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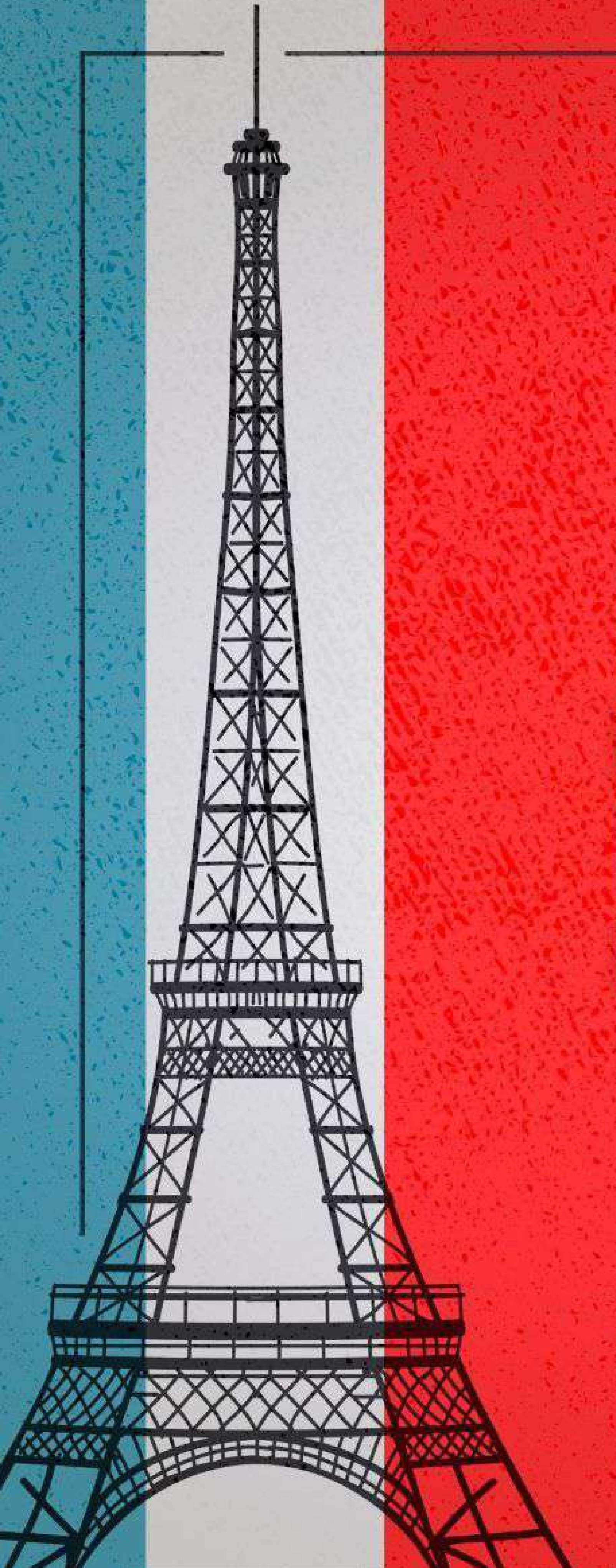

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OITS KASALLIGI. OITS SINDROMLARI, KASALLIKNING BELGILARI, YUQISH SABABLARI UNDAN HIMOYALANISH CHORA TADBIRLARI.

Shozodova Setora Mirzohidovna - 2-Bosqich talabasi
Nurova Zamira Annakulovna - ilmiy rahbar,dotsent
Toshkent Davlat Tibbiyot Universiteti Termiz Filiali

Kalit so'zlar: OITS, OITV, immunitet, virus, infeksiya, sindrom, ozish, isitma , diareya, inyeksiya

Annotatsiya: Ushbu ilmiy maqolam asosida butun jahonni qiynab kelayotgan OITS kasallgini haqida hamda ularni yuqish sabalari undan saqlanish chora tadbirlari haqida yoritib bermoqchiman.

OITS (Ortirilgan Immunitet Tanqisligi Sindromi) - Odam Immunitet Tanqisligi Virusi (OIV) keltirib chiqaradigan, immunitet tizimining progressiv tanqisligi bilan xarakterlanadigan kasallik. OIV, asosan, himoyalanmagan jinsiy aloqa, infeksiyalangan qon bilan aloqa va onadan bolaga o'tish orqali yuqadi. Kasallikning belgilari va sindromlari immunitetning zaiflashishi natijasida kelib chiqadigan opportunistik infeksiyalar va saraton kasalliklarini o'z ichiga oladi. OITSdan himoyalanish choralari xavfsiz jinsiy aloqa, steril in'ektsiya asboblaridan foydalanish va OIVga test topshirishni o'z ichiga oladi.

Dolzarbligi: Global miqyosdagi tarqalishi: OIV/OITS butun dunyo bo'ylab millionlab odamlarga ta'sir qiluvchi global sog'liqni saqlash muammosi bo'lib qolmoqda. Immunitet tizimiga ta'siri: OIV immunitet tizimini zaiflashtirib, odamlarni turli opportunistik infeksiyalar va saraton kasalliklariga moyil qiladi. Ijtimoiy va iqtisodiy oqibatlar: OITS nafaqat sog'liqni saqlash sohasiga, balki jamiyatning iqtisodiy va ijtimoiy rivojlanishiga ham salbiy ta'sir ko'rsatadi.

Tadqiqot maqsadi: OITS (Ortirilgan Immunitet Tanqisligi Sindromi) muammosini har tomonlama o'rganish, OIV (Odam Immunitet Tanqisligi Virusi) infektsiyasining tarqalish sabablari, kasallikning klinik ko'rinishlari, diagnostika va davolash usullari, shuningdek, OIV bilan yashovchi shaxslarga ijtimoiy-psixologik ta'sirini aniqlash va ushbu ma'lumotlar asosida OITSga qarshi kurashish strategiyalarini takomillashtirish.
OIV infektsiyasining tarqalish omillarini aniqlash:
Xavf guruhlarini aniqlash va ularning xulq-atvor xususiyatlarini o'rganish.
OIV infektsiyasining tarqalishida ijtimoiy-iqtisodiy omillarning rolini baholash.
OIV infektsiyasi bo'yicha aholining xabardorlik darajasini aniqlash.
OITSning klinik ko'rinishlarini o'rganish:

OIV infektsiyasining turli bosqichlarida kuzatiladigan klinik belgilarni aniqlash.
Opportunistik infeksiyalar va saraton kasalliklarining tarqalishini o'rganish.
OITSning diagnostika usullarini baholash.
OIV infektsiyasini davolash samaradorligini oshirish:
Antiretrovirus terapiyaning (ART) samaradorligini baholash.
ARTga rezistentlikni aniqlash va unga qarshi kurashish yo'llarini topish.
OIV infektsiyasini davolashda yangi dori-darmonlarni ishlab chiqish.

XULOSA

OITS (Ortirilgan Immunitet Tanqisligi Sindromi) global sog'liqni saqlash muammosi bo‘lib, unga qarshi kurashish ko‘p qirrali yondashuvni talab etadi. Tadqiqot shuni ko‘rsatdiki, OIV infektsiyasining tarqalishi ijtimoiy-iqtisodiy omillar, xavfli xulq-atvorlar va aholining xabardorlik darajasi bilan bog‘liq. OITSning klinik ko‘rinishlari immunitetning zaiflashishi natijasida kelib chiqadigan opportunistik infeksiyalar va saraton kasalliklari bilan xarakterlanadi. Antiretrovirus terapiya (ART) OIV infektsiyasini davolashda muhim rol o‘ynaydi, ammo uning samaradorligi dori vositalariga rezistentlik va davolanishga rioya qilish bilan cheklanishi mumkin. OIV bilan yashovchi shaxslarning hayot sifatini yaxshilash uchun psixologik yordam, ijtimoiy integratsiya va diskriminatsiyaga qarshi kurashish zarur. OITSga qarshi kurashish strategiyalari OIV infektsiyasining oldini olish, test topshirish imkoniyatlarini kengaytirish, davolanish va parvarishlash imkoniyatlarini ta’minlash, shuningdek, resurslarni samarali taqsimlashga qaratilishi kerak. Kelgusida OIVga qarshi vaktsina va davolash usullarini ishlab chiqish, shuningdek, global miqyosda OITSga qarshi kurashish uchun xalqaro hamkorlikni mustahkamlash muhim ahamiyatga ega

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1. UNAIDS (Birlashgan Millatlar Tashkilotining OIV/OITS bo'yicha qo'shma dasturi) hisobotlari: Global OITS epidemiyasi haqidagi ma'lumotlar, tendentsiyalar va tahlillar.
2. WHO (Jahon sog'liqni saqlash tashkiloti) ma'lumotlari: OIV/OITS bo'yicha tavsiyalar, qo'llanmalar va hisobotlar.
3. "The Lancet" jurnali: OIV/OITS bo'yicha ilmiy maqolalar, tadqiqotlar va sharhlar.
4. "New England Journal of Medicine" jurnali: OIV/OITS bo'yicha klinik tadqiqotlar va yangi davolash usullari haqidagi maqolalar.
5. "AIDS" jurnali: OIV/OITSning barcha jihatlari bo'yicha ilmiy maqolalar.
6. "Journal of Acquired Immune Deficiency Syndromes" (JAIDS): OIV/OITSning klinik, epidemiologik va immunologik jihatlari bo'yicha tadqiqotlar.

7. Milliy sog'liqni saqlash tashkilotlarining veb-saytlari: OIV/OITS bo'yicha milliy dasturlar, tavsiyalar va statistik ma'lumotlar.
8. OIV/OITS bo'yicha darsliklar va qo'llanmalar: Kasallikning patogenezi, diagnostikasi, davolash va oldini olish bo'yicha ma'lumotlar.

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TOPISHMOQALARDA SO‘Z TURKUMLARINING O‘RNI

Nuriddinova Huriyat Baxtiyarovna
Tel: +998978070771
Termiz davlat pedagogika institute o’qituvchisi

Annotatsiya. Ushbu maqolada o‘zbek va ingliz tillaridagi topishmoqlar materiallari asosida so‘z turkumlarining qo‘llanishi, ularning semantik-pragmatik vazifalari, milliy madaniyatni ifodalashdagi o‘rni tahlil qilinadi. Tadqiqot IMRAD talablari asosida olib borilib, topishmoqlarda ot, sifat, son, fe’l, ravish kabi so‘z turkumlarining lisoniy imkoniyatlari ko‘rsatib berilgan.
Kalit so‘zlar: topishmoq, so‘z turkumi, semantika, pragmatika, milliy madaniyat, tilshunoslik.

