo‘lib, tizimli adabiyotlar sharhi yoki mustaqil laboratoriya tadqiqoti hisoblanmaydi.

Asosiy qism

Real vaqt rejimidagi PZR natijalarini axborot texnologiyalari yordamida tahlil qilish ma’lumotlarni olish, sifatini tekshirish, signal xususiyatlarini ajratish va natijalarni talqin qilish bosqichlarini qamrab oladi. Bunda dastlabki fluoresans o‘lchovlarini saqlash muhim: faqat yakuniy raqamli ko‘rsatkichga tayanish amplifikatsiya jarayonidagi ayrim xatolarni aniqlash imkonini cheklaydi. MIQE 2.0 tavsiyalarida ham dastlabki ma’lumotlar, fonni tuzatish usuli va qo‘llangan dastur haqidagi axborotni ko‘rsatishga e’tibor qaratilgan [1].

Dastlabki qayta ishlashda namuna, fluoresans kanali va sikllar bo‘yicha o‘lchovlar mosligi tekshiriladi. Amplifikatsiyaga bog‘liq bo‘lmagan fonni noto‘g‘ri tuzatish egri chiziq shakli va hisoblash natijalariga ta’sir qilishi mumkin. Shuning uchun dastlabki o‘lchovlar va bajarilgan o‘zgarishlar saqlanishi zarur [1].

Signalni baholashning muhim ko‘rsatkichlaridan biri — kvantifikatsiya sikli (Cq). Chegaraviy usulda u fluoresans signali belgilangan chegaraga yetadigan siklni ifodalaydi. Chegara amplifikatsiyaning eksponensial bosqichiga mos kelishi kerak. Cq qiymati asbob, reagent, tahlil algoritmi va reaksiya samaradorligiga bog‘liq bo‘lgani sababli turli sharoitlarda olingan qiymatlarni kalibrlashsiz bevosita taqqoslash yoki barcha testlar uchun yagona diagnostik chegara belgilash asosli emas [1, 3].

Sifat nazoratida musbat va manfiy nazoratlar, takroriy o‘lchovlar mosligi hamda noodatiy qiymatlar tekshiriladi. Dastur qo‘shimcha tekshiruv talab qiladigan holatlarni alohida belgilashi lozim. Nazorat natijalari va chetga chiquvchi qiymatlarni qayta ishlash usulini bayon qilish MIQE tavsiyalarida ham ko‘rsatilgan [1, 2, 4].

Ma’lumotlarni yagona tuzilishda saqlash namuna identifikatori, tekshirilayotgan nishon, kanal va sikllar bo‘yicha o‘lchovlar orasidagi aloqani saqlaydi. MIQE 2.0 tavsiyalarida dastlabki ma’lumotlarni almashishda RDML kabi formatlardan foydalanish ko‘rsatilgan [1]. RDML tuzilmasi va unga mos dasturiy vositalar natijalarni

qayta ishlash hamda almashishni standartlashtirishga qaratilgan [5, 6].

Ko‘rib chiqilgan manbalar asosida dasturiy tahlil vazifalari besh funksional bosqichga ajratildi (1-jadval). Har bir bosqichda keyingi hisoblash uchun tayyorlanadigan ma’lumot va tekshiruv natijasi qayd etiladi.

1-jadval. PZR natijalarini raqamli tahlil qilishning funksional bosqichlari

Bosqich	Dasturiy vazifa	Qayd etiladigan natija
Ma’lumotlarni kiritish	Namuna, kanal va sikl yozuvlarining mosligini tekshirish	Tartiblangan ma’lumotlar
Dastlabki qayta ishlash	Fonni tuzatish, yetishmayotgan qiymatlarni belgilash	Qayta ishlangan signal va bajarilgan amallar
Belgilarni ajratish	Egri chiziq shakli, signal o‘sishi va Cq ni qayd etish	Reaksiya xususiyatlari tavsifi
Sifat nazorati	Nazoratlar va takroriy o‘lchovlar mosligini tekshirish	Qo‘shimcha tekshiriladigan holatlar
Hisobot tayyorlash	Natija, parametrlar va ogohlantirishlarni birlashtirish	Tekshiriladigan elektron hisobot

Manba: [1–6] asosida muallif tomonidan tizimlashtirilgan. Jadval tajribada tasdiqlangan algoritm natijalarini ifodalamaydi.

Dasturiy tizimda hisoblash natijasi bilan yakuniy diagnostik talqinni alohida qayd etish maqsadga muvofiq. Masalan, dastur signalning belgilangan chegaraga yetganini aniqlashi mumkin, ammo bu holatning diagnostik ahamiyati tegishli test mezonlari va nazorat natijalari bilan baholanadi. Cq qiymatini alohida holda talqin qilish o‘rniga, amplifikatsiya egri chizig‘i hamda tahlil sharoitlarini birgalikda ko‘rib chiqish zarur [1, 3].

Taklif etilayotgan yondashuvda tahlil parametrlarini qayd etish ham muhimdir. Hisobotda dastur versiyasi, fonni tuzatish usuli, Cq ni aniqlash tartibi va natijaga kiritilgan qo‘lda tuzatishlar saqlanishi kerak. Bu ma’lumotlar hisoblash jarayonining qayta tekshirilishiga xizmat qiladi va avtomatlashtirishning amaliy qiymatini oshiradi [1].

Muhokama

Taklif etilgan tuzilmaning amaliy yo‘nalishi hisoblash bosqichlarini hujjatlashtirish va shubhali holatlarni mutaxassis ko‘rib chiqishi uchun ajratishdan iborat. Dastur natijani qaysi parametrlar asosida hisoblagani saqlansa, qayta tahlilda tafovut sabablarini tekshirish mumkin. Bu vazifa yakuniy ko‘rsatkichni hisoblash bilan cheklanadigan yondashuvga nisbatan kengroq nazoratni nazarda tutadi [1, 4].

Keyingi bosqich uchun mashinaviy o‘rganish asosida egri chiziqlarni tasniflash imkoniyatini tekshirish taklif etiladi. Bunda mutaxassislar tomonidan belgilangan ma’lumotlar, o‘qitish va mustaqil sinov to‘plamlari hamda xato tasniflangan holatlarning alohida tahlili ko‘zda tutilishi lozim. Ushbu tezisda model ishlab chiqilmagan; mashinaviy o‘rganishning afzalligi yoki diagnostik aniqligi haqida natija taqdim etilmaydi. Ishning cheklovi — funksional tuzilmaning laboratoriya ma’lumotlarida sinovdan o‘tkazilmaganidir. Uning samaradorligini baholash uchun mustaqil ma’lumotlar to‘plamida mutaxassis xulosalari bilan moslikni, xatolar sabablarini va turli tahlil sharoitlaridagi barqarorlikni tekshirish zarur. Shu sababli vaqt tejalishi yoki diagnostik aniqlik oshishi haqida miqdoriy xulosa chiqarilmaydi.

Xulosa

Axborot texnologiyalari real vaqt rejimidagi PZR ma’lumotlarini tartiblash, qayta ishlash va tahlil bosqichlarini hujjatlashtirishga xizmat qiladi. Diagnostik ahamiyatga ega signalni baholashda Cq ko‘rsatkichi amplifikatsiya egri chizig‘i, nazorat natijalari va tegishli test mezonlari bilan birgalikda talqin qilinishi lozim. Tezisda

tizimlashtirilgan besh bosqichli tuzilma ma’lumotlarni kiritishdan elektron hisobotgacha bo‘lgan vazifalarni birlashtiradi. Uning amaliy samaradorligi keyingi tajribaviy tekshiruvlarda baholanishi kerak.

Foydalanilgan adabiyotlar

[1] Bustin S. A., Ruijter J. M., van den Hoff M. J. B. et al. MIQE 2.0: Revision of the Minimum Information for Publication of Quantitative Real-Time PCR Experiments Guidelines // Clinical Chemistry. — 2025. — Vol. 71, № 6. — P. 634–651. — DOI: 10.1093/clinchem/hvaf043.

[2] Bustin S. A., Benes V., Garson J. A. et al. The MIQE Guidelines: Minimum Information for Publication of Quantitative Real-Time PCR Experiments // Clinical Chemistry. — 2009. — Vol. 55, № 4. — P. 611–622. — DOI: 10.1373/clinchem.2008.112797.

[3] Ruiz-Villalba A., Ruijter J. M., van den Hoff M. J. B. Use and Misuse of Cq in qPCR Data Analysis and Reporting // Life. — 2021. — Vol. 11, № 6. — Article 496. — DOI: 10.3390/life11060496.

[4] Bustin S. A., Beaulieu J.-F., Huggett J. et al. MIQE précis: Practical implementation of minimum standard guidelines for fluorescence-based quantitative real-time PCR experiments // BMC Molecular Biology. — 2010. — Vol. 11. — Article 74. — DOI: 10.1186/1471-2199-11-74.

[5] Lefever S., Hellemans J., Pattyn F. et al. RDML: Structured language and reporting guidelines for real-time quantitative PCR data // Nucleic Acids Research. — 2009. — Vol. 37, № 7. — P. 2065–2069. — DOI: 10.1093/nar/gkp056.

[6] Ruijter J. M., Lefever S., Anckaert J. et al. RDML-Ninja and RDMLdb for standardized exchange of qPCR data // BMC Bioinformatics. — 2015. — Vol. 16. — Article 197. — DOI: 10.1186/s12859-015-0637-6.

HIGH-TEMPERATURE ANNEALING OF ITO (In_2O_3: Sn) OXIDE FILMS IN VACUUM AND NEUTRAL ENVIRONMENTS

Muzafarova Sultanpasha Anvarovna
Research Institute of Semiconductor Physics and Microelectronics at the National University of Uzbekistan;
Yuldashev Abrorjon Abduvasitovich
Nurmatova Sevara Ravshan qizi
Fergana State University, Fergana

Abstract

ITO (In_2O_3:Sn) films, synthesized under optimal conditions at 550°C for 0.75 hours, exhibited a transparency of over 90%, a surface resistance of 300 Ω/sq, and a resistivity (ρ) of 9.4×10^{-3} Ω·cm. High-temperature annealing was employed to reduce the resistance of these resistive coatings. This method facilitates the elimination of inhomogeneities that may be present in the coating prior to heat treatment. Initially, the coating expands due to the coalescence of vacancies; subsequently, at higher temperatures, it contracts as a result of the annihilation of vacancies and the formation of dislocation loops. Parallel experiments conducted on three samples at each temperature demonstrated the reproducibility of the results.

Keywords

annealing, neutral environment, films, oxide, resistance.