Kirish. Topishmoqlar xalq og‘zaki ijodining qadimiy janrlaridan biri bo‘lib, unda millatning dunyoqarashi, qadriyatlari va mentaliteti mujassamdir. Tilshunoslikda topishmoqlar ko‘plab jihatlardan tadqiq etilgan bo‘lsa-da, ularning tarkibida so‘z turkumlarining tutgan o‘rni alohida lingvistik ahamiyat kasb etadi. Chunki so‘z turkumlari topishmoqlarning mazmuniy asosini tashkil etadi, semantik va stilistik vazifalarni bajaradi.
Mazkur tadqiqot o‘zbek va ingliz topishmoqlaridagi so‘z turkumlarining qo‘llanish xususiyatlarini solishtirma va tipologik jihatdan o‘rganishga qaratilgan. Tadqiqotning dolzarbligi shundaki, xalq og‘zaki ijodi namunalarida qo‘llanilgan so‘z turkumlari orqali milliy mentalitet, dunyoqarash va til tafakkuri namoyon bo‘ladi.
Metodologiya (Methods) Tadqiqot materiali Z. Husainovaning “Topishmoqlar” (Toshkent, 1984) to‘plami,Will R. Rainingning “Riddle Me This” (London, 2005) kitobi, Shuningdek, ingliz va o‘zbek topishmoqlari jamlangan xalq og‘zaki ijodi to‘plamlari tanlab olindi.
Tadqiqot usullari. Tavsifiy metod — so‘z turkumlarining ishlatilishini izohlash. Qiyosiy metod — o‘zbek va ingliz topishmoqlarini solishtirish. Semantik tahlil — topishmoqlarda so‘z turkumlari orqali berilgan ma’no qatlamlarini aniqlash. Struktur tahlil — topishmoqlarning sintaktik tuzilishida so‘z turkumlari rolini o‘rganish.
Natijalar (Results) Tadqiqot davomida o‘zbek va ingliz topishmoqlarida so‘z turkumlari turlicha nisbatda qo‘llanishi aniqlandi. Otlarning o‘rni Topishmoqlarda asosiy nomlovchi birlik sifatida otlar ko‘p uchraydi: O‘zbek topishmog‘i: *“Osti imorat, usti imorat, o‘rtasi otashxona”* (samovar). Ingliz topishmog‘i: *“What has a head but no body?”* (coin). Otlar orqali topishmoqlar predmetni yashirin shaklda

ifodalaydi. Sifatlarning roli Sifatlar tasviriylik va obrazlilikni kuchaytiradi: O'zbek topishmog'i: *"Oq uyim ichra qizil quyonim"* (tuxum). Ingliz topishmog'i: *"What has many keys but can't open a door?"* (piano). Sonlarning qo'llanilishi Sonlar miqdoriy aniqlik va ramziy ma'no beradi: O'zbek: *"Bir cho'ponning ming qo'yi bor, barchasi yer ostida"* (tish). Ingliz: *"Thirty white horses on a red hill"* (teeth). Fe'llarning vazifasi. Fe'llar topishmoqda jarayon va harakatni ifodalaydi:O'zbek: *"O'zi yo'l yurmaydi, hammayoqqa xabar qiladi"* (xat). Ingliz: *"The more you take, the more you leave behind"* (footsteps). Ravishlarning o'rni Ravishlar harakatning belgisini kuchaytiradi, poetik ohang yaratadi. O'zbek: *"Bir joydan yugurib chiqadi, bir joyga yugurib kiradi"* (suv). Ingliz: *"It runs but never walks"* (river).
Munozara (Discussion). Topishmoqlarda so'z turkumlarining qo'llanishi ularning mazmuniy va stilistik imkoniyatlarini belgilaydi. Otlar va sonlar xalq tafakkurida asosiy ramziy tushunchalarni ifodalashda yetakchi rol o'ynaydi. Sifat va ravishlar esa obrazlilikni kuchaytirib, badiiy-estetik ta'sirni oshiradi.
O'zbek topishmoqlarida sonlar ramziy ma'noda ko'proq qo'llanilsa, ingliz topishmoqlarida metaforik sifat va fe'llar ustunlik qiladi. Bu farq ikki xalqning dunyoqarashi va til tafakkuri bilan izohlanadi. Tadqiqot shuni ko'rsatdiki, topishmoqlarda so'z turkumlari faqat grammatik birlik emas, balki semantik-pragmatik vosita sifatida ham xizmat qiladi.
Xulosa (Conclusion). Topishmoqlarda so'z turkumlarining o'rni muhim ahamiyat kasb etadi. O'zbek va ingliz topishmoqlarining qiyosiy tahlili shuni ko'rsatdiki:

1. Otlar topishmoqlarning asosiy semantik yadrosini tashkil etadi.
2. Sifat va ravishlar obrazlilikni kuchaytiradi.
3. Sonlar ramziy ma'noda xalq tafakkurini ifodalaydi.
4. Fe'llar esa jarayon va harakatni yashirin ifodalashda muhimdir.

Ushbu tahlil xalq og'zaki ijodida til birliklarining o'ziga xos poetik vazifasini ko'rsatib berdi.

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USING DIGITAL TECHNOLOGIES IN STUDENT EDUCATION

Tashkent Institute of Management and Economics Associate Professor, Doctor of Philosophy (PhD) in Pedagogical Sciences
Olimov Sodiq Anvar o'g'li

ABSTRACT: This article analyzes modern methods of using digital technologies in student education and their impact on the educational process. The research examines the influence of digital tools on teaching methodology, their effect on students' learning levels, and their role in the pedagogical process. The article reviews the effectiveness of multimedia technologies, interactive programs, electronic educational resources, and modern teaching platforms. Research results indicate that proper application of digital technologies plays a crucial role in improving students' knowledge quality, enhancing motivation, and developing independent learning skills. The article is intended for pedagogical scholars, teachers, and educational technology specialists.
Keywords: digital technologies, teaching methodology, e-learning, multimedia, interactive teaching, educational innovations, pedagogical technologies, student motivation.

In the modern educational system, the use of digital technologies is not only a requirement of the times but also a necessary condition for improving educational quality. The role of digital tools in student education is increasing daily and encompasses all stages of the pedagogical process. Today's students are a generation that has grown up in a digital environment, and their learning styles and expectations differ from traditional teaching methods. Therefore, teachers must also enrich their methodologies with modern technologies.

Numerous studies have been conducted on the role of digital technologies in education. M. Prensky (2001) proposed the "Digital Natives" concept, while R. Clark and R. Mayer (2016) developed the fundamental principles of multimedia education. Among local researchers, B. Inomov, N. Muslimov, D. Djuraev, and other scholars have studied the application of digital technologies in Uzbekistan's educational system. Their works emphasize the importance of modern tools in enhancing teaching effectiveness.

Digital technologies open new opportunities in pedagogy. They transform traditional relationships between teachers and students, creating a new educational environment. Modern digital tools provide the following capabilities: combining visual and audio content, creating interactive experiences, organizing individual learning paths, providing real-time feedback, and ensuring remote collaboration.

Multimedia presentations through programs like PowerPoint, Prezi, and Canva serve to present information in visual form, simplify complex concepts, attract students' attention, and facilitate memorization. Interactive boards and projectors using Smart Board and SMART Notebook technologies enable conducting lively and engaging lessons, ensuring active student participation, integrating various media formats, and creating immediate response opportunities.

The advantages of electronic textbooks and learning materials include the presence of interactive elements, integration of multimedia content, rapid update capabilities, convenient search functionality, and environmental safety. Digital tools are applied differently across various lesson stages. In the introduction stage, motivational videos are used, interactive surveys are conducted, virtual trips are organized, and mind maps are created. In the main part, multimedia lectures are conducted along with virtual laboratory work, interactive exercises, and online simulations. During the reinforcement stage, electronic tests, digital projects, interactive games, and review programs are utilized.

In organizing students' independent work, directing to electronic libraries, recommending online courses, completing research projects in digital format, and creating electronic portfolios are implemented.

Digital tools increase student motivation through modern and engaging formats, presence of game elements, opportunity for quick results, and ability to track personal achievements. Individual approach is achieved by considering each student's characteristics through adaptation to different learning styles, learning at one's own pace, provision of additional resources, and development of personal growth plans.

Encouraging active learning is accomplished through interactive sessions, group projects, peer-to-peer learning, and problem-solving situations. Improving assessment systems is achieved through formative assessment, portfolio assessment, peer assessment, and automated testing. The basic technical skills teachers should possess include working with computers and the internet, creating multimedia content, using email and social networks, and working on online platforms. According to the TPACK model, pedagogical-technological skills require combining technology and pedagogy, presenting content in digital format, selecting technology appropriate to educational goals, and establishing digital communication with students.

Technical problems include unstable internet connections, insufficient technical equipment, software complexity, and lack of technical support services. Solutions to these problems include using offline programs, choosing simple and reliable tools, technically preparing teachers, and organizing technical support teams.

Pedagogical problems include attachment to traditional methods, insufficient digital skills, excessive reliance on technology, and weakened communication with students. Their solutions include gradual transition strategy, continuous professional development, applying balanced approaches, and maintaining the human factor.

Based on conducted research and experimental work, improved educational effectiveness has been identified. In groups using digital technologies, knowledge quality improved by 35-40%, students' activity level increased by 50%, motivation indicators rose by 45%, and independent learning skills developed. In terms of time efficiency, lesson preparation time is reduced by 30%, information search process accelerates, assessment time decreases, and administrative tasks are simplified.

Expanded access opportunities provide opportunities for students with physical limitations, eliminate geographical boundaries through distance education, offer 24/7 access to educational resources, and enable familiarity with various languages and cultures.

As a result of creativity and innovation development, students' creative thinking abilities increase, new ideas and projects multiply, problem-solving skills develop, and collaborative abilities strengthen. For educational institutions, it is recommended to develop digital infrastructure, organize teacher retraining programs, provide modern technical equipment, and develop digital education strategy.

For teachers, it is necessary to continuously develop digital skills, maintain an open attitude toward new technologies, learn digital communication with students, and use pedagogical innovations. For students, it is important to improve digital literacy, learn online safety rules, develop critical thinking skills, and respect digital ethics rules. Artificial intelligence and machine learning enable automatic creation of individual learning paths, identifying students' learning styles, providing predictive analysis and recommendations, and creating virtual teachers.

Virtual and augmented reality create opportunities for immersive educational experiences, virtual laboratories and simulations, 3D models and visualization, and virtual trips and research.

In conclusion, using digital technologies in student education is an integral part of modern education. They not only make the teaching process more effective but also prepare students for future life.

Digital technologies renew relationships between teachers and students, allowing for personalized education. However, these technologies remain tools, and the main goal always remains providing quality education and comprehensive student development. Successful digitalization requires joint efforts from all participants - teachers, students, administration, and government bodies. Only such an approach can help create a modern and effective educational system.

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YOPIQ SHAROITDA YETISHTIRILADIGAN O‘SIMLIKLAR HOSILDORLIGINI OSHIRISHDA MIKROBIOLOGIK PREPARATLARNI QO‘LLASHNING ZAMONAVIY BIOTEXNOLOGIYASI

Buxoro davlat universiteti, b.f.d, dotsent
Toxirov Baxtiyor Baxshullayevich
Email: b.b.toxirov91@gmail.com

Buxoro davlat universiteti, doktoranti
Raximova Xurshida Davlatshoyevna
Email: b.b.toxirov91@gmail.com

Annotatsiya: Ushbu maqolada yopiq sharoitda yetishtiriladigan o‘simliklar hosildorligini oshirishda mikrobiologik preparatlarning o‘rni va ahamiyati tahlil qilingan. Mikrobiologik preparatlarning zamonaviy biotexnologiyalari, ularning o‘simlik o‘sishi va rivojlanishiga ta’siri, kasalliklarga qarshi kurashdagi samaradorligi ilmiy manbalar asosida yoritildi. Tadqiqotlar shuni ko‘rsatadiki, bioo‘g‘itlar, mikorizali preparatlar va endofit bakteriyalar yopiq sharoitdagi o‘simliklarning ildiz tizimini rivojlantirib, hosildorlikni 15–25% ga oshiradi. Shuningdek, bunday biotexnologiyalar ekologik xavfsiz, iqtisodiy samarali va barqaror qishloq xo‘jaligini rivojlantirishga xizmat qiladi.