ВЫСОКОТЕМПЕРАТУРНЫЙ ОТЖИГ В ВАКУУМЕ И В НЕЙТРАЛЬНОЙ СРЕДЕ ОКСИДНЫХ ПЛЁНОК ITO (In_2O_3: Sn)

Muzafarova Sultanpasha Anvarovna Research Institute of Semiconductor Physics and Microelectronics under the National University of Uzbekistan,
Yuldashev Abrorjon Abduvasitovich, Nurmatova Sevara Ravshan qizi
Fergana State University, Fergana

Аннотация. Полученные в оптимальных условиях синтеза при 550°C в течении 0,75 ч плёнки ITO (In_2O_3: Sn) покрытия характеризовались прозрачностью более 90 % и поверхностным сопротивлением ρ = 300 Ом.см, удельным сопротивлением 940^{-3} Ом.см . При помощи высокотемпературного отжига осуществлено уменьшение сопротивления резистивных покрытий. Этот метод позволяет ликвидировать неоднородности, которые могут существовать в покрытие перед термообработкой. Вначале покрытие расширяется вследствие срастания вакансий, а затем при более высоких температурах она сжимается вследствие разрушения вакансий и образования дислокационных колец. Проведение параллельных опытов на трех образцах при каждой температуре показало воспроизводимость экспериментов.

Ключевые слова. Отжиг, нейтральная среда, плёнки, оксид, сопротивление,

Отжиг в вакууме и в нейтральной среде. Известно [1], что отжиг плёнок ITO (In_2O_3: Sn) в среде водорода может привести к уменьшению кислородных вакансий, которые играют роль доноров в ITO (In_2O_3: Sn), однако, отжиг также обеспечивает энергию для удаления дефектов материала плёнок ITO (In_2O_3: Sn). Повышение проводимости объясняется кислородными вакансиями, которые образуются в ITO (In_2O_3: Sn) при восстановлении водородом. С целью повышения проводимости покрытия, проводился **отжиг в вакууме** при температурах 450 и 500 и 600 °C. Отжиг проводился в вакуумной камере Альфа-1 при вакууме порядка 10^{-5}. Установка «АЛЬФА-01» позволяет проводить отжиг до 600 ˚С, как в вакууме, так и в среде инертного газа. Установлено, что выдерживание в вакууме при температуре 600 °C свыше 10 минут приводит к разрушению покрытия. Результаты представлены в табл1 и рис.1. На основании полученных данных можно сделать вывод, что отжиг в вакууме в течение 4 минут при температурах 450 приводит к уменьшению поверхностного сопротивления ITO (In_2O_3: Sn)

покрытия на порядок (от 30 до 3 Ком при 450 ^{0}C.

Таблица 1. Поверхностное сопротивление плёнки ITO (In_2O_3: Sn) покрытия после отжига в вакууме

Время отжига в вакууме	Температура пиролиза								
	450 °C			500 °C			600 °C		
	Поверхностное сопротивление, кОм/^								
Без отжига	23,81	16,49	30,0	62,0	71,0	62,0	66,0	62,0	62,0
2 мин	6,29	5,0	5,70	6,2	5,4	5,4	20,0	17,8	-
3 мин	4,42	3,10	4,06	5,4	5,0	4,6	15,6	14,7	15,6
4 мин	4,21	2,39	3,19	5,2	4,8	4,5	14,7	14,0	15,1
5 мин	6,17	3,9	4,70	6,4	5,5	5,0	16,6	16,1	17,2
6 мин	9,43	7,8	8,2	6,8	6,8	6,2	67,1	21,7	20,0

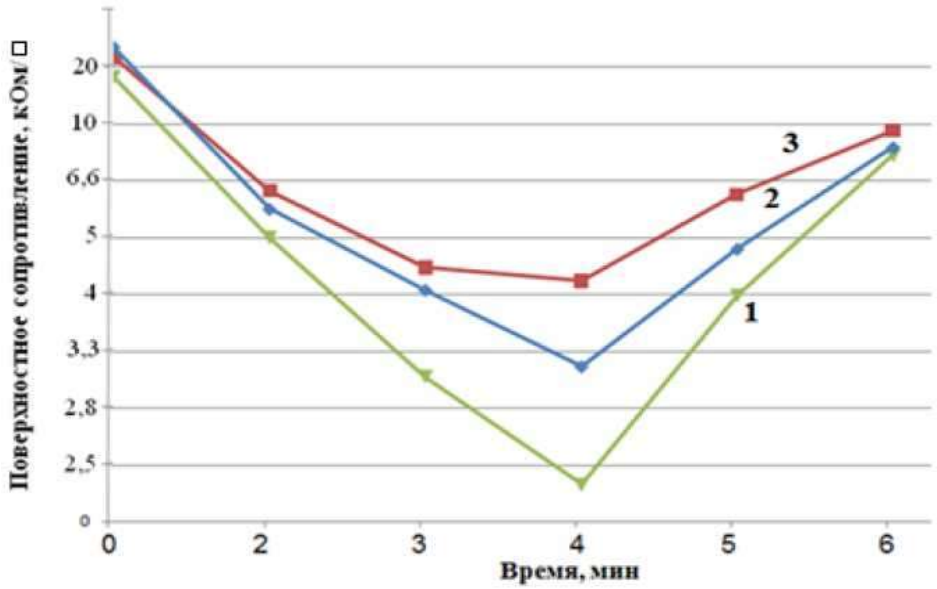


Рисунок 1 - Зависимость поверхностного сопротивления ITO (In_2O_3: Sn) покрытий, полученных при различных температурах пиролиза: 1 - 450 °C, 2 - 500 °C, 3 - 600 °C, от времени и температуры отжига в вакууме при температуре 450 °C

Повышение времени отжига в вакууме от 4 до 10 мин приводит к возрастанию поверхностного сопротивления ITO(In_2O_3:Sn) покрытий в результате потери компонентов и нарушения стехиометрии. Поэтому отжиг в вакууме нужно

проводить в течение 3-4 минут. Проведенное исследование показало, что отжиг в вакууме целесообразно проводить при 450 °C, поскольку повышение температуры приводит к испарению компонентов покрытия и повышению его поверхностного сопротивления [2,3].

Проведен отжиг плёнок ITO(In_2O_3:Sn) покрытия в нейтральной среде Ar. Вакуумная камера была предварительно откачана, затем впущен газ аргон. Результаты приведены в таблице 2 и на рисунке 2.

Таблица 2- Поверхностное сопротивление покрытия In9SnO15 после отжига в аргоне

Время отжига	Температура отжига					
	450 °C			600 °C		
	Поверхностное сопротивление, кОм/^					
Без отжига	52,6	52,6	62,5	50	50	50
2 мин	35,7	35,7	38,4	18,1	19,6	21,7
4 мин	29,4	27,7	23,8	16,3	16,1	18,1
6 мин	6,8	6,5	6,9	13,5	14,7	16,3
10 мин	4,6	4,9	4,8	9,17	10,0	12,0
15 мин	4,2	4,2	4,0	6,4	6,5	7,1
20 мин	3,5	3,8	3,8	8,1	8,6	8,4

Поверхностное сопротивление плёнок ITO (In_2O_3: Sn) покрытия снижается с повышением времени выдержки образцов в аргоне при температурах 450 и 600 °C. При этом отжиг при температуре 450 °C приводит к более эффективному, чем при 600 °C снижению поверхностного сопротивления плёнок ITO (In_2O_3: Sn) покрытия.

Отжиг обычно используется в удалении дефектов материала, тепловая энергия может увеличить вибрации и диффузии атомов решетки для достижения более желательной кристаллической структуры.

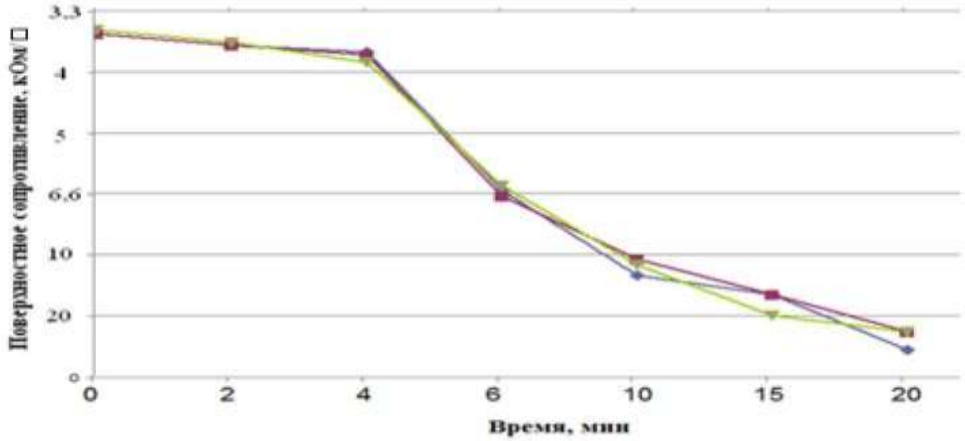


Рисунок 2 - Зависимость поверхностного сопротивления плёнок ITO (In_2O_3: Sn) покрытия от времени отжига в аргоне при температуре 450 °C для трех образцов

Электрическое сопротивление уменьшается с ростом температуры, чем можно объяснить увеличение концентрации носителей заряда. Дополнительный отжиг в вакууме и в инертной атмосфере приводит к уплотнению покрытия, полученной наслаиванием и пиролизом экстрактов, и снижению её поверхностного сопротивления. Необходимо отметить, что при нанесении медных контактов методом вакуумного напыления поверхностное сопротивление ITO (In_2O_3: Sn) покрытия также снижается.

Литература

1. Shang-Chou Chang Low-pressure H2/N2 annealing on indium tin oxide film / Shang-Chou Chang // Microelectronics Journal 38 (2007) 1220-1225.

2.Effect of ITO spreading layer on performance of blue light-emitting diodes / MV Bogdanov, KA Bulashevich, OV Khokhlev, I.Yu. Evstratov, MS Ramm, S.Yu. Karpov // Phys. stat. solid. - 2010. - No. 7-8. - P. 2127-2131.

3.Effects of substrate temperature and vacuum annealing on properties of ITO films prepared by radiofrequency magnetron sputtering / N. Boonyopakorn, N. Sripogpun, C. Thanachayanont, S. Dangtip // Chin. Phys. Lett. - 2010. - Vol. 27, No. 10. - P. 103-108.

INDEPENDENT THINKING OF THE INDIVIDUAL AND PROTECTION AGAINST THE INFLUENCE OF SOCIAL CONSCIOUSNESS

Bozorov Azizbek Orif o‘g‘li

Sarbon University, Jurisprudence Programme, First-Year Student

Qochqarova Xushroy Jo‘rabek qizi

Sarbon University, Public and Social Administration Programme, First-Year Student

Abstract

This article examines an individual's ability to think independently, the socio-psychological factors influencing its development, and the risk of losing one's independent position under the influence of public opinion, stereotypes, and group pressure. The influence of social consciousness on an individual's worldview is assessed not merely as a negative phenomenon, but as a complex process that contributes to socialization and personal development. At the same time, the article substantiates that, in the absence of sufficient critical thinking skills, social influence may become an obstacle to independent decision-making. The study proposes an original model that integrates intellectual, informational, psychological, and legal criteria for ensuring independent thinking. Furthermore, recommendations are developed to promote intellectual independence in education, the information environment, and social relations.

Keywords

independent thinking, social consciousness, critical thinking, individual freedom, social influence, public opinion, stereotype, information literacy, conformism, diversity of opinions.

INSONNING MUSTAQIL FIKRLASHI VA UNING IJTIMOIY ONG TA’SIRIDAN HIMOYALANISHI

Bozorov Azizbek Orif o'g'li
Sarbon universiteti, "Yurisprudensiya" ta'lim yo'nalishi, 1-bosqich talabasi
Qochqarova Xushroy Jo'rabek qizi - *Sarbon universiteti,"Davlat va jamiyat boshqaruvi" ta'lim yo'nalishi, 1-bosqich talabasi*

Annotatsiya: Mazkur maqolada insonning mustaqil fikrlash qobiliyati, uning shakllanishiga ta'sir etuvchi ijtimoiy-psixologik omillar hamda shaxsning ommaviy qarashlar, stereotiplar va guruh bosimi ta'sirida o'z mustaqil pozitsiyasini yo'qotish xavfi tahlil qilinadi. Ijtimoiy ongning inson dunyoqarashiga ta'siri faqat salbiy hodisa sifatida emas, balki shaxsning ijtimoiylashuvi va ma'naviy rivojlanishiga xizmat qiluvchi murakkab jarayon sifatida baholanadi. Shu bilan birga, tanqidiy fikrlash yetarli bo'lmagan sharoitda ijtimoiy ta'sirning mustaqil qaror qabul qilishga to'sqinlik qiluvchi omilga aylanishi asoslanadi. Tadqiqotda mustaqil fikrlashni ta'minlashning intellektual, axborotiy, psixologik va huquqiy mezonlarini birlashtiruvchi mualliflik modeli taklif etiladi. Shuningdek, ta'lim, axborot muhiti va ijtimoiy munosabatlarda shaxsning fikriy mustaqilligini rivojlantirishga qaratilgan takliflar ishlab chiqiladi.

Kalit so'zlar: mustaqil fikrlash, ijtimoiy ong, tanqidiy tafakkur, shaxs erkinligi, ijtimoiy ta'sir, ommaviy fikr, stereotip, axborot savodxonligi, konformizm, fikrlar xilma-xilligi.

Аннотация: В данной статье анализируется способность человека к самостоятельному мышлению, социально-психологические факторы, влияющие на её формирование, а также риск утраты личной позиции под воздействием общественных взглядов, стереотипов и группового давления. Влияние общественного сознания на мировоззрение человека рассматривается не только как негативное явление, но и как сложный процесс, способствующий социализации и духовному развитию личности. Вместе с тем обосновывается, что при недостаточном уровне критического мышления социальное воздействие

может стать фактором, препятствующим принятию самостоятельных решений. В исследовании предлагается авторская модель, объединяющая интеллектуальные, информационные, психологические и правовые критерии обеспечения самостоятельного мышления. Кроме того, разработаны предложения, направленные на развитие интеллектуальной самостоятельности личности в образовательной среде, информационном пространстве и общественных отношениях.

Ключевые слова: самостоятельное мышление, общественное сознание, критическое мышление, свобода личности, социальное воздействие, общественное мнение, стереотип, информационная грамотность, конформизм, многообразие мнений.

Kirish: Insonning jamiyatdagi o‘rni va uning shaxs sifatida shakllanishi, avvalo, fikrlash qobiliyati bilan chambarchas bog‘liq. Inson atrof-muhitdagi voqea-hodisalarni anglash, ularni tahlil qilish, turli qarashlarni taqqoslash va mustaqil xulosaga kelish orqali o‘z dunyoqarashini shakllantiradi. Biroq bu jarayon hech qachon ijtimoiy muhitdan ajralgan holda kechmaydi. Oila, ta’lim muassasalari, do‘stlar, ommaviy axborot vositalari, ijtimoiy tarmoqlar va jamiyatda shakllangan qadriyatlar insonning fikrlash tarziga bevosita yoki bilvosita ta’sir ko‘rsatadi. Ijtimoiy ta’sir inson hayotining tabiiy tarkibiy qismi hisoblanadi. U shaxsga tajriba, bilim va qadriyatlarni o‘zlashtirish imkonini beradi. Ammo ijtimoiy muhitda muayyan qarashlarning mutlaq haqiqat sifatida qabul qilinishi, boshqacha fikrlovchilarning salbiy baholanishi yoki ko‘pchilik fikriga so‘zsiz qo‘shilish talabi insonning mustaqil tafakkuriga salbiy ta’sir ko‘rsatishi mumkin. Bunday holatda shaxs voqelikni o‘z bilim va tahliliga asoslanib emas, balki atrofdagilarning munosabati va kutishlariga qarab baholay boshlaydi. Bugungi axborotlashgan jamiyatda ushbu muammo yanada dolzarb ahamiyat kasb etmoqda. Chunki inson bir vaqtning o‘zida turli axborot manbalari, ijtimoiy tarmoqlardagi qarashlar, ommaviy munozaralar va manipulyativ axborot oqimlari ta’sirida qolmoqda.

Axborotning ko‘pligi har doim ham bilimning ortishini anglatmaydi. Aksincha, axborotni tekshirish, uning manbasini aniqlash va turli nuqtayi nazarlarni solishtirish ko‘nikmalari shakllanmagan bo‘lsa, shaxs noto‘g‘ri xulosalarga kelishi mumkin. O‘zbekiston Respublikasi Konstitutsiyasining 33-moddasida har kimning fikrlash, so‘z va e’tiqod erkinligi huquqi, shuningdek axborotni izlash, olish va tarqatish huquqi mustahkamlangan [1]. Bu norma insonning fikriy mustaqilligi faqat shaxsiy fazilat emas, balki huquqiy jihatdan muhofaza qilinadigan erkinlik ekanini anglatadi.

Tadqiqotning maqsadi — insonning mustaqil fikrlashiga ijtimoiy ong va ommaviy qarashlar ta’sirining mexanizmlarini aniqlash, fikriy mustaqillikni cheklovchi omillarni tahlil qilish hamda shaxsning mustaqil qaror qabul qilish qobiliyatini rivojlantirish bo‘yicha ilmiy asoslangan takliflar ishlab chiqish. Tadqiqotning asosiy vazifalari ijtimoiy ta’sir va mustaqil tafakkur o‘rtasidagi munosabatni ochib berish, konformizm va stereotiplarning fikrlashga ta’sirini tahlil qilish, axborot muhitining rolini baholash hamda mustaqil fikrlashni ta’minlashning kompleks modelini taklif etishdan iborat.

Adabiyotlar tahlili. Mustaqil fikrlash va ijtimoiy ta’sir masalalari falsafa, psixologiya, sotsiologiya hamda huquqshunoslik fanlarida turli jihatlardan o‘rganilgan.

Birinchidan, Immanuel Kant insonning voyaga yetgan tafakkurini o‘z aqlidan mustaqil foydalanish qobiliyati bilan bog‘laydi [2]. John Stuart Mill esa fikrlar erkinligi va turli qarashlarning ochiq muhokama qilinishini jamiyat taraqqiyotining muhim sharti sifatida izohlaydi [3]. Ushbu yondashuvlar mustaqil fikrlashning falsafiy asoslarini shakllantiradi.

Ikkinchidan, Erich Fromm insonning erkinlikdan qochishi va mustaqil qaror qabul qilish mas’uliyatidan voz kechishi sabablarini tahlil qiladi [4]. Elisabeth Noelle-Neumann esa ko‘pchilik fikridan farq qiluvchi qarashga ega insonlarning ijtimoiy yakkalanishdan qo‘rqishi natijasida o‘z fikrini bildirmaslik holatini “sukut spirali” nazariyasi orqali tushuntiradi [5].

Uchinchidan, Serge Moscovici ijtimoiy ta’sirning guruh ichidagi qarashlar va xulq-atvorga ta’sirini o‘rgangan [6]. Robert Cialdini esa inson xatti-harakatlariga ta’sir ko‘rsatuvchi ishontirish mexanizmlarini tizimlashtirgan [7]. Pierre Bourdieu qarashlari esa ijtimoiy munosabatlarda ramziy hokimiyat va til orqali ta’sir o‘tkazish mexanizmlarini anglash imkonini beradi [8].

To‘rtinchidan, BMTning Inson huquqlari umumjahon deklaratsiyasi hamda Fuqarolik va siyosiy huquqlar to‘g‘risidagi xalqaro pakt fikr, vijdon, e’tiqod va fikrni erkin ifodalash huquqlarining xalqaro-huquqiy asoslarini belgilaydi [9; 10]. UNESCOning media va axborot savodxonligiga oid materiallari esa axborotni tanqidiy tahlil qilish va ongli foydalanish ko‘nikmalarining ahamiyatini ochib beradi [11]. O‘zbekiston Respublikasi Konstitutsiyasi mazkur huquqlarning milliy konstitutsiyaviy asoslarini mustahkamlaydi. Umuman olganda, mavjud manbalarda mustaqil fikrlash falsafiy, psixologik, sotsiologik va huquqiy jihatlardan yoritilgan. Biroq mazkur yondashuvlarni yagona tizimga birlashtirib, shaxsning fikriy mustaqilligini ta’minlashga xizmat qiluvchi amaliy mezonlarni ishlab chiqish zarurati mavjud. Ushbu maqolada aynan shu masalaga e’tibor qaratiladi.

Metodologiya. Tadqiqotda tizimli tahlil, qiyosiy tahlil, mantiqiy umumlashtirish, ilmiy abstraksiyalash va formal-yuridik usullardan foydalanildi. Tizimli tahlil orqali mustaqil fikrlashga ta’sir ko‘rsatuvchi ijtimoiy, psixologik va axborot omillari o‘zaro bog‘liq holda o‘rganildi. Qiyosiy tahlil yordamida falsafiy va ijtimoiy-psixologik nazariyalardagi yondashuvlar solishtirildi. Formal-yuridik usul esa fikrlash, so‘z va e’tiqod erkinligining konstitutsiyaviy asoslarini tahlil qilishda qo‘llanildi. Tadqiqotning asosiy metodologik tamoyili — mustaqil fikrlashni ijtimoiy ta’sirning mavjud emasligi bilan emas, balki ushbu ta’sirni anglash, baholash va unga nisbatan ongli pozitsiya shakllantirish qobiliyati bilan belgilashdan iborat.

Tahlil va natijalar. Mustaqil fikrlash — insonning mavjud axborot, qarash va

hodisalarni tayyor xulosa sifatida qabul qilmasdan, ularni o‘z bilimlari, mantiqiy tahlili va shaxsiy tajribasi asosida baholash qobiliyatidir. Bunda inson faqat o‘z fikrini bildirish bilan cheklanmaydi, balki uning asoslarini tushuntira olishi, boshqa qarashlarni tinglashi va zarur hollarda o‘z xulosasini qayta ko‘rib chiqishi ham muhim hisoblanadi. Ijtimoiy ong esa jamiyatda shakllangan qarashlar, qadriyatlar, e’tiqodlar, urf-odatlar va umumiy tasavvurlar majmuasidir. U insonning dunyoqarashiga ta’sir ko‘rsatib, jamiyatda o‘zaro tushunish va hamkorlikni ta’minlashga xizmat qiladi. Shu sababli ijtimoiy ongni inson tafakkuriga faqat salbiy ta’sir ko‘rsatuvchi hodisa sifatida baholash ilmiy jihatdan to‘g‘ri emas. Muammo ijtimoiy ta’sirning mavjudligida emas, balki uning insonning mustaqil xulosa chiqarish qobiliyatini cheklash darajasidadir. Masalan, shaxs muayyan fikrni uning ilmiy yoki mantiqiy asoslari uchun emas, balki ko‘pchilik aynan shu fikrni qo‘llab-quvvatlayotgani sababli qabul qilsa, unda mustaqil baholash jarayoni zaiflashadi. Demak, mustaqil fikrlash va ijtimoiy ong o‘rtasidagi munosabat qarama-qarshilikka emas, muvozanatga asoslanishi lozim. Shaxs jamiyat tajribasidan foydalanishi, biroq o‘z qarashlarini shakllantirishda aql, dalil va tanqidiy tahlilni asosiy mezon sifatida saqlab qolishi zarur.