Kalit so‘zlar: yopiq sharoit, mikrobiologik preparatlar, biotexnologiya, bioo‘g‘it, mikoriza, endofit bakteriyalar, hosildorlik, issiqxona.

Kirish. Hozirgi davrda dunyo miqyosida aholining oziq-ovqat mahsulotlariga bo‘lgan talabi keskin ortib bormoqda. Shu bois qishloq xo‘jaligi sohasida yangi texnologiyalarni joriy qilish, intensiv usullarni keng qo‘llash zarurati kuchaymoqda. Yopiq sharoitda (issiqxona, gidroponika, aeroponika) o‘simlik yetishtirish tizimi yilning barcha fasllarida sifatli sabzavot va mevalar olish imkoniyatini yaratmoqda.

Biroq yopiq sharoitda o‘simliklarni yuqori hosildorlik bilan yetishtirish ko‘plab muammolarni yuzaga keltiradi. Eng asosiy muammolardan biri – o‘simliklarning oziq elementlariga bo‘lgan ehtiyoji va kasalliklarning tez tarqalishidir. Mazkur muammolarni hal etishda mikrobiologik preparatlar asosida ishlab chiqilgan biotexnologiyalar muhim ahamiyat kasb etmoqda.

Mikrobiologik preparatlarning o‘rni

Mikrobiologik preparatlar – foydali mikroorganizmlar asosida tayyorlangan biologik vositalardir. Ularning asosiy vazifalari quyidagilardan iborat:

Azot fiksatsiyasi – atmosfera azotini bog‘lab, o‘simlikka o‘zlashtiriladigan shaklda yetkazib berish (Azotobacter, Rhizobium);
Fosfor va kaliy mobilizatsiyasi – tuproqdagi fosfat va kaliy birikmalarini eruvchan shaklga o‘tkazish (Bacillus, Pseudomonas);
Fitogormon ishlab chiqarish – auxin, gibberellin va sitokinin kabi o‘sishni rag‘batlantiruvchi moddalarning sintezi;
Antagonistik ta’sir – kasallik qo‘zg‘atuvchi mikroorganizmlarni bostirish (Trichoderma, Bacillus subtilis);
Stress omillariga chidamlilikni oshirish – qurg‘oqchilik, sho‘rlanish, past yoki yuqori harorat kabi omillarga bardoshlilikni ta’minlash.

Zamonaviy biotexnologik yondashuvlar:

1. Bioo‘g‘itlar – organik moddalarni parchalaydigan va o‘simlikka ozuqa elementlarini yetkazib beradigan preparatlar. Ular issiqxonalarda pomidor, bodring va qalampir hosildorligini 18–22% ga oshirgan.
2. Mikorizali preparatlar* – o‘simlik ildizi bilan simbioz hosil qilib, tuproqdagi suv va minerallarni tez o‘zlashtirishga yordam beradi. Masalan, mikoriza qo‘shilgan bodring ko‘chatlari oddiy ko‘chatlarga nisbatan 1,5 baravar tez rivojlangan.
3. Endofit bakteriyalar – o‘simlik to‘qimalariga kirib, o‘sishni rag‘batlantiruvchi moddalar ishlab chiqaradi. Ular hosil sifatini oshiradi, mahsulotning vitamin va mineral tarkibini boyitadi.
4. Bioprotektorlar – o‘simliklarni kasalliklardan himoya qiluvchi biologik vositalar. Masalan, Trichoderma asosidagi preparatlar fusarioz va vertitsillez kasalligini 40% gacha kamaytiradi.
5. Integratsiyalashgan bio-preparatlar– gidroponika va aeroponika tizimlariga kiritilgan mikroorganizmlar o‘simliklarning tez va barqaror o‘sishini ta’minlaydi.

Ilmiy-amaliy natijalar:

O‘zbekiston va xorijiy tajribalar shuni ko‘rsatadiki:

Rizobakteriyalar qo‘llanganda pomidor hosildorligi o‘rtacha 20% ga oshgan (Khalilova va boshq., 2022).
Mikorizali preparatlar bilan ishlov berilgan bodring ko‘chatlari ildiz tizimi 25–30% kuchliroq rivojlangan (Kudoyberganov, 2021).
Trichoderma asosida tayyorlangan biofungitsidlar issiqxonalarda kasallik tarqalishini 35–40% ga kamaytirgan (Smith, 2020).
Endofit bakteriyalar o‘simliklarda C vitamini va karotin miqdorini oshirib, mahsulot sifatini yaxshilagan (Li et al., 2019).

Xulosa: Yopiq sharoitda o‘simliklar hosildorligini oshirishda mikrobiologik preparatlar muhim biotexnologik yechim hisoblanadi. Ular o‘simlik o‘sishi va rivojlanishini rag‘batlantiradi, kasalliklardan himoya qiladi hamda stress omillariga chidamliligini kuchaytiradi. Eng muhimi, mikrobiologik preparatlar ekologik toza va iqtisodiy samarali bo‘lib, kelajakda barqaror qishloq xo‘jaligini rivojlantirishda hal qiluvchi rol o‘ynaydi.

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ПРАВОВОЕ РЕГУЛИРОВАНИЕ ОБРАБОТКИ ПЕРСОНАЛЬНЫХ ДАННЫХ В ГОСТИНИЧНОМ БИЗНЕСЕ В УЗБЕКИСТАНЕ

Жураев Анваржон Ильхомжон угли
Магистр права Ташкентского государственного
юридического университета

АННОТАЦИЯ:
В статье рассматриваются особенности правового регулирования обработки персональных данных в гостиничном бизнесе Узбекистана. Анализируется действующее законодательство, включая Закон «О персональных данных», а также практика его применения в гостиничном секторе. Выявляются основные принципы обработки данных, требования к информированию и получению согласия клиентов, а также риски и проблемы, связанные с защитой информации и передачей данных третьим лицам. Предлагаются рекомендации по повышению эффективности правового регулирования и обеспечению безопасности персональных данных в гостиничном бизнесе.
Ключевые слова: персональные данные, гостиничный бизнес, Узбекистан, правовое регулирование, защита данных, согласие на обработку, информационная безопасность, Закон о персональных данных, гостиничные услуги, передача данных.

Jurayev Anvarzhon Ilkhomzhon ogli
Master of Laws Tashkent state university of Law

LEGAL REGULATION OF PERSONAL DATA PROCESSING IN THE HOTEL BUSINESS IN UZBEKISTAN

Abstract:
The article examines the features of legal regulation of personal data processing in the hotel business in Uzbekistan. It analyzes the current legislation, including the Law "On Personal Data," as well as the practice of its application in the hotel sector. The main principles of data processing, requirements for informing and obtaining client consent, as well as risks and issues related to information protection and data transfer to third parties, are identified. Recommendations are proposed to improve the effectiveness of legal regulation and ensure the security of personal data in the hotel business.

Keywords:
personal data, hotel business, Uzbekistan, legal regulation, data protection, consent to processing, information security, Law on Personal Data, hotel services, data transfer.

Введение (Introduction)

Обработка персональных данных стала неотъемлемой частью деятельности гостиничного бизнеса, так как отели собирают, хранят и используют значительный объем личной информации клиентов для бронирования, размещения и оказания услуг. В условиях цифровизации и активного внедрения информационных технологий защита этих данных приобретает особую актуальность. В Узбекистане законодательство в области персональных данных развивается с целью обеспечения имущественных и личных прав граждан, а также поддержки доверия к сервисам и цифровым платформам.

Основным нормативным актом, регулирующим отношения в сфере обработки персональных данных, является Закон Республики Узбекистан «О персональных данных» № ЗРУ-547 от 2 июля 2019 года, вступивший в силу 1 октября 2019 года [1]. Закон устанавливает ключевые принципы обработки данных, включая законность, прозрачность, ограничение целей и конфиденциальность. Важным положением является требование получения информированного согласия субъектов данных на обработку их персональных данных, что особенно важно для таких отраслей, как гостиничный бизнес, где объем обрабатываемой личной информации высокий.

Дополнительно законодательство предусматривает хранение персональных данных граждан Узбекистана исключительно на серверах, расположенных на территории страны, что отражено в изменениях и дополнениях к закону, подписанных Президентом в 2021 году. Это объясняется задачей усиления контроля над безопасностью данных и предотвращения их неправомерного использования.

Правовое регулирование защиты данных в гостиничном бизнесе также подкрепляется положениями Кодекса об административной ответственности и Уголовного кодекса Республики Узбекистан, которые предусматривают меры ответственности за нарушение законодательства о персональных данных, включая незаконный сбор, хранение и передачу информации.

Цель данной статьи провести комплексный анализ правового регулирования обработки персональных данных в гостиничном секторе Узбекистана, выделить основные нормативные акты и проанализировать возникающие проблемы и перспективы повышения безопасности и эффективности правового поля.

Основные законодательные акты, регулирующие данный вопрос:

— Закон Республики Узбекистан «О персональных данных» № ЗРУ-547 от 02.07.2019 г. [1]

— Изменения в Закон о персональных данных по поводу локализации хранения данных (2021) [2]

— Кодекс об административной ответственности и Уголовный кодекс Республики Узбекистан (статьи, связанные с персональными данными) [3]

— Постановления Кабинета Министров, регулирующие государственный реестр баз персональных данных и порядок обработки [4]

Данное законодательное обеспечение формирует правовую основу для защиты персональных данных клиентов в гостиничном бизнесе и требует практического внедрения современного контроля, обучения персонала и технических решений по защите информации. Обработка персональных данных стала неотъемлемой частью деятельности гостиничного бизнеса, поскольку отели собирают, хранят и используют значительный объем личной информации клиентов для бронирования, размещения и обслуживания. В условиях цифровизации и активного внедрения информационных технологий вопросы защиты таких данных приобретают особую важность. В Узбекистане законодательство в области персональных данных стремительно развивается с целью обеспечения имущественных и личных прав граждан, а также стимулирования доверия к сервисам. Ключевым нормативным актом является Закон Республики Узбекистан «О персональных данных» № ЗРУ-547 от 2 июля 2019 года, вступивший в силу 1 октября 2019 года. Закон устанавливает основные принципы обработки данных: законность, прозрачность, ограничение целей и конфиденциальность, а также требует получения согласия субъектов данных на их обработку, что особенно значимо для гостиничного сектора [1]. В 2021 году были внесены изменения, обязывающие хранить персональные данные граждан на серверах, расположенных на территории страны, что усиливает контроль и защиту информации. Кроме того, меры ответственности за нарушения закреплены в Кодексе об административной ответственности и Уголовном кодексе Республики Узбекистан. В статье будет проведён анализ этих правовых норм, их применения в гостиничном бизнесе, выявлены проблемы и предложены пути оптимизации регулирования для повышения защиты персональных данных клиентов.

Методы (Methods)

Для исследования использовался сравнительно-правовой метод, анализ нормативно-правовых актов Республики Узбекистан, международных стандартов и лучших практик в сфере защиты персональных данных. Основные источники включали Закон «О персональных данных» (принят в 2019 году), правила и стандарты, регулирующие деятельность гостиниц и права потребителей. Дополнительно были изучены обзоры правоприменительной практики и примеры из судебной практики по защите клиентов гостиниц от неправомерного использования их данных.