Insonning fikrlash jarayoniga ta’sir ko‘rsatuvchi omillar turlicha bo‘lsa-da, ularning ayrimlari shaxsning mustaqil qaror qabul qilishiga bevosita to‘sqinlik qilishi mumkin. Bunday ta’sirlar, asosan, quyidagi mexanizmlar orqali namoyon bo‘ladi.

Birinchisi — konformizm. Konformizm insonning guruhdagi ko‘pchilik fikriga moslashish yoki undan chetga chiqmaslik maqsadida o‘z qarashlarini o‘zgartirishidir. Bunda shaxs o‘z fikrining to‘g‘riligini mustaqil tekshirish o‘rniga, guruh tomonidan qabul qilingan pozitsiyani ma’qullashga moyil bo‘ladi. Natijada qaror qabul qilishda dalil va mantiqdan ko‘ra ijtimoiy ma’qullanish muhimroq bo‘lib qoladi.

Ikkinchisi — stereotiplar ta’siri. Stereotiplar muayyan shaxs, guruh yoki hodisa haqida oldindan shakllangan umumiy tasavvurlardir. Ular murakkab voqelikni tez

anglashga yordam berishi mumkin, ammo tekshirilmagan stereotiplar insonning obyektiv baholash qobiliyatini cheklaydi. Shaxs hodisani uning haqiqiy mazmuniga qarab emas, balki oldindan shakllangan tasavvur asosida baholay boshlaydi.

Uchinchisi — ijtimoiy bosim va sukutga majburlovchi muhit. Inson o‘z fikrini bildirganida tanqid qilinish, guruhdan chetlatilish yoki salbiy munosabatga duch kelishdan qo‘rqishi mumkin. Bunday vaziyatda u o‘z qarashlarini yashiradi yoki ko‘pchilik fikriga qo‘shilgandek ko‘rinadi. Bu holat jamiyatda fikrlar xilma-xilligining amalda cheklanishiga olib keladi.

To‘rtinchisi — axborot manipulyatsiyasi. Axborotni bir tomonlama taqdim etish, hissiyotlarga ta’sir qilish, yolg‘on ma’lumot tarqatish yoki muayyan fikrni takrorlash orqali insonning qarashlariga maqsadli ta’sir o‘tkazish mumkin. Ayniqsa, ijtimoiy tarmoqlarda manbasi tekshirilmagan xabarlar tez tarqalishi shaxsning mustaqil xulosa chiqarish jarayonini murakkablashtiradi. Mazkur mexanizmlarning umumiy xususiyati shundaki, ular insonning fikrlash jarayonini butunlay yo‘q qilmaydi, balki uning mustaqil tahlil qilish imkoniyatini toraytiradi. Shuning uchun ijtimoiy ta’sirdan himoyalanishning asosiy vositasi barcha tashqi ta’sirlarni rad etish emas, balki ularni anglash va baholash ko‘nikmasini rivojlantirishdir.

Raqamli texnologiyalar rivojlanishi natijasida insonning axborot olish imkoniyatlari sezilarli darajada kengaydi. Endilikda shaxs turli mamlakatlar, ilmiy markazlar va ijtimoiy guruhlarning qarashlari bilan tezkor tanishishi mumkin. Biroq axborotdan foydalanish imkoniyatining kengayishi avtomatik ravishda mustaqil tafakkurning rivojlanishini anglatmaydi. Buning asosiy sabablaridan biri — axborotning ko‘pligi va uning ishonchliligini baholashdagi qiyinchilikdir. Bir-biriga zid xabarlar, hissiy mazmundagi sarlavhalar, noto‘g‘ri statistik ma’lumotlar va manipulyativ materiallar insonda voqelik haqida noto‘g‘ri tasavvur shakllantirishi mumkin.

Yana bir muhim omil — insonning faqat o‘z qarashlariga mos keluvchi axborotni

izlashga moyilligidir. Bunday vaziyatda shaxs o‘z fikrini tasdiqlovchi ma’lumotlarni qabul qilib, unga zid dalillarni e’tiborsiz qoldirishi mumkin. Natijada mustaqil fikrlash o‘rnini bir tomonlama axborot iste’moli egallaydi. Shu nuqtayi nazardan, axborot savodxonligi mustaqil fikrlashning muhim tarkibiy qismi hisoblanadi. Axborot savodxonligi faqat internetdan foydalanish yoki kerakli ma’lumotni topish ko‘nikmasidan iborat emas. U axborot manbasini tekshirish, dalil va shaxsiy fikrni farqlash, ma’lumotning kontekstini tushunish hamda turli manbalarni solishtirish qobiliyatlarini ham qamrab oladi. Mualliflik taklifi: ta’lim muassasalarida axborot bilan ishlashga doir mashg‘ulotlarni faqat texnik ko‘nikmalar bilan cheklamasdan, mustaqil tahlil va axborot manipulyatsiyasini aniqlashga yo‘naltirish lozim. Bunda o‘quvchi va talabalar bir masala bo‘yicha qarama-qarshi manbalarni o‘rganishi, ularning dalillarini solishtirishi va o‘z xulosasini asoslab berishi kerak.

Mustaqil fikrlash masalasi faqat pedagogik yoki psixologik muammo emas. U insonning asosiy huquq va erkinliklari bilan bevosita bog‘liq. Chunki insonning o‘z fikrini shakllantirish, uni erkin ifodalash va boshqa qarashlar bilan tanishish imkoniyati huquqiy kafolatlarsiz to‘liq amalga oshmaydi. O‘zbekiston Respublikasi Konstitutsiyasining 33-moddasi fikrlash, so‘z va e’tiqod erkinligini, axborotni izlash, olish va tarqatish huquqini mustahkamlaydi. Mazkur modda axborot olish va fikr bildirish erkinligining konstitutsiyaviy asosini belgilaydi. Shuningdek, Konstitutsiyaning 35-moddasida vijdon erkinligi kafolatlangan va diniy qarashlarni majburan singdirishga yo‘l qo‘yilmasligi belgilangan. 36-moddada esa fuqarolarning jamiyat va davlat ishlarini boshqarishda ishtirok etish huquqi mustahkamlangan.

Bu normalarning mazmunidan kelib chiqib, mustaqil fikrlashni ta’minlashda uchta huquqiy yo‘nalish muhim ahamiyatga ega:

1. Fikr erkinligi — shaxsning o‘z qarashlarini mustaqil shakllantirishi va e’tiqodiga ega bo‘lishi.

2. Axborot erkinligi — turli manbalardan ma’lumot olish va ularni tahlil qilish imkoniyatiga ega bo‘lishi.

3. Fikrni ifodalash erkinligi — o‘z qarashlarini qonun doirasida erkin bayon etishi va muhokamalarda ishtirok etishi.

Ushbu huquqlar o‘zaro bog‘liq bo‘lib, ulardan birining cheklanishi qolganlarining amalda ro‘yobga chiqishiga ham salbiy ta’sir ko‘rsatishi mumkin. Masalan, axborot olish imkoniyati cheklangan shaxs yetarli ma’lumotga ega bo‘lmasdan qaror qabul qilishi, o‘z fikrini erkin ifodalashdan qo‘rqadigan shaxs esa ijtimoiy muhokamalarda faol qatnasha olmasligi mumkin. Shu bilan birga, fikr erkinligi boshqa shaxslarning huquqlari, qonuniy manfaatlari va jamoat xavfsizligiga oid qonuniy cheklovlar bilan uyg‘un holda amalga oshiriladi. Demak, mustaqil fikrlashni himoya qilish boshqa-larning huquqlarini inkor etish yoki har qanday fikrni cheklovsiz tarqatish degani emas.

Tadqiqot davomida mustaqil fikrlashni rivojlantirish va ijtimoiy ta’sirning salbiy oqibatlaridan himoyalanish uchun to‘rt bosqichli “fikriy mustaqillik modeli” taklif etiladi. Mazkur modelning asosiy g‘oyasi shundan iboratki, inson tashqi ta’sirni avval aniqlashi, keyin uni tahlil qilishi, mustaqil xulosa shakllantirishi va ushbu xulosani dalillar bilan asoslay olishi kerak.

Fikriy mustaqillikning to‘rt bosqichli modeli

1. Anglash. Fikrga ta’sir qilayotgan manba, guruh bosimi, stereotip yoki axborot ta’sirini aniqlash.

2. Tahlil qilish. Axborotning ishonchliligi, dalillarning asoslanganligi va muqobil qarashlarni solishtirish.

3. Mustaqil xulosa. Ko‘pchilik fikridan qat’i nazar, bilim va mantiqqa asoslangan shaxsiy pozitsiyani shakllantirish.

4. Asoslash va qayta baholash. O‘z qarashini dalillar bilan himoya qilish, yangi dalillar paydo bo‘lganda xulosani qayta ko‘rib chiqish.

Modelning o‘ziga xos jihati shundaki, mustaqil fikrlash faqat shaxsiy qarashga ega bo‘lish bilan chegaralanmaydi. Unda fikrning qanday shakllangani, qaysi dalillarga asoslangani va yangi ma’lumotlar ta’sirida qayta baholanishi ham muhim hisoblanadi.

Mazkur yondashuv asosida mustaqil fikrlashni rivojlantirish uchun quyidagi amaliy choralar taklif etiladi:

- ta’lim jarayonida tayyor javoblarni yodlashdan ko‘ra muammoli savollar va dalillarga asoslangan munozaralarga ustuvorlik berish;
- o‘quvchi va talabalarda axborot manbalarini tekshirish hamda yolg‘on ma’lumotlarni aniqlash ko‘nikmalarini shakllantirish;
- oilada va ta’lim muassasalarida boshqacha fikrni hurmat qilish madaniyatini rivojlantirish;
- ommaviy axborot va ijtimoiy tarmoqlarda fikrlar xilma-xilligini ta’minlash;
- shaxsning o‘z xulosasini dalillar bilan asoslash va zarur hollarda uni qayta ko‘rib chiqish qobiliyatini baholash.

Maqolaning ilmiy yangiligi mustaqil fikrlashni faqat intellektual qobiliyat sifatida emas, balki ijtimoiy ta’sirni anglash, axborotni tanqidiy tekshirish, mustaqil pozitsiyani shakllantirish va uni qayta baholashdan iborat yaxlit jarayon sifatida talqin etish hamda ushbu jarayon uchun to‘rt bosqichli mualliflik modelini taklif qilishda namoyon bo‘ladi.

Xulosa. Insonning mustaqil fikrlashi uning shaxs sifatida shakllanishi, jamiyatdagi o‘rnini anglash va ongli qarorlar qabul qilishining muhim shartidir. Tadqiqot natijalari shuni ko‘rsatadiki, ijtimoiy ong inson tafakkurining shakllanishiga tabiiy ravishda ta’sir ko‘rsatsa-da, ushbu ta’sirning haddan tashqari kuchayishi shaxsning mustaqil xulosa chiqarish qobiliyatini cheklashi mumkin.

Birinchidan, mustaqil fikrlash jamiyatdan ajralib yashash yoki barcha umumiy qarashlarni rad etish degani emas. Uning mohiyati ijtimoiy muhitda mavjud fikrlarni anglash, tahlil qilish va ularga nisbatan ongli munosabat shakllantirishdan iborat.

Ikkinchidan, konformizm, stereotiplar, ijtimoiy bosim va axborot manipulyatsiyasi insonning mustaqil qaror qabul qilishiga salbiy ta’sir ko‘rsatuvchi asosiy omillardir. Ularning ta’sirini kamaytirish uchun shaxsda tanqidiy fikrlash, axborot savodxonligi va mantiqiy tahlil ko‘nikmalarini rivojlantirish zarur.

Uchinchidan, mustaqil fikrlashning muhim sharti huquqiy kafolatlarning mavjudligidir. Fikr, so‘z, e’tiqod va axborot erkinligi insonning o‘z dunyoqarashini shakllantirishi uchun zarur sharoit yaratadi. Shu sababli fikrlar xilma-xilligini hurmat qilish va boshqacha qarashga ega shaxslarning huquqlarini ta’minlash jamiyatning demokratik rivojlanishida muhim ahamiyatga ega.

To‘rtinchidan, maqolada taklif etilgan to‘rt bosqichli fikriy mustaqillik modeli shaxsning tashqi ta’sirni anglashidan boshlab, mustaqil xulosa shakllantirishi va uni qayta baholashigacha bo‘lgan jarayonni qamrab oladi. Ushbu model ta’lim jarayonida, axborot savodxonligini rivojlantirishda va ijtimoiy munosabatlarda qo‘llanishi mumkin. Umuman olganda, jamiyat taraqqiyoti faqat umumiy qarashlarning mavjudligi bilan emas, balki turli fikrlarni erkin ifodalay oladigan, ularni dalillar asosida baholaydigan va mustaqil qaror qabul qiladigan shaxslarning shakllanishi bilan belgilanadi. Mustaqil fikrlaydigan inson jamiyatga qarshi turadigan emas, balki jamiyatdagi jarayonlarni ongli anglaydigan, ularni tahlil qiladigan va taraqqiyotga o‘z fikri bilan hissa qo‘sha oladigan shaxsdir.

FOYDALANILGAN ADABIYOTLAR RO‘YXATI

1. O‘zbekiston Respublikasi Konstitutsiyasi. Yangi tahrir. 2023-yil 30-aprel.
2. Kant, I. An Answer to the Question: What Is Enlightenment? 1784.
3. Mill, J. S. On Liberty. London: John W. Parker and Son, 1859.
4. Fromm, E. Escape from Freedom. New York: Farrar & Rinehart, 1941.
5. Noelle-Neumann, E. The Spiral of Silence: A Theory of Public Opinion. Journal of Communication, Vol. 24, No. 2, 1974, pp. 43–51.

6. Moscovici, S. Social Influence and Social Change. London: Academic Press, 1976.

7. Cialdini, R. B. Influence: The Psychology of Persuasion. New York: HarperCollins, 1984.

8. Bourdieu, P. Language and Symbolic Power. Cambridge: Polity Press, 1991.

9. United Nations. Universal Declaration of Human Rights. 1948-yil 10-dekabr, 217 A (III)-rezolyutsiya.

10. United Nations. International Covenant on Civil and Political Rights. 1966-yil 16-dekabr, 2200A (XXI)-rezolyutsiya.

11. UNESCO. Global Media and Information Literacy Assessment Framework: Country Readiness and Competencies. Paris: UNESCO, 2013.

12. Arendt, H. The Origins of Totalitarianism. New York: Harcourt, Brace and Company, 1951.

SPECIFIC FEATURES OF THE REPORTAGE GENRE IN ART JOURNALISM

Aytmuratova Baxıtgúl Kómekbay qızı

Second-year student specializing in Art Criticism and Journalism, Nukus Branch of the Uzbekistan State Institute of Arts and Culture

Abstract

This article analyzes the specific features, theoretical foundations, and practical potential of the reportage genre within the field of art journalism. It examines the role of reportage in journalistic coverage of events related to art and culture, focusing on on-site observation, descriptive expression, direct communication, the author's perspective, and the reliability of facts. It also explores the potential of reportage to provide information, shape aesthetic perception, and introduce audiences to art when covering theatre performances, exhibitions, concerts, and cultural events. The article summarizes the key characteristics of art reportage based on an analysis of scholarly literature and a practical approach developed using a cultural event as an example.

Keywords

art journalism, reportage, cultural journalism, art, theatre, genre, publicism, descriptive expression, audience, cultural communication.

ART-JURNALISTIKADA REPORTAJ JANRINING O‘ZIGA XOS XUSUSIYATLARI

Aytmuratova Baxıtgúl Kómekbay qızı

O‘zbekiston davlat san’at va madaniyat instituti Nukus filialining san’atshunoslik jurnalistikasi mutaxassisligi 2-kurs talabasi

Annotatsiya: Ushbu maqolada art-jurnalistika tizimida reportaj janrining o‘ziga xos xususiyatlari, nazariy asoslari va amaliy imkoniyatlari tahlil qilinadi. San’at va madaniyatga oid voqealarni jurnalistik yoritishda reportajning o‘rni, voqea joyidan

kuzatish, tasviriy ifoda, bevosita muloqot, muallif pozitsiyasi hamda faktlarning ishonchliligi kabi jihatlar yoritiladi. Shuningdek, teatr spektakllari, ko‘rgazmalar, konsertlar va madaniy tadbirlarni yoritishda reportajning axborot berish, estetik idrokni shakllantirish va auditoriyani san’at bilan tanishtirish imkoniyatlari ko‘rib chiqiladi. Maqolada ilmiy adabiyotlar tahlili hamda madaniy tadbir misolida ishlab chiqilgan amaliy yondashuv asosida art-reportajning asosiy xususiyatlari umumlashtiriladi.

Kalit so‘zlar: art-jurnalistika, reportaj, madaniy jurnalistika, san’at, teatr, janr, publitsistika, tasviriy ifoda, auditoriya, madaniy kommunikatsiya.

Zamonaviy jurnalistika jamiyat hayotining turli sohalarini yoritish bilan bir qatorda, san’at va madaniyat rivojini ham keng jamoatchilikka yetkazishda muhim o‘rin tutadi. Teatr, kino, musiqa, tasviriy san’at, adabiyot va boshqa ijodiy yo‘nalishlarga oid voqealarni yoritish jurnalistikaning ixtisoslashgan sohasi — art-jurnalistikaning asosiy vazifalaridan biridir. Mazkur yo‘nalish san’at hodisalarini oddiy axborot sifatida taqdim etish bilangina cheklanmay, ularning mazmuni, badiiy xususiyatlari va ijtimoiy ahamiyatini auditoriyaga tushuntirishga ham xizmat qiladi.

Art-jurnalistika tushunchasi xalqaro ilmiy adabiyotlarda san’at va madaniyat haqidagi jurnalistik materiallarni qamrab oluvchi yo‘nalish sifatida talqin etiladi. Anna Roosvall va Andreas Widholm muallifligidagi *Cultural Journalism* tadqiqotida san’at jurnalistikasi madaniy jurnalistikaning muhim tarkibiy qismi sifatida ko‘rib chiqilib, uning doirasiga san’at va ommaviy madaniyatga oid taqrizlar, tanqidiy materiallar, yangiliklar va esselar kiritiladi [1]. Bu esa art-jurnalistikaning janriy jihatdan rang-barangligini ko‘rsatadi.

Mazkur yo‘nalishda reportaj janri alohida ahamiyatga ega. Chunki reportaj jurnalistga voqea joyida bevosita kuzatish olib borish, ishtirokchilar bilan suhbatlashish, muhitni tasvirlash va sodir bo‘layotgan jarayonni o‘quvchi yoki tomoshabinga yaqinlashtirish imkonini beradi. Masalan, teatr premyerasi haqidagi qisqa xabarda

spektaklning qachon va qayerda namoyish etilgani haqida ma’lumot berilsa, reportajda sahna muhiti, tomoshabinlarning munosabati, ijodkorlarning taassurotlari va tadbirning o‘ziga xos jihatlari ham yoritilishi mumkin. Kobie van Krieken va José Sandersning narrativ jurnalistikaga bag‘ishlangan tadqiqotida voqealarni tasviriy va hikoyaviy usullarda bayon etish auditoriyaning materialga jalb etilishini kuchaytirishi, voqealarni kengroq kontekstda tushunishga yordam berishi ta’kidlanadi [2]. Biroq bunday usullardan foydalanishda faktlarning aniqligi va haqqoniyligini saqlash muhimdir. Bu talab san’atga oid reportajlar uchun ham dolzarb hisoblanadi.

Shu nuqtayi nazardan, art-jurnalistikada reportaj janrining xususiyatlarini o‘rganish, uning boshqa jurnalistik janrlardan farqini aniqlash va amaliy qo‘llanish imkoniyatlarini tahlil qilish nazariy hamda amaliy ahamiyatga ega.

Art-jurnalistika san’at va madaniyat bilan bog‘liq jarayonlarni jurnalistik vositalar orqali yorituvchi ixtisoslashgan yo‘nalishdir. Uning asosiy vazifasi ijodiy voqealar haqida ma’lumot berish, san’at asarlari va ijodkorlar faoliyatini jamoatchilikka tanishtirish, madaniy jarayonlarning mazmunini tushuntirish hamda auditoriyaning san’atga bo‘lgan qiziqishini oshirishdan iborat.

Mening fikrimcha art-jurnalistning faoliyati umumiy axborot jurnalistikasidan ayrim jihatlari bilan farq qiladi. U voqea haqidagi faktlarni yetkazish bilan birga, san’at turining xususiyatlarini, badiiy ifoda vositalarini va ijodiy jarayonning o‘ziga xosligini ham tushunishi zarur. Masalan, teatr haqidagi reportajda aktyorlar ijrosi, rejissyorning sahnaviy yechimi, dekoratsiya va musiqaning spektakldagi vazifasi haqida o‘rinli ma’lumot berilishi mumkin. Bunda jurnalistning san’atga oid bilimlari materialning mazmunini chuqurlashtiradi.