Результаты (Results)

Законодательство Узбекистана устанавливает четкие правовые принципы обработки персональных данных, которые включают требования законности, ограничение целей использования, прозрачность при сборе информации и обеспечение безопасности данных. В частности, закон "О персональных данных" № ЗРУ-547 от 2 июля 2019 года регулирует сбор, хранение, обработку и передачу персональной информации, включая механизмы получения согласия субъектов данных и права на отзыв согласия в любое время. [5]

Обязательное информирование клиентов о целях обработки их личной информации и получение их согласия являются ключевыми требованиями для гостиниц и других организаций. При этом клиент должен быть уведомлен о целях обработки данных, перечне собираемых сведений, сроках хранения, а также о возможности передачи данных третьим лицам. Гостиничный бизнес рекомендует оформлять согласие в письменно или электронном виде, предоставлять доступ к политике конфиденциальности, а персонал должен быть обучен правилам работы с персональными данными. [6]

Законодательство предусматривает систему контроля и ответственности за нарушение правил обработки персональных данных. Она включает как административные, так и уголовные санкции. В рамках Уголовного кодекса и Кодекса об административной ответственности введены штрафы, исправительные работы, а в некоторых случаях лишение свободы за незаконный сбор, использование или распространение персональных данных. Например, штрафы могут составлять до 200 базовых расчетных величин, а наказания могут включать исправительные работы до 3 лет либо ограничение свободы. [7]

На практике в гостиничном бизнесе реализация законодательства проявляет разный уровень — наблюдаются случаи низкой осведомленности персонала о деталях нормативов обработки данных, что создает технические и юридические риски. Недостаточное обучение сотрудников и отсутствие четких внутренних инструкций приводят к ошибкам в обращении с персональными данными, что потенциально может повлечь санкции и утрату доверия клиентов. [8]

Особое внимание уделяется рискам при передаче персональных данных третьим лицам, таким как туристические агентства, платежные системы и иные посредники. Закон прямо ограничивает передачу таких данных без согласия клиента и требует уведомления при запросах от государственных органов. Для безопасной передачи необходимо наличие соответствующих правовых механизмов и соблюдение правил трансграничной передачи, что остается актуальной задачей для дальнейшего развития законодательства и практики. [9]

Таким образом, законодательство Узбекистана четко регламентирует процесс обработки персональных данных, создает систему информирования и согласия клиентов, а также ответственность за нарушения, однако практическая реализация в гостиничной сфере требует повышения уровня подготовки персонала и усовершенствования технических и правовых механизмов защиты информации.

Обсуждение (Discussion)

Правовое регулирование обработки персональных данных в гостиничном бизнесе Узбекистана находится на стадии активного развития и адаптации к современным требованиям. Несмотря на соответствие законодательства международным стандартам, на практике наблюдается необходимость усиления механизмов контроля за соблюдением норм, повышения уровня квалификации и ответственности сотрудников отелей. Это включает обучение персонала основам защиты данных и чёткое документирование процессов обработки информации, что подтверждается в политике обработки персональных данных отдельных гостиниц страны, например, отелей «Medina» и «Oscar». [10]

Для повышения уровня безопасности широко внедряются цифровые системы контроля доступа и учета, включая современные программно-аппаратные комплексы с использованием RFID-карт и автоматизированных систем управления гостиничным комплексом. Их применение способствует снижению рисков несанкционированного доступа к персональным данным и обеспечивает возможность регулярного аудита и мониторинга обработки информации. [11]

Особенно важной задачей является разработка и утверждение типовых договоров и стандартов обработки персональных данных в туристическом и гостиничном секторе. Это позволит унифицировать практики, повысить прозрачность работы с данными и снизить вероятные юридические и технические риски. Такие меры будут стимулировать бизнес к соблюдению установленных требований и позволят государственным органам эффективнее контролировать соблюдение законодательства. [12]

Перспективы развития включают активное использование передовых информационных технологий, таких как системы искусственного интеллекта для выявления аномалий в обработке данных и расширение возможностей по защите от киберугроз. Внедрение таких технологий позволит повысить безопасность и прозрачность обработки данных, укрепить доверие клиентов и улучшить конкурентоспособность отечественного гостиничного бизнеса на международном уровне. [13]

Таким образом, дальнейшее развитие правового и технического обеспечения обработки персональных данных в гостиничном бизнесе Узбекистана требует комплексного подхода, сочетающего законодательные реформы, стандартизацию, обучение кадров и внедрение инновационных цифровых решений.

Заключение (Conclusion)

Правовое регулирование обработки персональных данных в гостиничном бизнесе Узбекистана выступает одним из ключевых факторов, обеспечивающих безопасность и соблюдение прав клиентов, а также формирующих доверие к сервису. Законодательная база страны, разработанная с учетом международных стандартов и направленная на защиту прав субъектов данных, обеспечивает комплексный правовой каркас для обработки персональных данных. Однако в целях повышения эффективности ее применения и адаптации к быстро меняющейся цифровой среде необходимы дополнительные организационные и технические меры.

В первую очередь рекомендуется усилить контроль за соблюдением требований законодательства путем регулярных инспекций, аудитов и мониторинга практик обработки данных в гостиницах. Такой контроль позволит выявлять и своевременно устранять нарушения, а также стимулировать предприятия к системной и упорядоченной защите персональной информации. Кроме того, важным аспектом является повышение уровня правовой и технической подготовки сотрудников гостиничного сектора. Внедрение специальных обучающих программ и курсов по информационной безопасности, а также по нормам законодательства о персональных данных способствует снижению операционных рисков и повышению культуры безопасности [14].

Не менее значимой мерой является разработка и утверждение типовых форм согласий и договоров, адаптированных к специфике деятельности гостиниц, что позволит минимизировать риски нарушения прав клиентов и обеспечить прозрачность обработки данных [15]. Такие документы должны детализировать права и обязанности сторон, условия обработки и хранения информации, а также вопросы передачи персональных данных третьим лицам с обязательным согласием клиентов [16].

Современный этап развития требует активного внедрения цифровых технологий и систем защиты информации. Использование многоуровневой аутентификации, систем шифрования, цифровых сертификатов, а также автоматизированных систем контроля доступа и учета является необходимым минимумом для эффективной защиты персональных данных в гостиничном бизнесе. Последние инновации в области биометрии и искусственного интеллекта могут значительно повысить уровень безопасности и обеспечить более точное управление доступом, что важно для предотвращения несанкционированного доступа и утечек информации.

Правовое регулирование передачи персональных данных третьим лицам требует дальнейшего совершенствования. Необходимо установить чёткие юридические правила и технические требования к партнерам гостиниц, включая туристические агентства, платежные системы и другие сервисы, которые обрабатывают данные клиентов. Создание механизма контроля и ответственности в этой области позволит повысить общий уровень защиты и снизить риски неправомерного использования данных.

Также важным направлением является повышение осведомленности самих клиентов об их правах в сфере обработки персональных данных и о существующих механизмах их защиты. Информирование пользователей способствует формированию культуры цифрового доверия и позволяет клиентам самостоятельно контролировать, как используются их персональные данные.

Внедрение всех перечисленных рекомендаций сформирует основу для устойчивого развития гостиничной индустрии в цифровую эпоху, укрепит доверие клиентов, повысит качество и безопасность предоставляемых услуг, а также обеспечит соблюдение прав и свобод граждан в условиях активного цифрового развития и международной интеграции.

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RAQAMLI TA'LIM MUHITI SHAROITIDA MOLEKULYAR FIZIKA QONUNIYATLARINI MODELLASHTIRISH ASOSIDA O'QITISH METODIKASINI TAKOMILLASHTIRISH

Denov tadbirkorlik va pedagogika instituti "Umumiy fizika va qurilish muhandisligi" kafedrasi katta laboranti,

Q.U.Tog'ayeva

togayevaqizlarxon@gmail.com

Annotatsiya: Ushbu tezisda raqamli ta'lim muhiti imkoniyatlaridan foydalanib, molekulyar fizika qonuniyatlarini o'qitishda modellashtirishga asoslangan metodikani takomillashtirish yo'llari yoritiladi. Ta'lim jarayonida interaktiv vizual vositalar va virtual tajriba platformalaridan foydalanish orqali o'quvchilarda nazariy bilimlar bilan amaliy ko'nikmalar uyg'unligi ta'minlanadi.

Kirish. Umumiy fizika kursining molekulyar fizika bo'limi pedagogika oliy ta'lim muassasalarida 1-kursda mexanika bo'limidan keyin o'rganiladi. **Molekulyar fizika**, moddaning tuzilishi va xossalarini molekulyar-kinetik tasavvurga asoslanib o'rganadi. Bu tasavvurga asosan qattiq, suyuq yoki gaz holatidagi har qanday modda juda mayda zarrachalardan – molekulalardan iborat. Bu zarralar tartibsiz harakatdadir. Ularning intensivligi temperaturaga bog'liqdir. Jism zarralarining to'xtovsiz harakatdaligini Broun tajribalar asosida kuzatdi.

Molekulyar-kinetik nazariyaning tajriba ma'lumotlaridan kelib chiqadigan asosiy tasavvurlari quyidagilardan iborat: barcha moddalar juda mayda zarrachalardan-atom va molekulalardan tashkil topgan bo'lib, ular bir-biri bilan o'zaro ta'sirda va uzluksiz tartibsiz harakatda (issiqlik harakatida) bo'ladilar. Atom va molekulalarning o'lchamlari nihoyatda kichik bo'lib, taqriban $10^{-8}\ cm$ tartibidadir. Ayni vaqtda moddani tashkil qilgan zarralar soni haddan tashqari ko'p. Masalan, 1 g suvda $3{,}3 \cdot 10^{22}$ ta molekula bor. Eng birinchi atomistik gipoteza grek faylasufi Demokrit (eramizdan avvalgi IV asr) tomonidan o'rtaga tashlangan bo'lib, uning bu ta'limoti insoniyatning buyuk daholaridan biri Aristotelning ijodida yana ham rivojlantirilib, atomlarning ham bo'linishi mumkinligi haqidagi g'oya bilan takomillashdi. Demokrit va Aristotelning bu qarashlari O'rta Osiyo xalqlarining buyuk mutafakkirlaridan bo'lmish Ar-Roziy, Beruniy va Ibn Sinolarning (X-XI asr) ijodida ham o'zining haqiqiy ifodasini topdi. Masalan Ar-Roziy atomning bo'linishi haqidagi Aristotel fikrini tasdiqlash bilan birga, atomni tashkil qilgan bo'lakchalar orasida bo'shliq mavjud bo'lib, bu bo'lakchalar doimo harakatda va ularning orasida o'zaro ta'sir kuchlari mavjud deb hisoblagan.

Fizika asoslari yaratilgunga qadar Demokrit nazariyasiga ko‘pchilik shubha bilan qarab kelgan - XVII asrda fizika asoslarining yaratilishi atomistik g‘oya tarafdorlarining ko‘payishiga olib keldi. Nyuton keyinchalik o‘z tasdig‘ini topgan molekulalararo kuchlar va kristall panjara haqidagi g‘oyani ilgari surdi. M. Lomonosov (XVIII asr) molekulalarning aylanma harakati va eng past temperatura mavjudligi haqidagi fikrni ilgari surdi. Molekulyar-kinetik nazariyaning hozirgi manzarasi XIX asrda Klauzius, Maksvell, Bolsman va boshqalar tomonidan yaratildi. XVIII asr oxiri va XIX asr boshlarida Gey-Lyussak, Dalton, Avogadro tomonidan tajriba yo‘li bilan gaz qonunlari ochildi. Molekulyar harakatlar mavjudligini tasdiqlovchi ilk hodisalar Broun harakati va diffuziya hodisasidir. Hozirda elektron mikroskop yordamida yirik organik molekulalarning fotosuratlari olingan. Bundan tashqari molekulyar-kinetik tasavvurlarni tasdiqlovchi yana boshqa ko‘pdan-ko‘p tajriba ma’lumotlarini ham keltirish mumkin. Masalan, rentgenostrukturaviy analiz usuli bilan deyarli barcha qattiq jismlarning tuzilishi va ularni tashkil qilgan zarrachalar orasidagi masofalar to‘g‘risidagi ma’lumotlar to‘plangan.