Reportaj esa jurnalistikaning voqea-hodisani bevosita kuzatish va uning kechishini tasvirlashga asoslangan janrlaridan biridir. Uning markazida muayyan voqea,

jarayon yoki hodisa turadi. Jurnalist voqea joyidagi kuzatuvlari, suhbatlari, faktlari va tasviriy detallari orqali auditoriyada hodisa haqida yaxlit tasavvur shakllantiradi.

Reportajning muhim xususiyati — voqea bilan bevosita aloqadorlikdir. Jurnalist imkon qadar voqea joyida bo‘lib, vaziyatni o‘z ko‘zi bilan kuzatadi, ishtirokchilar bilan muloqot qiladi va ma’lumotlarni tekshiradi. Bunda muallifning kuzatuvi muhim bo‘lsa-da, shaxsiy taassurot faktlarning o‘rnini egallamasligi lozim. Van Krieken va Sanders tadqiqotida hikoyaviy jurnalistika badiiy adabiyotga xos ayrim tasviriy usullardan foydalanishi mumkinligi, biroq uning badiiy to‘qimadan farqi real voqelikni haqqoniy aks ettirishga intilishida ekanligi ko‘rsatiladi [2]. Ushbu yondashuv reportaj uchun ham muhim nazariy asos bo‘la oladi: jurnalist tasvirni jonlantirishi mumkin, ammo sodir bo‘lmagan voqeani o‘ylab topishi yoki faktlarni o‘zgartirishi mumkin emas.

Demak, art-jurnalistika va reportajning o‘zaro aloqasi san’at voqealarini nafaqat xabar qilish, balki ularni jonli, tushunarli va mazmunli shaklda yoritish imkoniyatida namoyon bo‘ladi.

Art-jurnalistikadagi reportaj umumiy reportaj janrining asosiy belgilarini saqlagan holda, san’at va madaniyat sohasiga xos mazmun hamda ifoda vositalari bilan boyiydi. Uning xususiyatlarini quyidagi jihatlar orqali ko‘rib chiqish mumkin.

Birinchidan, voqea joyidan kuzatish. Art-reportajning ishonchliligi jurnalistning tadbirda bevosita ishtirok etishi va jarayonni kuzatishiga bog‘liq. Teatr premyerasi, rassomlar ko‘rgazmasi, musiqa festivali yoki ijodiy uchrashuv haqidagi reportajda voqea qanday kechgani, ishtirokchilar nima qilgani va tadbirning muhim bosqichlari aniq yoritilishi kerak. Agar material oldindan e’lon qilingan ma’lumotlar asosida yozilsa, uni bevosita kuzatishga asoslangan reportaj sifatida taqdim etish to‘g‘ri bo‘lmaydi.

Ikkinchidan, tasviriylik. San’at va madaniyat voqealari ko‘pincha o‘ziga xos muhit, rang, tovush, harakat va hissiy taassurotlar bilan ajralib turadi. Shu sababli art-

reportajda o‘rinli tasviriy detallar muhim o‘rin tutadi. Masalan, ko‘rgazma haqidagi materialda asarlarning ranglar uyg‘unligi, ko‘rgazma zalining tashkil etilishi yoki tomoshabinlarning asarlar oldida to‘xtab kuzatishi tasvirlanishi mumkin. Teatr reportajida esa sahna bezagi, yorug‘lik va musiqa kabi elementlar voqea mazmunini ochishga yordam beradi. Tasviriylikning vazifasi faqat matnni bezash emas, balki auditoriyaga voqea muhitini yaxshiroq anglatishdir. Har bir detal materialning asosiy mazmuniga xizmat qilishi kerak.

Uchinchidan, bevosita muloqot va qahramonlar ishtiroki. Art-reportajda ijodkorlar, tashkilotchilar, ishtirokchilar va tomoshabinlarning fikrlari voqeaning turli tomonlarini ochib berishi mumkin. Masalan, teatr premyerasi haqidagi reportajda rejissyorning asar g‘oyasi haqidagi izohi, aktyorning obraz ustida ishlash jarayoniga doir fikri va tomoshabinning taassuroti bir-birini to‘ldiradi. Biroq suhbatdoshlarning fikrlari voqeaning o‘zi va jurnalist kuzatuvlari bilan mantiqan bog‘langan bo‘lishi zarur.

To‘rtinchidan, voqea rivojini izchil bayon qilish. Reportajda ma’lumotlar shunchaki ketma-ket sanab o‘tilmaydi. Ular voqeaning rivojiga mos tarzda tashkil etiladi. Material tadbirga tayyorgarlik jarayonidan, voqeaning muhim bir lahzasidan yoki e’tiborni tortadigan kuzatuvdan boshlanishi mumkin. Keyinchalik asosiy voqealar, suhbatlar va tafsilotlar yoritilib, yakunda umumlashtiruvchi xulosa beriladi.

Beshinchidan, muallifning kuzatuvchanligi. Jurnalist voqeadagi muhim va mazmunli jihatlarni ajrata olishi lozim. Har qanday tadbirda ko‘plab holatlar yuz beradi, ammo ularning barchasini materialga kiritish shart emas. Art-reportajda san’at hodisasining mohiyatini ochadigan, o‘quvchi uchun yangi ma’lumot beradigan va voqea ruhini ifodalaydigan jihatlar tanlanadi.

Oltinchidan, faktlarning aniqligi va xolislik. Reportajda muallifning taassurotlari, kuzatuvlari va baholari mavjud bo‘lishi mumkin. Lekin ularning faktlardan farqi aniq sezilib turishi kerak. Masalan, “tomoshabinlar spektaklni olqishladi” degan

jumla kuzatilgan holatga asoslanishi mumkin. “Spektakl barcha tomoshabinlarga yoqdi” degan xulosa esa tegishli dalillarsiz umumlashtirish hisoblanadi. Shu sababli art-reportajda kuzatuv, iqtibos va muallif talqinini bir-biridan farqlash muhim. Shunday qilib, art-reportajning badiiyligi voqeani bezash yoki bo‘rttirishda emas, balki real tafsilotlarni mazmunli tanlash, ularni izchil bayon etish va auditoriyaga tushunarli tarzda yetkazishda namoyon bo‘ladi. Teatr san’ati art-jurnalistika uchun muhim mavzulardan biridir. Spektakl, premyera, festival va ijodiy uchrashuvlar haqida reportaj tayyorlash jurnalistdan voqeaning o‘zini kuzatish bilan birga, uning san’atga xos jihatlarini ham anglashni talab qiladi. Teatr reportajida voqea bir necha qatlamda yoritilishi mumkin. Birinchi qatlam — tadbirga oid aniq axborot: spektakl nomi, teatr, sana, ijodiy jamoa va tadbirning maqsadi. Ikkinchi qatlam — jurnalistning kuzatuvlari: sahna muhiti, spektaklning muhim lahzalari, tomoshabinlar munosabati va tadbirning tashkil etilishi. Uchinchi qatlam — suhbatlar: rejissyor, aktyor, dramaturg yoki tomoshabin fikrlari. Bu qismlar bir-birini to‘ldirganida material mazmunan yaxlit bo‘ladi. Bunda reportajni taqriz bilan aralashtirib yubormaslik muhim. Taqrizning asosiy vazifasi spektaklni badiiy jihatdan tahlil qilish va baholash bo‘lsa, reportaj voqeaning kechishi, muhiti, ishtirokchilari va muhim tafsilotlarini ko‘rsatishga yo‘naltiriladi. Reportajda tahliliy fikrlar bo‘lishi mumkin, biroq ular voqea tasvirini to‘liq siqib chiqarmasligi lozim.

Art-jurnalistikada reportaj janri san’at va madaniyat voqealarini bevosita kuzatish, tasvirlash va auditoriyaga tushunarli tarzda yetkazish imkonini beruvchi muhim jurnalistik shakllardan biridir. Uning o‘ziga xosligi voqea joyi bilan bevosita aloqadorlik, tasviriy detallar, suhbatlar, voqealar rivojini izchil bayon qilish va muallif kuzatuvining mavjudligida namoyon bo‘ladi. Tadqiqot davomida art-reportajning umumiy reportaj janri bilan mushtarak jihatlari va san’at sohasiga xos xususiyatlari ko‘rib chiqildi. Xususan, teatr, musiqa, tasviriy san’at va adabiy tadbirlarni yoritishda jurnalistdan nafaqat axborot to‘plash, balki tegishli san’at turining mazmunini anglash

va uning muhim jihatlarini tanlash ham talab etilishi aniqlandi. Nazariy manbalar tahlili tasviriy va hikoyaviy usullar auditoriyaning material bilan aloqasini kuchaytirishi mumkinligini ko‘rsatadi. Biroq reportajda bunday usullar jurnalistik haqqoniylik, faktlarning aniqligi va manbalar bilan ishlash madaniyatiga tayangan holda qo‘llanishi kerak. Jurnalistning shaxsiy taassuroti voqea haqidagi tekshirilgan ma’lumotlar o‘rnini egallamasligi lozim.

Umuman olganda, art-jurnalistikada reportaj janri san’atni keng jamoatchilikka yaqinlashtirish, madaniy voqealar haqida to‘liqroq tasavvur hosil qilish va auditoriyaning estetik dunyoqarashini boyitishga xizmat qiladi. Uning samaradorligi esa jurnalistning kuzatuvchanligi, san’atga oid bilimi, ifoda mahorati va kasbiy mas’uliyatiga bevosita bog‘liq.

Foydalanilgan adabiyotlar

1. T., Xudoyqulov M. *Jurnalistikaga kirish.* — Toshkent, 2018.

2. Xudoyqulov M. *Jurnalistika va publitsistika.* — Toshkent: Universitet, 2010.

3. Ernazarov Q., Mamatova Y. va boshqalar. *Reportyorlik faoliyatining nazariyasi va amaliyoti.* — Toshkent: Universitet, 2002.

4. Harries, G., Wahl-Jorgensen, K. “The Culture of Arts Journalists: Elitists, Saviors or Manic Depressives?” *Journalism*, 2007, 8(6).

5. Hovden, J. F., Kristensen, N. N. “The Cultural Journalist around the Globe: A Comparative Study of Characteristics, Role Perceptions, and Perceived Influences.” *Journalism*, 2021, 22(3).

The Impact of Integrating Science, Education and Production on Innovative Development: A Conceptual Framework and Evidence from Uzbekistan

Odilova Dilnozaxon Barnayevna

Doctor of Philosophy (PhD)., Associate Professor of the department “Economic theory"., Tashkent State University of Economics, Uzbekistan

https://orcid.org/0000-0001-7654-9233 **E-mail :** d.odilova@tsue.uz

Abstract

This thesis asks how the integration of science, education and production shapes innovative development. It builds on national innovation system theory, the triple helix model and the concept of absorptive capacity, and treats integration as four links: education to science, science to production, production to science and education, and ecosystem coordination. Innovation outcomes, the argument goes, depend on the weakest link rather than on the supply of knowledge alone. Global Innovation Index profiles of Uzbekistan for 2025 and 2026 point to a gap. Graduates in science and engineering rank second (36.8% of graduates) and researchers per million rose from 542.1 to 639.5, yet the knowledge absorption score fell from 24.1 to 17.8 and the business-financed share of R&D from 42.4% to 38.5%, while university-industry collaboration improved only from 33.5 to 36.5. The priority therefore lies in strengthening the demand-side and intermediary links.