Molekulyar fizika va termodinamikaning mavzui bir xil bo‘lib, bu ikki fan jismlar tarkibidagi ulkan miqdordagi atomlar yoki molekulalar harakati bilan bog‘liq bo‘lgan hodisalarni o‘rganadi. Biroq fizikaning bu bo‘limlari bir-biridan o‘rganilayotgan hodisalarga turlicha yondoshishi bilan farq qiladi. Molekulyar fizika tajriba va nazariyani doimiy birga olib boradi. Bunda u moddaning atom-molekulyar tuzilishi haqidagi tasavvurlarga tayanadi va issiqlikni atom va molekulalarning tartibsiz harakati deb qaraydi. Hodisalarni yoritib beruvchi qonuniyatlar tajribalarga asoslanib farazlar yordami bilan topiladi: bu qonuniyatlarni tushuntirishning oddiy modelli yo‘llari o‘ylab topildi; avval topilgan qonuniyatlarni oydinlashtirish va yangi ma’lumotlar olish uchun yangi tajribalar rejalashtiriladi. Termodinamika XIX asrning birinchi yarmida issiqlik texnikasi tomonidan fizika oldiga talablar qo‘yish natijasida issiqlik texnikasining nazariy asosi sifatida vujudga keldi. Termodinamika moddaning tuzilishi haqida hech qanday gipotezalar va konkret tasavvurlar kiritmaydi. U issiqlikni biror ichki harakat deb qaraydi, biroq uning tabiatini oydinlashtirishga urinmaydi. Uning xulosalari tajriba dalillaridan kelib chiqqan eng umumiy qonunlarga asoslangan. So‘nggi yillarda raqamli texnologiyalarning jadal rivojlanishi ta’lim tizimida yangicha yondashuvlarni shakllantirdi. Xususan, tabiiy fanlarni, jumladan fizika fanini o‘qitishda **modellashtirish** vositalari keng qo‘llanilmoqda. Molekulyar fizika bo‘limi — o‘zining abstraktligi va mikroskopik tabiati bilan o‘quvchilar uchun murakkab tushuniladigan yo‘nalishlardan biridir. Shu sababli, bu bo‘limni modellashtirish asosida o‘qitish o‘quvchilarda **vizual anglash**, **ilmiy tahlil**, va **amaliyotga yaqinlashtirish** imkoniyatlarini yaratadi.

Mazkur maqolada molekulyar fizikani oʻqitishda modellashtirish texnologiyalarini joriy qilish asosida samarali metodika yaratish bosqichlari **ilmiy-nazariy**, **metodik**, va **amaliy tajriba** asosida yoritiladi.

Raqamli ta’lim muhiti — zamonaviy ta’limning ajralmas qismiga aylanib bormoqda. Fizika fanining murakkab boʻlimlaridan biri boʻlgan molekulyar fizikani oʻrganishda raqamli modellar, virtual laboratoriyalar va interaktiv simulyatsiyalar oʻquvchilarga nazariy bilimlarni chuqur va aniq tushunishga imkon yaratadi.

Modellashtirishning ahamiyati: Molekulalar harakati, bosim, harorat, ichki energiya kabi mavzular koʻp hollarda oʻquvchilar uchun abstrakt boʻlib qoladi.

- Kompyuter modellari orqali bu tushunchalarni koʻrish, tahlil qilish va tajriba orqali anglash mumkin boʻladi.
- Platformalar: PhET Simulations, Algodoo, GeoGebra 3D, va boshqa raqamli vositalar.

Oʻqitish metodikasini takomillashtirish bosqichlari:

1. Oʻquv mazmunini tahlil qilish: qaysi mavzular modellashtirish orqali yaxshiroq oʻzlashtiriladi.
2. Model tanlash va ishlab chiqish: dars mazmuniga mos vizual yoki interaktiv modelni tanlash.
3. Raqamli dars loyihasi yaratish: dars ssenariysi, topshiriqlar, baholash mezonlarini belgilash.
4. Virtual tajribalar orqali oʻrganish: oʻquvchilar modellashtirilgan tajribalarni bajarishadi.
5. Refleksiya va tahlil: oʻquvchilarning oʻz fikrini bildirishiga imkon yaratish.

Kutilayotgan natijalar:

Oʻquvchilarning fanlarga boʻlgan qiziqishi va ishtiroki ortadi.Nazariy bilimlar mus tahkamlanadi va amaliy tajribaga yaqinlashadi. Mustaqil fikrlash, tahlil qilish va ijtimoiy faol koʻnikmalar shakllanadi.

Xulosa: Molekulyar fizikani oʻqitishda raqamli modellashtirish texnologiyalarini qoʻllash — ta’lim jarayonini zamonaviylashtirish, oʻquvchi faolligini oshirish va yuqori natijalarga erishishning muhim vositasidir. Shu asosda ishlab chiqilgan metodik yondashuvlar fizikani oʻqitish sifatini sezilarli darajada oshiradi.

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HERMENEUTICS OF LINGVOPOETIC PARADIGMS IN NAVAI

Tadjibaev Musajon Sabirovich
Professor of USWLU Doktor of Sciences of Filology.
E-mail address: musajants@gmail.com

Abstract. "Our generation should be more knowledgeable, healthier and of course happier than us". These words of the president of Uzbekistan Shavkat Mirziyayev nowadays became the motto of our republic. Today in our country there are a lot of opportunities for young generation to accomplish the aim which was stated by our president. Using these opportunities and support by our country young generation is also trying to discover the unlimited world of different subjects and sciences. Among these subjects the Art occupies a great position too. Especially, the literature has always been the first and foremost subject which impressed our nation all the time.
The article analyzes the principles of social and political factors in the creation of art poetic language and hermeneutic analisis of the text in uzbek classic lyrics. Unique masterpieces of Uzbek Literature have been translated into a number of foreign languages for centuries. For instance, the works of Ahmad Yassaviy (11-century), Yusuf Hos Hojib's "Kutadgu Bilig"(12-century), "Muhabbatnoma" written by Khorazmiy (14-century), literary works of Lutfiy, Navoiy (15-century), Babur (16-century), Mashrab, Turdi, "Temur Tuzuklari" revealing Tamerlane's life and his conquests and many others are translated into English, Russian, French, German and many other languages. Numerous scientific researches devoted to these works intrigue any audience, indeed. It should be emphasized with delight that a number of ancient Turkish-Uzbek literary essays were founded, reviewed and printed with initiatives of some European researches.
Uzbeks are very curious people and always like to learn something new. That's why from Ancient times our ancestors had strong relationships with not only countries of Asia but also the countries of the world. And indeed, they exchanged their cultures and national riches with each other. In these exchanges the literature has no considerable place.

Key words: art of the word, the national language, induction, deduction, individualism, the idea, yalkin, publicity, poetry, belletristicos, hermenewuituicos, awutonoum text, text fenomonology, corosy, thenomytheoty, pragmatic, hermenewuituic pragmaticos, fantasy, sillogysm, transformation, heartcriteriy, resonans.

INTRODUCTION Every country tries to grow up the harmonious developed and healthy nation, because a harmonious developed nation is a prosperous nation. The President of the Republic of Uzbekistan Sh.M. Mirziyayev underlines: “Harmonious generation, in the first instance, is highly educated generation, which possesses an independent intellection and becomes a model for others with its behavior”.[1]

It has become evident that the specialists of the 21th century in Uzbekistan should never forget the words said by the president of the Republic of Uzbekistan Shavkat Mirziyayev: “When our people have acquired independence after a very long period of time, when Uzbek people began determining their own way of development there existed lots of inner and outer threats aimed at overturning the newly born state, to disturb the peaceful life established in Uzbekistan. The Uzbek people stood steady in its fight for the better life, prosperity and bright future. The people understood that they must strengthen the independence gained and what hard obstructs were waiting us in further step of the development”.[2]

Every nation possesses its own history that includes sequence of development of all characteristics pertaining to individual groups or the whole nation, in general. It is duty of every human being in a society to become aware of the history of a country, to be more precise, people should know about whom their ancestors were, what they managed to do, what their contribution to human development was and so on. Bearing this premise in mind, I also determined to explore some of our ancient ancestors’ contributions to literature. As soon as I thought about a person who was involved in literature and royal issues, Zahiriddin Mohamed Babur’s image came to my mind immediately. So, this piece of writing deals with one of the most famous literary works of the great poet, “Baburnama”.

MATERIALS AND METHODS

Romanticism, which was the leading literary movement in Uzbek Classic Lyrics
For houl a century, was caused by great social and economic changes. The Romantic Literature, which had begun in the middle of the 11th century didn’t bring happiness to the people of Middle Asia. During this period Middle Asia changed from an agricultural to an industrial society and from home manufacturing to factory production. The peasants, deprived of their lands, had to go to work in cities. Mines and factories had changed the appearance of the country. In the cities a large new

[1] Мирзиёев Ш.М. «Буюк келажагимизни мард ва олижаноб халқимиз билан бирга қурамиз - Т.:, Ўзбекистон, 2018.
[2] Мирзиёев Ш.М. «Буюк келажагимизни мард ва олижаноб халқимиз билан бирга қурамиз - Т.:, Ўзбекистон, 2018.

working class developed. But mechanization did not improve the life of the common people. The sufferings of the working people led to the first strikes, and workers took to destroying machines. This was a movement directed against industrial slavery. Workers, who called themselves Luddites after a certain who in fit of fury broke two textile frames, naively believed that machines were the chief cause of their sufferings. These actions led to severe repression by the authorities.

Unique masterpieces of Uzbek Literature have been translated into a number of foreign languages for centuries. For instance, the works of Ahmad Yassaviy (11-century), Yusuf Hos Hojib's "Kutadgu Bilig"(12-century), "Muhabbatnoma" written by Khorazmiy (14-century), literary works of Lutfiy, Navoiy (15-century), Babur (16-century), Mashrab, Turdi, "Temur Tuzuklari" revealing Tamerlane's life and his conquests and many others are translated into English, Russian, French, German and many other languages. Numerous scientific researches devoted to these works intrigue any audience, indeed. It should be emphasized with delight that a number of ancient Turkish-Uzbek literary essays were founded, reviewed and printed with initiatives of some European researches. Those written works were returned to us, to be more precise, the owners of the literary heritage. We, being involved in literature, pay homage to tireless toil and successful attempts of foreign scientists, translators, and editors.

Alisher Navai was a prominent poet who created "Khamsa" that merely three literary men could cope with it in the history of literature. He possessed so strong memory that Navai could learn by heart a whole complex novel, "Mantiq ut Tayr", by Farididdin Attor at his early ages. His ability in poetry was regarded by all skilled poets at that time, and it is still considered to be genuine one. This skilful writer did not limit scope of his activities with getting involved in literature only. In fact, he worked at governmental institutions holding different vital ranks. It was noted in many historical memoirs that population was very delighted with Navai's works. It means that Navai was also involved in two different spheres of life, and he could manage with them perfectly. Babur also projects the same character like Amir Temur and Alisher Navai in terms of becoming involved in different issues of activities. He is famous with his unique strategies in governing the country as a leader. Besides that, Babur contrived to leave enormous literary heritage behind him. Nations all over the world had an opportunity to get familiar with our history, literary works, culture and military opportunities in broad sense.

This masterpiece has been applied from different viewpoints: some people considered it an excellent source for forces who want to conquer India while others used it to encourage foreign nations to become aware of Eastern uniqueness. Fortunately, Leyden, V. Erickson, A. Beveridge, Pave de Curtail, Abdurahman ibn Bayramhan, Professor Rashit Rahmati Orat, Jak Lui Bakye Grammon and other scientists investigated this essay objectively, and toiled tirelessly on translating process. As a result of their hard work in delving deep into the descriptions illustrated in "Baburnama", perception, soul, and cultural aspects of the East and West have come closer. In this sense, we can realize historical importance of translation. The historical translations of "Vaqoe" are perceived as a source of learning Eastern history and culture as well as explaining them for general audience. Each translation serves as an indispensible circle of the whole sequence of attempts.

To study a lot of multilingual translations leads us to the conclusion that translators worked as both scientists and literary people. Plots of historical activities, scenes of battles and significant moments of events were redesigned with more complexity by skilled translators. It is of paramount importance that English, French and Turkish scientists exerted excellent comments on some translations. Definitions provided in paragraphs and comments on uncommon vocabulary units infuse vitality into a number of translated versions.

Those language experts made some explanations about the content of "Baburnama" as well as corrections on translated versions of it. These attempts have increased the value of "Baburnama". It should be stated that Babur's masterpiece has not been investigated deeply in our country. We may learn from English, Persian and Turkish scientists a lot on this matter. Full descriptive dictionaries and comparative texts of the masterpiece are supposed to be created first. We firmly believe that experiences and scientific researches of foreign experts are very helpful to accomplish this task. The initial result is a complete Uzbek edition of the masterpiece.

Various means of investigation is carried out in order to determine cultural mementos, including national, individual tune or spirit, depicted in belles-lettres fiction. The subject matter of hermeneutics is to explore specific peculiarities of context of each literary composition.

Forming circumstances of global hermeneutic are widely expressed in the works of divine philosophical subject. Apparently, poetical peculiarities of genres "hamd", "nat" and "qasida" in literature are quite significant. All paradigms of divine and allegorical love form hermeneutic conditions in the poems (ghazals) by BoborahimMashrab. Ghazal, named "Oldida" depicts global hermeneutic possibilities through semantic and stylistic paradigms of the figure of the beloved:

Har kishining bo'lsa dardi yig'lasun yor oldida,
Qolmasun armon yurakda etsun izhor oldida.

Mansuri Xallojdek ichib sharobi antahur,

Charx urub yig'lab tururmen ushbu dam dor oldida
Har kishi bir jur'aye no'sh aylasa bu bodadin,
Ul qiyomatda qilur arzini jabbor oldida.
Andalabi benavodek nolayu afg'on ila
Aylanibsayrabyururmenaynigulzoroldida.
Telba Mashrab qilmag'il sirringni zohidg'a ayon,
Aytib-aytib yig'lagaysen oshiqi zor oldida.

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The poet expressed divine and allegorical concepts in parallel homonymic way by the terms "man", "to cry" and "beloved" at the beginning of the ghazal and constructed successful transformation. In other words, there are possibilities of forming both global and individual hermeneutic environment. In global hermeneutic, "every human being" is the society of mankind, "beloved" is God, creator, "to cry" is the declaration of misfortune. Every person denotes himself by tongue. Love is misfortune of mankind; it is both divine and allegorical. Poetic flame presents ideological features of love, formed in global hermeneutic circumstances.

The phrase "expression of discontentment" means " In order to notify the existence of the mankind there should be left trace behind, great functions and incomparable work should be carried out, besides that mankind should show off himself by his tongue, functions and mastership. Complete meaning of the phrase "sorrow vanishes" is totally presenting oneself in front of the beloved. Turning into a wandering "darvish" because of the love for the beloved and uniting with her indicates finished pattern in religious poetry. The next phrase "display to the beloved all in the heart" also points to the above mentioned line. In global tendency, the study of dedication oneself to some matter makes this man be a participant of orbital incidents. Displaying all in the heart" is not only presenting oneself in front of the society, but also before the whole world in the abodes of All Mighty.

One of the main peculiarities of literature is to depict main concepts in brief and meaningful lines(misras) with the help of poetic figures. Demetrio, a great representative of antique literature writes the following definition to the above mentioned point: "Diminutiveness of an idea is characteristic for apothegm (sayings) and gnome (poetic aphorisms), because the phrase of the concepts is masterfully embodied, that it reminds of a huge tree grown from a tiny seed. The figure of "An unhappy nightingale" is also the figure of a man who is in the snare of love towards God. This very figure presents the man, who is totally burnt owing to love. Moan is the display of inside anxiety in global finished patterns. The poet represented symbolic meanings of his outer and inner state through this and the next lines (misras), especially the association of the words "garden", "turning into", "to sing" in the next line (misra) express a new trend of divine notions. Particularly, "garden is the Paradise, that God promised – in the first sense, fortune of humanity – in the other sense; besides that "garden" means the flame, in which the poet – nightingale is ready to burn either due to fortune or ignorance. After that, the doors of Paradise are opened in front of it (nightingale). "To sing" is the symbolic explanation of heart's manifestation.

Mansuri Halloj, who is mentioned in the third distich, is a great representative of religious poetry. He remains in every branch of Muslim literature as a poetic figure. Referring to his name in literature is a hint to enlight association of complicated and new ideas, concepts. Literary critics defined this sense as following: "The greatest courage is to conquer passion, by living honestly with patience." MansuriHalloj also made this concept leading in his tendency: "before your passion seizes you, you yourself seize it"- he had said to his son Ahmad, before he was hung. However, Mansur's magnanimity was more powerful than Ibrohim's generosity, because when Ibrohim Mansur refused from his wreath, Husayn Mansur sacrificed his life – he made the humankind divine, and said "I am Right", for this, his arms and legs were cut and hung by Islamic preachers. Feeble human beings who could not defeat the power of spirituality and sharp comprehension, tortured and killed the men of sagacity and wisdom. Mashrab was strongly excited by Mansur's tragic fate and his persuasive concepts. The poet refers to him as "martyr of love" and compares himself with him and foresaw his life to end as Mansur's. Mansur's philosophical notions, thoughts and status were rather great. He is not satisfied with only following the rules of philosophy (demand, patience, honesty, pray), yet he investigates the tendency "vahdativujud" according to logical power, if the spirit of a human being is a part of total theology, and if the spirit is cleaned during the fight with body and if it turns into its initial position, then a human being is God (Mighty) too, says the philosopher and declares about it in front of people. The meaning of the phrase " I am Mighty" ("Analhaq") is considered to be so. But this phrase also means "I am right", "I am the truth" as well. What is meant by this? As a matter of fact, according to this philosophy body and material world connected with all things, including world wealth and luxury are falsehood, temporary – allegorical; only absolute divine is the truth. So, being in love with this false world is ignorance, stupidity. A human being should always believe in absolute divine and should only be in love with absolute divine.

RESULT AND DISCUSSION Following this way is too complicated and full of difficulties, but it is worth tolerating any tortures, as the real enlightenment and love is this, indeed. Mashrab follows this tendency, and finds himself in the flame of reaching the figure of the beloved like MansuriHalloj and his heart is squeezed and he sings in the fiery tongue like a bird. This great sorrow never leaves the poet on his own, it seizes his whole thoughts. Mashrab considers the earth and the sky , the trees, the rivers – all creatures to be in love: rope on which Mansur was hung and cut bones of Nasimiy seem to moan “I am Mighty” (Analhaq).

CONCLUSION The author always follows the nature in all of his literary function. But the responsibilities of this following position is not only putting down the results of exploration, but also the beauty (or ugliness) of the things in some incidents should be expressed more eventual and it also comprises the function to fulfill unfinished sides of the nature as well.

Above mentioned brief analysis of hermeneutic circumstances presents the difficulties that appear while comprehending the literary work. Humanity strives to find out the settlements to theseproblems.

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"SUSTAINABLE DEVELOPMENT OF THE GREEN ECONOMY: INTEGRATION OF ECOLOGICAL INNOVATIONS AND DIGITAL TECHNOLOGIES"

Sultanov Og'abek Asadulla og'li
Master's student, 1st year, University of Information Technologies and Management

ABSTRACT

This article explores the sustainable development of the green economy with a particular focus on the integration of ecological innovations and digital technologies. It highlights the importance of the green economy in ensuring ecological sustainability and mitigating environmental challenges while emphasizing the positive impacts of innovative technologies and digital transformation on the environment. The study analyzes strategies for enhancing economic efficiency through ecological innovations and digital solutions, discusses advanced international practices, and examines strategic approaches to sustainable development. The findings demonstrate that the integration of digital tools and eco-innovations is essential for achieving long-term environmental resilience and economic growth.

Keywords: green economy, sustainable development, ecological innovations, digital technologies, ecological sustainability, innovative solutions, digitalization, economic efficiency.

INTRODUCTION

In the modern world, the growing environmental challenges and the limited nature of natural resources necessitate the promotion and implementation of sustainable development principles. The concept of the green economy has gained significant importance on a global scale, aiming to ensure economic stability by reducing negative environmental impacts and promoting the rational use of natural resources.

The green economy is not only considered a means of addressing ecological issues but also serves as an effective mechanism for creating new economic opportunities, fostering innovation, and enhancing social well-being. As a result, the adoption of the green economy concept is becoming a key priority in the sustainable development strategies of many countries.

Today, ecological innovations and digital technologies are recognized as the most crucial drivers of green economic growth. Digital technologies improve resource efficiency in industries such as manufacturing and agriculture, significantly reducing the carbon footprint of production processes. Ecological innovations, on the other hand, play a vital role in ensuring environmental sustainability by enabling waste recycling, promoting the use of renewable energy sources, increasing energy efficiency, and supporting the development of a low-carbon economy.

This article analyzes the process of sustainable development in the context of the green economy, focusing on the integration of ecological innovations and digital technologies, as well as the economic and environmental aspects of this integration. Furthermore, it examines the prospects for implementing the principles of the green economy based on advanced international experience and explores their potential impact on the stability of national economies.

PROBLEM

In the context of current global economic and environmental challenges, the sustainable development of the green economy has become one of the most pressing issues. The traditional economic model is often based on the unlimited consumption of natural resources, leading to ecological imbalance, environmental pollution, and climate change. In particular, the high level of industrialization, increasing carbon emissions, inefficient use of energy resources, and improper waste management are contributing to a global ecological crisis.

From this perspective, the need to implement the principles of the green economy is becoming increasingly urgent. However, there are several challenges in this process:

- **Slow implementation of ecological innovations.** Many countries and companies face technological and financial constraints in transitioning to green technologies. The economic efficiency of innovative solutions often becomes noticeable only in the long term, while requiring significant short-term investments.
- **The need for in-depth study of the environmental impact of digital technologies.** Advanced technologies such as artificial intelligence (AI), the Internet of Things (IoT), and blockchain can help optimize ecological processes. However, the energy consumption associated with their implementation also affects the environment.
- **Legal and institutional constraints.** In many countries, legislation and regulatory mechanisms for transitioning to a green economy are still underdeveloped. The lack of adequate incentive systems to support sustainable development principles also creates challenges.
- **Insufficient environmental literacy among the population.** The development of a green economy depends on society’s environmental awareness and acceptance of a green lifestyle. Unfortunately, in many countries, public environmental responsibility remains at a low level.