Keywords

science-education-production integration, innovative development, triple helix, absorptive capacity, university-industry collaboration, Uzbekistan.

Annotatsiya.

Tezisda ilm-fan, ta’lim va ishlab chiqarish integratsiyasi innovatsion rivojlanishga qanday ta’sir ko’rsatishi o’rganiladi. Tahlil milliy innovatsion tizimlar nazariyasi, uch

spiral (triple helix) modeli va o'zlashtirish qobiliyati tushunchasiga tayanadi; integratsiya to'rt bo'g'in - ta'limdan ilm-fanga, ilm-fandan ishlab chiqarishga, ishlab chiqarishdan ilm-fan va ta'limga hamda ekotizim muvofiqlashtiruvi - sifatida ko'riladi. Innovatsion natijalar faqat bilim taklifiga emas, eng zaif bo'g'inga bog'liq degan xulosa ilgari suriladi. O'zbekistonning Global innovatsion indeks 2025 va 2026 profillari tafovutni ko'rsatadi: fan va muhandislik bitiruvchilari bo'yicha mamlakat 2-o'rinda (bitiruvchilarning 36,8 foizi), million aholiga to'g'ri keladigan tadqiqotchilar 542,1 dan 639,5 gacha oshgan. Biroq bilimni o'zlashtirish bali 24,1 dan 17,8 gacha, tadqiqotlarning biznes tomonidan moliyalashtirilgan ulushi 42,4 foizdan 38,5 foizgacha kamaygan, universitet va sanoat hamkorligi esa 33,5 dan 36,5 gacha ozgina yaxshilangan. Shu bois ustuvorlik talab tomoni va vositachi bo'g'inlarni mustahkamlashga qaratilishi kerak.

Kalit so'zlar: ilm-fan, ta'lim va ishlab chiqarish integratsiyasi, innovatsion rivojlanish, uch spiral modeli, o'zlashtirish qobiliyati, universitet va sanoat hamkorligi, O'zbekiston.

Аннотация.

В тезисе рассматривается, как интеграция науки, образования и производства влияет на инновационное развитие. Анализ опирается на теорию национальных инновационных систем, модель тройной спирали и концепцию поглощающей способности; интеграция трактуется как четыре звена - от образования к науке, от науки к производству, от производства к науке и образованию, а также координация экосистемы. Утверждается, что инновационные результаты определяются самым слабым звеном, а не только предложением знаний. Профили Узбекистана в Глобальном инновационном индексе 2025 и 2026 годов указывают на разрыв: по доле выпускников в области науки и инженерии страна занимает 2-е место (36,8% выпускников), число исследователей на миллион жителей выросло

с 542,1 до 639,5. Однако показатель поглощения знаний снизился с 24,1 до 17,8, доля бизнеса в финансировании НИОКР - с 42,4% до 38,5%, а сотрудничество университетов и промышленности улучшилось лишь с 33,5 до 36,5. Поэтому приоритетом должно стать укрепление звеньев со стороны спроса и посреднических институтов.

Ключевые слова: интеграция науки, образования и производства, инновационное развитие, тройная спираль, поглощающая способность, сотрудничество университетов и промышленности, Узбекистан.

Introduction

Innovation is increasingly seen as the outcome of interaction among universities, research organizations and firms. Indicators of the supply of knowledge and skills in Uzbekistan have improved, but innovation outputs still rank below inputs, which suggests that the links between science, education and production may be a binding constraint. The thesis builds a framework that maps these links to measurable indicators and checks it against Uzbekistan's Global Innovation Index profiles.

Literature Review

The literature falls into four strands. The first concerns innovation systems: Lundvall describes innovation as an interactive learning process among firms, universities and institutions [1]. The second is the triple helix, in which Etzkowitz and Leydesdorff locate the source of innovation dynamics in the overlap of university, industry and government spheres [2]. The third is empirical: Jaffe found that academic research has positive spillover effects on corporate patenting [3], and Perkmann et al. review the forms of academic engagement and commercialization [4]. The fourth is absorptive capacity: firms benefit from external knowledge only if prior related knowledge lets them recognize, assimilate and apply it [5]. Together, they imply that

university knowledge raises innovation only when firms can absorb it and institutions connect both sides.

Results and Discussion

To test the framework, the four integration links are first mapped to Global Innovation Index indicators (Table 1). They are then examined with the Uzbekistan profiles of the 2025 and 2026 editions (Table 2).

Integration link	Mechanism	Indicator used as evidence
Education to science	training of researchers and STEM graduates supplies skills	Graduates in science and engineering; researchers per million
Science to production	joint R&D and knowledge transfer move research results into firms	University-industry R&D collaboration
Production to science and education	firms finance and demand research and train staff	GERD financed by business
Ecosystem coordination	clusters and intermediaries connect the three sides	Cluster development; innovation linkages

Table 1. Conceptual link between science-education-production integration and innovative development (compiled by the author based on [1;2;3;4;5])

Education supplies researchers and graduates, science passes knowledge on to firms, firms fund and demand research, and ecosystem institutions such as clusters coordinate the whole process. Only the first link measures knowledge supply; the rest measure integration proper [1;2].

Indicator	GII 2025	GII 2026

University-industry R&D collaboration (survey score)	33.5 (75th)	36.5 (71st)
Innovation linkages (sub-pillar score)	23.0 (78th)	23.1 (74th)
Knowledge absorption (sub-pillar score)	24.1 (81st)	17.8 (95th)
GERD financed by business, % of GERD	42.4 (41st)	38.5 (51st)
State of cluster development (survey score)	60.1 (44th)	58.2 (44th)

Table 2. Integration indicators of Uzbekistan in the Global Innovation Index, 2025 and 2026 editions (value or score, rank in brackets; source: WIPO) [6;7]

Table 2 shows where the integration deficit lies. University-industry collaboration improved only modestly, from 33.5 to 36.5 (75th to 71st), as did innovation linkages, from 23.0 to 23.1 (78th to 74th). Knowledge absorption, by contrast, fell from 24.1 to 17.8 (81st to 95th), and so did the business-financed share of R&D, from 42.4% to 38.5% (41st to 51st); the 2025 edition flags the latter figure as dated [6;7]. Cluster development stayed at 44th place (60.1 and 58.2). Supply indicators moved faster: science and engineering graduates reached 36.8% of graduates (second place, up from 13th with 32.8%), tertiary enrolment 59.8% (from 56.2%) and researchers 639.5 per million (from 542.1) [6;7]. Knowledge supply is thus outrunning its absorption by firms, in line with the World Bank's finding that growth in 2017-2022 came entirely from capital deepening and that productivity in industry and services is about one third of the upper-middle-income average [8].

Conclusion

Innovative development is shaped by the integration of science, education and production, not by the supply of knowledge alone. For Uzbekistan the framework points to four priority directions: (1) raise business funding of research, and demand for it, through co-financed R&D programs; (2) build firms' absorptive capacity - skills, R&D units and technology adoption; (3) strengthen intermediaries such as clusters, technology transfer offices and technology parks to improve innovation linkages; and (4) track integration with annual indicators such as university-industry collaboration and knowledge absorption. Two editions fit this reading but cannot prove causality, so future research should use firm-level innovation survey data.

References

[1] Lundvall, B.-A. (ed.). National Systems of Innovation. London: Pinter, 1992.

[2] Etzkowitz, H., Leydesdorff, L. The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university-industry-government relations. Research Policy, 2000, 29(2), 109-123.

[3] Jaffe, A. B. Real Effects of Academic Research. American Economic Review, 1989, 79(5), 957-970.

[4] Perkmann, M. et al. Academic engagement and commercialisation. Research Policy, 2013, 42(2), 423-442.

[5] Cohen, W. M., Levinthal, D. A. Absorptive Capacity: A New Perspective on Learning and Innovation. Administrative Science Quarterly, 1990, 35(1), 128-152.

[6] WIPO. Global Innovation Index 2026: Uzbekistan profile. Geneva: WIPO, 2026.

[7] WIPO. Global Innovation Index 2025: Uzbekistan profile. Geneva: WIPO, 2025.

[8] World Bank. Uzbekistan Country Economic Memorandum. Washington, DC: World Bank, 2025.

Global Conference Hub

INTERNATIONAL MULTIDISCIPLINARY SCIENCE CONFERENCE

VOLUME-1, ISSUE-10, 2026

TABLE OF CONTENTS | СОДЕРЖАНИЕ

1.	TYPOLOGICAL SIMILARITIES IN THE PLOT AND CHARACTER SYSTEMS OF THE EPICS “RAMAYANA” AND “GILGAMESH” Shamsiddinova Sitora	3-12
2.	THE LANGUAGE AND ARTISTRY OF “DEVONI SAYQALIY” Ikromova Xumora	13-17
3.	Spatial Characteristics of Healthcare Provision in the Fergana Region Xolmirzayeva Zulayxo	18-27
4.	ORAL MICROBIOTA AND CARIES INTENSITY IN PATIENTS WITH CHRONIC PERIODONTITIS AND GALLSTONE DISEASE UNDER COMPLEX TREATMENT Muhiddinov Abdurakhmonjon, Kazakova Nozima	28-31
5.	TRANSFORMATION OF YOUNG PEOPLE’S CULTURAL THINKING IN THE CONTEXT OF GLOBALIZATION: A THEORETICAL ANALYSIS OF CULTURAL DIFFUSION AND ACCULTURATION PROCESSES Abdurahimov Bobur	32-37
6.	Problems of Freshwater Resource Depletion and Rational Use of Water Resources Karimov Farohiddin	38-42
7.	ECONOMETRIC MODELING OF FACTORS DETERMINING INDUSTRIAL PRODUCTION EFFICIENCY IN THE REGIONS OF UZBEKISTAN AND ASSESSMENT OF ITS GROWTH POTENTIAL Sobirova Nazokat	43-51
8.	TYPOLOGICAL CLASSIFICATION OF NON-EQUIVALENT LEXICAL UNITS IN ENGLISH AND UZBEK Nuriddinova Dildora	52-55
9.	MODIFICATION OF HYALURONIC ACID WITH AMINO	56-59

	ACIDS Alieva Shakhzodakhon	
10.	READINESS OF FUTURE ENGINEER-PEDAGOGUES TO WORK WITH DIGITAL DATA, MONITORING, AND INFORMATION SECURITY: ANALYSIS OF A DIAGNOSTIC SURVEY Rakhmonkulov Akmal	60-66
11.	THE HARMONY OF THE METAPHYSICAL WORLD IN EASTERN AND WESTERN MYSTICAL LYRICISM Avezov Elbek	67-73
12.	THE ROLE AND IMPORTANCE OF VOLLEYBALL IN THE DEVELOPMENT OF MASS SPORTS Gafurova Xushvaqt	74-82
13.	THEORETICAL AND METHODOLOGICAL FOUNDATIONS FOR USING DSTI AND DTI INDICATORS IN ASSESSING HOUSEHOLD DEBT BURDEN Raxmanova Odinaxon	83-86
14.	THE USE OF ARTIFICIAL INTELLIGENCE TOOLS IN ASSESSING STUDENTS' SPEAKING PROFICIENCY Zayniyeva Gulchaman	87-90
15.	SEMANTIC AND SYNTACTIC FEATURES OF TRANSITIVE AND INTRANSITIVE VERBS IN ENGLISH AND UZBEK Gulbahor Turgunboeva	91-96
16.	The Artistic Interpretation of Love and the Idea of Human Perfection in the Works of Alisher Navoi and Goethe Tillabayeva Zuhraxon	97-99
17.	THE CURRENT STATE OF KNOWLEDGE OF THE BRANCHIOPODA (CRUSTACEA) FAUNA IN THE AQUATIC ECOSYSTEMS OF KHOREZM REGION Masharipova Anajon	100-110
18.	DEVELOPING HIGH-LEVEL THINKING SKILLS IN FUTURE TEACHERS THROUGH PROBLEM-BASED LEARNING AND MATHEMATICAL TASKS Yunusova Gulnoza	111-120

19.	IMPACT OF FINANCIAL EDUCATION ON WOMEN ENTREPRENEURSHIP AND BUSINESS GROWTH ODINAYEVA SITORA	121-125
20.	TECHNOLOGICAL AND INSTITUTIONAL BARRIERS TO INFORMATION RETRIEVAL Sharipova Guzal	126-132
21.	MANAGEMENT PRINCIPLES OF GENERAL SECONDARY EDUCATION SCHOOL PRINCIPALS Shomurodova Mamuraxon	133-141
22.	PEDAGOGICAL OPPORTUNITIES FOR DEVELOPING STUDENTS' CIVIC RESPONSIBILITY BASED ON NATIONAL VALUES IN LEGAL EDUCATION Tursunboyeva Xushnozbegim	142-152
23.	Mineral-Controlled Vapor Quality and Feedstock Operating Window for HZSM-5 Aromatization of Oil-Shale Pyrolysis Vapors Sh. Mengliyev, Sh. Gulomov, R. Khabipov	153-157
24.	INVESTIGATION OF NUMERICAL MODELING OF BUILDINGS WITH DRY-FRICTION SEISMIC ISOLATION Boltaboyev Muslimbek, Qodirov Sardor, Maxmudov Said	158-164
25.	International Legal Protection of the Right to a Clean, Healthy and Sustainable Environment Kholboev Umarjon	165-174
26.	THE IMAGE OF HAKIMS (SAGES) IN THE "KHAMSA" EPICS Madina Tolibova	175-181
27.	METHODOLOGICAL FEATURES OF DEVELOPING FUNCTIONAL COMPETENCE IN FUTURE TEACHERS BASED ON AN ACMEOLOGICAL APPROACH Kunnazarova Bibikhadicha	182-186
28.	The metaphysical world in the poetry of Boborahim Mashrab and William Blake Turayev Jasurbek	187-193
29.	PEDAGOGICAL POSSIBILITIES OF DEVELOPING AN INDIVIDUAL APPROACH TO STUDENTS BASED ON DIGITAL	194-199

	LEARNING TOOLS Zayniddinova Nafisa	
30.	RELATIONSHIPS BETWEEN ORAL AND WRITTEN LITERATURE IN TURKIC PEOPLES' LITERATURE Vaisova Mohigul	200-206
31.	GENRE CHARACTERISTICS OF THE POEMS IN "BAYOZI SULTON" Sodiqova Maftuna	207-209
32.	MORPHOGENETIC CHARACTERISTICS OF HYDROMORPHIC SOILS IN THE ARID AGRICULTURAL LANDSCAPES OF THE FERGANA VALLEY AND THEIR ANTHROPOGENIC TRANSFORMATION Akbarov Sarvarbek	210-213
33.	THE CONTRIBUTION OF THE TIMURID RENAISSANCE TO MODERN SCIENCE O. Norov	214-217
34.	The Significance of Combining Professions and Positions and Secondary Employment Contracts in Labour Law and Social Security Law Kholxo'jayev Azizxon	218-224
35.	ENHANCING THE METHODOLOGY FOR ECONOMIC ANALYSIS OF CONSTRUCTION SERVICE EXPENDITURES AT SOCIAL FACILITIES Gapparov Azim	225-238
36.	Termination of Criminal Proceedings with the Consent of the Individual Without Determining Guilt: Problems and Ways to Improve Legislation Bayniyazova Elmira	239-245
37.	Long-Term Hydrological Changes in the Aydar-Arnasay Lake System and Modern Methods for Their Study Jumayev Zohid	246-266
38.	Data-Driven Estimation of the Permissible Running Speed of a Self-Propelled Railcar from Frame Strain-Gauge Measurements Izzatillo Rakhmiddinov	267-270

39.	THE SOCIAL SIGNIFICANCE OF THE "GREEN ISLAM" CONCEPT: GLOBAL EXPERIENCE AND OPPORTUNITIES FOR UZBEKISTAN Alimov Muhammadali, Masudxon Ismoilov	271-276
40.	WOMEN'S PARTICIPATION AND HEROISM ON THE HOME FRONT DURING WORLD WAR II (THE CASE OF THE SYRDARYA REGION) Mamadaliyeva Shoxista	277-282
41.	WAYS TO IMPROVE ADVERTISING ACTIVITIES WITHIN THE SYSTEM OF THE NATIONAL TELEVISION AND RADIO COMPANY OF UZBEKISTAN (NTRC) Olimova Nodira	283-291
42.	Vulnerability Analysis of Privacy-Preserving Algorithms in Multidimensional Medical and Nutritional Databases Yusupov Bahodir	292-296
43.	PHYSICAL EDUCATION OF STUDENTS IN HIGHER EDUCATION INSTITUTIONS Khabibova Kamila	297-305
44.	THE ECOLOGICAL SIGNIFICANCE OF THE HABITAT OF WATERBIRDS IN THE TODAKOL RESERVOIR Valiyeva Feruza	306-315
45.	THE PROBLEM OF HUMAN BEINGS IN THE PHILOSOPHICAL WORLDVIEW Sh. Mirabdullaeva	316-324
46.	THE LEXICAL EXPRESSION OF MONETARY AND DEBT RELATIONS IN DĪWĀN LUGHĀT AL-TURK Allabergenov Nurbek	325-332
47.	Global Trends in Overtourism and Their Impact on the Sustainable Development of Tourist Destinations Isrofilov Firdavs	333-340
48.	METHODOLOGICAL ASPECTS OF ECONOMETRIC MODELING OF THE IMPACT OF WOMEN'S ENTREPRENEURSHIP ON IMPROVING THE EFFICIENCY OF HIGHER EDUCATION SERVICES	341-345

	Kubayiva Sarvinoz	
49.	Artificial to the intellect based flexible education technologies current to grow methodology Jumanov Abbas	346-350
50.	The Pedagogical and Psychological Essence of Forming and Developing the Deontological Competence of Future Teachers in the Higher Education System Yoqubova Maftuna	351-356
51.	THE AESTHETICS OF JAPANESE PUNK IN CONTEMPORARY CLOTHING DESIGN K. Abu-Sharip, M. Dzhakipbekova	357-370
52.	PRIMARY PREVENTION OF CARDIOEMBOLIC STROKE IN ATRIAL FIBRILLATION AND THE ROLE OF ANTICOAGULANT THERAPY Sultonmurodov Baxtiyorjon	371-374
53.	A METHODOLOGY FOR USING THE SILKROAD.LAB-XR SYNERGETIC DIGITAL LEARNING PLATFORM TO DEVELOP THE PROFESSIONAL COMMUNICATIVE COMPETENCE OF FUTURE TOURISM SPECIALISTS Mexmonaliyeva Gullolaxon	375-379
54.	AN ECOLOGICALLY BASED INTEGRATED MANAGEMENT STRATEGY FOR PLANT-PARASITIC NEMATODES IN DOG ROSE PLANTATIONS Turopova Muxlisa	380-388
55.	INNOVATIVE TECHNOLOGIES AND PROSPECTS FOR COMPLEX PROCESSING OF LOCAL DOLOMITE RAW MATERIALS O. Mixliyev, E. Xushvaqtov	389-393
56.	TOPIC: APPLICATION OF ARTIFICIAL INTELLIGENCE IN MANAGEMENT SYSTEMS: ADVANCED MODELS, AUTOMATION, AND STRATEGIC PERSPECTIVES Siradjev Salokhiddin, Abdisoatov Ogabek	394-397
57.	TOPIC: SYSTEMIC INTEGRATION OF ARTIFICIAL INTELLIGENCE IN ACADEMIC AFFAIRS DEPARTMENTS:	398-401

	STRATEGIC MODEL, ALGORITHMIC FRAMEWORKS, AND METHODOLOGICAL FOUNDATIONS Siradjev Salokhiddin, Abdisoatov Ogabek	
58.	TAXONOMIC CRITERIA FOR THE MORPHOMETRIC DIAGNOSIS OF NEMATODES IN THE ROOTS AND RHIZOSPHERE OF DOG ROSE (ROSA CANINA L.) Turopova Muxlisa	402-410
59.	CRITERIA FOR ASSESSING THE PHYTOSANITARY RISK OF PLANT-PARASITIC NEMATODES IN THE DOG ROSE ROOT ZONE Turopova Muxlisa	411-418
60.	MAIN DIRECTIONS OF PREPARING FUTURE SPECIAL EDUCATORS FOR THE CORRECTION OF ATTENTION DEFICIT HYPERACTIVITY DISORDER IN CHILDREN Khasanova Mashkhura	419-426
61.	Economic Growth, Small-Business Employment and Poverty Reduction in Uzbekistan: An ARDL Bounds-Testing Analysis of Real Household Income, 2010–2025 Djurayev Turabay	427-431
62.	IMPROVING THE ORGANIZATIONAL AND ECONOMIC MECHANISM OF CUSTOMS ADMINISTRATION TO SUPPORT FOOD SECURITY Matkarimova Iroda	432-438
63.	METHODS FOR ANALYZING PCR RESULTS AND IDENTIFYING DIAGNOSTIC SIGNALS USING INFORMATION TECHNOLOGIES Nodira Xolboyeva	439-444
64.	HIGH-TEMPERATURE ANNEALING OF ITO (In2O3: Sn) OXIDE FILMS IN VACUUM AND NEUTRAL ENVIRONMENTS Muzafarova Sultanpasha, Yuldashev Abrorjon, Nurmatova Sevara	445-449
65.	INDEPENDENT THINKING OF THE INDIVIDUAL AND PROTECTION AGAINST THE INFLUENCE OF SOCIAL CONSCIOUSNESS Bozorov Azizbek, Qochqarova Xushroy	450-461

66.	SPECIFIC FEATURES OF THE REPORTAGE GENRE IN ART JOURNALISM Aytmuratova Baxıtgúl	462-468
67.	The Impact of Integrating Science, Education and Production on Innovative Development: A Conceptual Framework and Evidence from Uzbekistan Odilova Dilnozaxon	469-474