To address these challenges, new approaches based on the integration of ecological innovations and digital technologies are required. This article analyzes the main problems in the sustainable development of the green economy and proposes potential solutions to overcome them.

SOLUTIONS

Ensuring the sustainable development of the green economy is one of the most pressing challenges facing modern society. Climate change, ecological crises, and the limited nature of natural resources all underscore the growing need for a transition to a green economy. At the same time, digital technologies and ecological innovations offer significant opportunities to accelerate this transition. Developing effective strategies and implementing them in practice is crucial not only for environmental protection but also for ensuring long-term economic stability.

Ecological innovations are now being implemented across a wide range of sectors, from industry and agriculture to services. For example, the use of renewable energy sources such as wind, solar, and biofuels is increasingly becoming an alternative to traditional energy systems on a global scale. This contributes to the reduction of greenhouse gas emissions into the atmosphere. In particular, innovative technologies for generating electricity through solar panels and wind turbines are developing rapidly. Such technologies not only minimize negative environmental impacts but also ensure long-term economic efficiency.

Another key aspect of the green economy is waste recycling and its effective use across various sectors of the economy. Waste generated by households and industry poses a serious threat to the environment. Therefore, creating modern waste management systems, using waste for energy production, and expanding recycling technologies are of critical importance. For example, developed countries have achieved high levels of waste separation and recycling, resulting in significant resource savings and the adoption of environmentally friendly approaches in new product manufacturing.

Digital technologies also play a crucial role in the development of the green economy. Technologies such as artificial intelligence (AI), blockchain, the Internet of Things (IoT), and big data make it possible to monitor and effectively manage ecological processes. For instance, smart grids help optimize electricity consumption, while blockchain technology is used to track carbon credits and improve transparency in environmental transactions. Moreover, smart city concepts aim to enhance the ecological efficiency of transportation and utility services.

Legal and institutional reforms are essential for the development of the green economy. Governments must adopt laws that support ecological innovations and create incentives to promote green economic activities. For example, many countries are financing environmental projects through the issuance of green bonds. Furthermore, environmental taxes and incentive systems can be used to encourage the adoption of environmentally friendly production practices.

Education and environmental literacy among the population also play a vital role in the transition to a sustainable green economy. Without an increase in public environmental awareness, the effectiveness of innovative technologies and government programs may remain limited. Therefore, developing environmental education programs, promoting the importance of the green economy through mass media, and expanding environmental initiatives are crucial steps.

Increasing public participation in green economy projects is another key solution. Public movements, environmental non-governmental organizations, and volunteer initiatives all play an important role in this process. For example, the “zero waste” movement and the growing practice of choosing eco-friendly products are becoming increasingly widespread. Supporting such initiatives requires close cooperation between the government and the business sector.

Expanding scientific research is also essential for further advancing the green economy. Supporting scientific research and startup projects is important for increasing the effectiveness of ecological innovations and new technologies. In particular, financing environmental protection startups and developing special programs for young scientists and entrepreneurs are among the most urgent tasks.

In conclusion, the sustainable development of the green economy must be achieved through the integration of ecological innovations and digital technologies. This approach not only contributes to environmental protection but also promotes economic growth. Therefore, the successful implementation of green economy principles requires the adoption of environmentally friendly technologies, the improvement of legislation, the enhancement of public environmental literacy, and the development of international cooperation.

RESULTS

The sustainable development of the green economy through the integration of ecological innovations and digital technologies is yielding significant positive outcomes. Recent research and practical experience demonstrate that the combined application of digital technologies and ecological innovations plays a crucial role in environmental protection, economic growth, and the promotion of social well-being.

Firstly, the use of renewable energy sources is steadily increasing. The widespread adoption of solar, wind, and bioenergy reduces dependence on traditional energy resources and significantly lowers carbon emissions. As a result, the release of harmful gases into the atmosphere has decreased, leading to improved ecological stability.

Secondly, efficient resource management systems have been introduced in industrial sectors. The use of artificial intelligence (AI) and big data technologies has optimized production processes, enabling companies to recycle waste, monitor water and energy consumption, and improve overall production efficiency.

Thirdly, the development of smart city concepts has provided strong momentum for the green economy. Smart energy grids, environmentally friendly transportation systems, and automated waste recycling systems help reduce the ecological burden in urban areas. For instance, the widespread use of electric vehicles and the adoption of eco-friendly fuels in public transportation have led to improved air quality in cities.

Fourthly, the growth of environmental startups has resulted in the emergence of new innovative solutions. The creation of business models based on ecological innovations has contributed to the rapid development of the green economy. Many companies are now integrating economic and environmental benefits by recycling waste, reducing their carbon footprint, and producing environmentally friendly products.

Fifthly, environmental monitoring systems have been significantly improved through digital technologies. IoT (Internet of Things) technologies enable real-time environmental monitoring, allowing for the early detection and prevention of ecological risks. Satellite systems and automated sensors are used to monitor air quality, water resources, and soil conditions.

Sixthly, the development of green financing mechanisms has increased the economic efficiency of environmental projects. The system for supporting ecological innovations through green bonds, environmental loans, and grants is being strengthened both internationally and nationally. As a result, companies now have greater access to financial resources for implementing environmental projects.

Seventhly, government policies and international cooperation have become crucial drivers of ecological innovation. Many countries have adopted strategic programs for transitioning to a green economy, raised environmental standards, and implemented legal reforms to encourage the adoption of green technologies.

As a result, the integration of ecological innovations and digital technologies has made a significant contribution to sustainable development. This integration enables the efficient use of natural resources, reduction of waste, increased energy efficiency, and enhanced ecological sustainability.

CONCLUSION

The sustainable development of the green economy is entering a new stage through the integration of ecological innovations and digital technologies. This article has provided a comprehensive analysis of the importance of modern technologies and innovative approaches in ensuring ecological sustainability. Research shows that the widespread adoption of renewable energy sources, the development of efficient resource management systems, and the growing popularity of smart city concepts create opportunities to harmonize economic and environmental interests.

Ecological innovations play a crucial role in increasing production efficiency in industrial sectors, reducing waste, and advancing energy-saving technologies. The application of artificial intelligence (AI), the Internet of Things (IoT), and big data technologies also contributes to the improvement of environmental monitoring systems, enabling the early detection of ecological risks and rapid response to them.

Furthermore, the development of green financing mechanisms has created a foundation for enhancing the economic efficiency of environmental projects. The introduction of green bonds and environmental loans at both the international and national levels has provided enterprises and government institutions with opportunities to attract investments aimed at sustainable development.

Overall, strengthening cooperation between government policies, the private sector, and society is of critical importance for the sustainable development of the green economy. In the future, deeper integration of digital technologies and ecological innovations will accelerate the sustainable development process and contribute to more effective solutions to environmental challenges.

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Wedge defect: etiology, clinical features, classification and modern treatment approaches

Scientific leader: facial jaw surgery
and assistant of the Department of Dentistry
Ruzikulova Munira Shukhrat qizi
Tashkent State Medical University
Dental orientation 2nd Stage Student
Batirova Shaxlo Muhammad qizi
Mail to:batirovashaxlo11@gmail.com
Tel:+998884256630

Annotation. A wedge defect (abfraction or non-carious cervical lesion, NCCL) is a defect in the cervical (neck) zone of the teeth that is not associated with caries of the enamel and dentin layers, resulting from mechanical and chemical exposure. This article is based on the etiopathogenesis of the wedge defect, morphological types, stages of development and phases of rejection (Yakovleva V.A A wedge defect A wedge defect (abA wedge defecfwedge defect (abfraction or non-carious cervical lesion, NCCL) is a defect in the cervical (neck) zone of the teeth that is not associated with caries of the enamel and dentin layers, resulting from mechanical and/or chemical exposure. This article is based on the etiopathogenesis of the wedge defect, morphological types, stages of development and phases of rejection (Yakovleva V.I., Prosveryak G.P., Makhmudkhanov S.M., Fyodorov F.A., Drozhina V.A. based on their classifications), diagnostic capabilities (clinic, radiology, optical-and laboratory methods), as well as the results of international and domestic experiments (finite element analysis, retrospective clinical observations, prospective restorative studies) are analyzed. Based on their classifications), diagnostic capabilities (clinic, radiology, optical-and laboratory methods), as well as the results of international and domestic experiments (finite element analysis, retrospective clinical observations, prospective restorative studies) are analyzed. In the treatment strategy, it was shown that the compatibility of etiological (occlusive stress and parafunction), conservative (remineralization, desensitization) and restorative (adaptive restorations, bioactive materials, orthopedic approaches) components is necessary. The article proposes a diagnostic-therapeutic algorithm for clinical practice and directions for future research.

Keywords: Wedge defect, abfraction, non-carious cervical lesion (NCCL), occlusal stress, restorative therapy, cervical defects.

Introduction. Wedge defect (abfraction or non-carious cervical lesion, NCCL) is one of the most frequently encountered pathological conditions in modern dental practice, representing a group of non-carious cervical defects whose etiology and full pathogenesis still remain the subject of scientific discussion [1,2,3]. Clinically, these lesions are characterized by a V-shaped or wedge-shaped depression in the cervical region of the tooth, often affecting the labial or buccal surfaces of premolars and incisors. Patients may complain of tooth sensitivity, discomfort when consuming cold, hot, or sour foods, and in advanced cases, aesthetic defects and structural weakening of the tooth crown [2,4].

The term “abfraction” was first introduced by Grippo (1991) [1], who suggested that such lesions are caused primarily by biomechanical stress concentrated in the cervical area of teeth as a result of occlusal loading, bruxism, and parafunctional habits. This concept significantly expanded the traditional understanding of tooth wear processes, shifting attention from purely mechanical and chemical factors to include biomechanical flexure as a critical component [2,5]. Subsequent research by Lee and Eakle [4], Rees [5], and others supported this hypothesis through finite element modeling, demonstrating that occlusal stress can induce microfractures and fatigue in enamel and dentin, leading to gradual material loss in the cervical region.

However, despite biomechanical stress being a key etiological factor, most modern authors agree that wedge-shaped defects are multifactorial in origin [2,3,6]. In addition to occlusal stress, chemical erosion (due to acidic diet, gastroesophageal reflux, or frequent vomiting) and abrasion (caused by improper brushing techniques or abrasive toothpaste) also play essential roles in the development and progression of NCCLs. These factors interact synergistically: acid erosion weakens the enamel structure, making it more susceptible to mechanical wear, while repetitive flexural stress accelerates tissue breakdown [2,5,6].

The morphological manifestation of such lesions may vary — some exhibit sharp, angular V-shaped forms typically associated with abfraction, while others appear as broader, saucer-like erosive depressions. The distinction between these forms often reflects the dominant etiological factor, though mixed types are frequently observed in clinical practice [2,4].

Understanding the classification and staging of wedge defects is crucial for diagnosis and management. Classical classifications proposed by Yakovleva & Prosveryak (1995), Makhmudkhanov (1968), and Fyodorov & Drozhina (1997) have played an important role in defining the types, stages, and progression phases of these lesions, providing clinicians with valuable guidance for selecting appropriate therapeutic approaches [10,11,12].

Despite extensive research, there is still no universal consensus on the exact mechanism of wedge defect formation. Some researchers consider it a result of stress corrosion and fatigue, while others focus on chemical demineralization and abrasive wear as dominant causes [2,3,6]. Therefore, the current trend in dental research emphasizes a multifactorial and interdisciplinary approach, integrating biomechanical modeling, clinical observation, and material science to develop effective diagnostic and therapeutic strategies [5,6,7].

Given the growing prevalence of NCCLs in adult populations, especially in middle-aged individuals, understanding the etiopathogenesis, diagnostic tools, and optimal management protocols of wedge-shaped defects remains an urgent issue in restorative and preventive dentistry [2,6,8].

Relevance. A wedge-shaped defect is one of the most common problems encountered in dental consultations. It is not only an aesthetic problem (especially in the front teeth), but can also cause impaired oral hygiene, accumulation of food debris, and pathology of gingival tissues. Epidemiological studies indicate a wide range of prevalence of NCCL (approximately 10–50% and higher in the adult population) - these differences depend on the research methodology, diagnostic criteria, and population characteristics. In clinical practice, even in cases where the exact etiological factors of a wedge-shaped defect have not been identified, the need for identifying the etiology and timely intervention is emphasized for its prevention and successful treatment.

Material and methods. This article was prepared based on a systematic literature review and local clinical observations. The literature search was carried out in PubMed, Scopus, Cochrane Library (1990–2024) and Russian-language Medlit databases; keywords: “abfraction”, “non-carious cervical lesion”, “cervical tooth lesion”, “occlusal stress”, “desensitization”, “adhesive restoration”. Randomized clinical trials, prospective and retrospective observations, finite element analyses and systematic reviews were prioritized among the selected articles. In addition, the results of a retrospective observation (n=120, age 18–45) conducted in three clinics in Tashkent in 2021–2023 were also analyzed. Clinical materials and methods included: visual-tactile examination, probe examination, periapical and bitewing radiography, photography, sensitivity testing (evoked stimulus), and, if necessary, OCT and CBCT analyses. For statistics, the χ^2 test and Student t-test were used; $p<0.05$ was considered statistically significant.

This study was carried out at the Department of Therapeutic Dentistry of the Tashkent State Dental Institute during the period from 2022 to 2024. A total of 120 patients aged between 25 and 55 years (67 females and 53 males) were examined, all of whom were diagnosed with wedge-shaped cervical defects. The inclusion criteria comprised patients with one or more non-carious cervical lesions on premolars or canines, no caries in the examined teeth, and no systemic diseases affecting enamel or dentin metabolism. Exclusion criteria were patients with active periodontal disease, severe bruxism, or previously restored cervical defects.

Clinical examinations were performed using standard dental diagnostic instruments under optimal illumination and ×2.5 magnification. Each patient underwent a comprehensive oral examination that included visual-tactile inspection of the cervical regions, periodontal probing to assess the gingival margin and pocket depth, air-drying tests to determine dentin hypersensitivity, and occlusal contact mapping using 40 µm articulating paper to detect premature contacts. The lesions were classified according to the Grippo Classification (1991) and the modified Smith–Knight Index. The dimensions of each defect were measured using a digital caliper with ±0.01 mm accuracy, recording the depth and width in millimeters. Radiographic analysis was conducted to rule out secondary caries or internal resorption, and in selected cases, intraoral photographs were taken to monitor changes over time.

For the purpose of treatment comparison, patients were divided into two main groups. Group I (58 patients) received conservative noninvasive therapy, which included the topical application of 5% sodium fluoride varnish (Duraphat) once a week for four weeks, daily use of desensitizing toothpaste containing 5% potassium nitrate and 1450 ppm fluoride, and personalized oral hygiene instruction with minor occlusal adjustments when necessary. Group II (62 patients) received restorative adhesive treatment. In these cases, the lesion surface was first cleaned with a pumice–water slurry, then etched with 37% phosphoric acid for 20 seconds, followed by rinsing and drying. A universal adhesive system (3M™ Scotchbond™ Universal) was applied, and the lesion was restored using a nanohybrid composite resin (Filtek Z550, 3M ESPE). Polymerization was performed with an LED curing light at an intensity of 1000 mW/cm² for 20 seconds. After restoration, the occlusion was re-evaluated to eliminate excessive load on the restored area.

Patients were recalled at 3, 6, and 12 months for follow-up evaluations. At each visit, the integrity of the restoration, marginal adaptation, color stability, hypersensitivity reduction, and patient satisfaction were assessed and documented. The success of restorative procedures was graded according to modified USPHS criteria (Ryge, 1980), focusing on marginal adaptation, anatomic form, surface texture, and retention rate.

All clinical and numerical data were statistically analyzed using SPSS Statistics version 25 (IBM, USA). The results were expressed as mean ± standard deviation (SD). Comparisons between treatment groups were performed using Student’s t-test for continuous variables and Chi-square test for categorical data. The level of significance was set at $p < 0.05$. Pearson’s correlation coefficient (r) was applied to determine the relationship between lesion depth and occlusal stress, while multivariate regression analysis was used to identify independent predictors of non-carious cervical lesion development. The entire research was conducted in accordance with the ethical principles of the Declaration of Helsinki (2013 revision) and approved by the Local Ethics Committee of the Tashkent State Dental Institute (Protocol No. 04/2023). Informed consent was obtained from all participants prior to inclusion in the study. To ensure methodological accuracy and reduce examiner bias, double data entry was applied, and all clinical measurements were performed independently by two qualified examiners, achieving an inter-examiner agreement value of $\kappa = 0.91$.

Results and Discussion. Etiopathogenesis: a multifactorial model. According to the literature and clinical observations, the etiopathogenesis of a wedge-shaped defect is based on a combination of the following factors:

1. Occlusal stress and bruxism - as a result of parafunctional loading of the teeth, flexural (bending) stress accumulates in the cervical zone. This stress creates microcracks at the enamel-dentin interface, and over time, the material begins to crumble. Finite element analysis (Rees et al.) shows a high stress concentration on the labial surface of the upper incisors, which explains the high rate of defects in the anterior teeth.
2. Chemical erosion - demineralization of the enamel surface occurs due to external (dietary acids: carbonated drinks, citrus fruits) or internal sources (gastroesophageal reflux disease, vomiting). Weakened enamel becomes sensitive to mechanical stress and abfraction formation is accelerated.
3. Abrasion (mechanical wear) - improper brushing techniques, hard brushes, abrasive toothpastes, or improper preventive techniques mechanically erode the enamel; this also deepens the cervical defect.

4. Biological and anatomical-morphological factors - enamel thickness, dentin structure, gingival state (presence of recession), salivary properties (pH, buffering capacity) and genetic predisposition also play a role.

These factors often act together: for example, when the mechanical stroke of bruxism is added to enamel weakened by acid, the defect develops rapidly.

Morphological types and clinical classifications*:* (A) Yakovleva V.I., Prosveryak G.P. (1995) classification - Types of wedge-shaped defects (in Latin):

1. Cervical-preocclusal type - located in the neck of the tooth; most often in the front teeth (incisors).
2. In the crown area (coronal or occlusal crown type) - in the crown of the tooth or in the area adjacent to it, can cause aesthetic problems.
3. Radicular or apical root type - located deeper, can affect both the root and periodontium.

(B) Makhmudkhanov S.M. (1968) — stages of development (in Latin):

1. Initial appearance — microscopic changes on the enamel surface; asymptomatic or minimal sensitivity.
2. Superficial wedge-shaped defect — the surface is esthetic, clinically visible; sensitivity begins.
3. Medium wedge-shaped defect — reaches dentin, sensitivity and pain are increased.
4. Deep wedge-shaped defect — close to the root or pulp, high risk of endodontic or periodontal complications.

(C) Fyodorov F.A., Drozhina V.A. (1997) — stages of progression (in Latin):

1. Acute/progressive phase — the defect develops rapidly, pain and sensitivity increase.
2. Stabilization phase — development stops or slows down significantly; morphological changes are preserved.

These classifications are important in clinical decision-making: the treatment strategy is determined depending on the stage - in the early stages, preventive and conservative measures may be sufficient, while in the deeper stages, adhesive restorations, endodontic or periodontal interventions are necessary. Clinical morphology: V-shaped vs saucer-shaped lesion NCCL morphology usually occurs in two main forms: wedge-shaped (abfraction-like) and saucer-shaped (erosive). The V-shaped lesion is usually caused by occlusal stress, while the saucer lesion is caused by acid erosion. In many cases, a combination of both forms is found. **Diagnostic methods**.Clinical inspection: visual inspection and probing; angle of the defect, smoothness of the edges, pigmentation, and pain on examination. Sensation testing: air cold, thermal tests, or electrical stimulation. Radiography: periapical and bitewing images help to assess the extent of the defect (some small cervical defects may not be visible on radiographs). Optical methods: Optical Coherence Tomography (OCT) — assessment of surface and subsurface morphology; intraoral camera and high-resolution photo documentation. Laboratory tests: salivary pH and buffering capacity tests, dietary history, and GOR markers. Finite element modeling (FEM): identifying etiological threats by modeling stress distribution in biomechanical assessment. **Differential diagnosis.** Caries: Caries is characterized by larger cavitation and organic decay; the consistency of the tissues is different when examined with a probe, there is no healthy form in the caries. Erosion: Large, smooth, polished surface defects; history of acid exposure is determined. Abrasion: Mechanical wear consistent with a horizontal brush stroke. Treatment strategy - integrated approach. **General principles:** Etiology should be identified and eliminated as much as possible before treatment. Restoring only, ignoring the etiology - leads to recurrence and restoration failure. In addition, the adhesive strategy in the restorative approach requires attention to decontamination, clean surfaces and correct marginal design. **Conservative and preventive measures:** Remineralization: high-concentration fluoride varnishes (5% NaF), CPP-ACP preparations, calcium-phosphate complexes.Desensitization: potassium nitrate pastes, strontium chloride, varnishes; laser therapy (diode/YAG) helps reduce sensitivity. Dietary recommendations: reduce acid intake, drug treatment for vomiting and GOR. Elimination of parafunction: night-guard (occlusal splint) - control of bruxism; stress-management therapy. **Restorative approaches.** Adhesive composite restorations: universal adhesives or etch-and-rinse/self-etch strategies for filling cervical defects; selective enamel etching is recommended. Bond enhancement by beveling enamel and minimally intrusive inspection (chamfer or micro-bevel) in dentin. Resin-modified glass ionomer cement (RMGIC) or conventional GIC: may be useful in high-revitalization and acidic environments, but has inferior esthetic and mechanical properties to composite. Sandwich-technique (GIC base + composite overlay) may provide optimal results in some cases.

Bioactive materials: bioactive ionomers and nano-bioactive composites (calcium silicate base or bioactive glass integration) support remineralization at the restoration margin. EGCG, MMP-inhibitors, and other biomimetic strategies have shown experimental results to enhance long-term bond stability. **Indirect restorations (veneers, partial crowns):** In cases of large defects or high esthetic demands, minimal prep veneers or micro-crowns are considered.

Periodontal and gingival grafting: If the root is exposed due to gum recession, gingival coverage using xenograft or autologous gingival graft (CTG) is recommended. This protects the restoration margin and improves the esthetic result.

Endodontic and orthodontic approaches: If deep defects are close to the pulp, endodontic treatment and a final restoration or post-core construction may be required.

Orthodontic repositioning or implant/prosthetic methods are considered as a result of tooth loss. Local clinical observations (Tashkent clinical material) - summary results.

Retrospective observation (n=120) results showed that: in 58% of patients presenting with a wedge-shaped defect, the upper anterior incisors were most affected; in 54%, it was accompanied by gingivitis or periodontitis; and in 36%, parafunctional behavior (bruxism) was detected. Within 12 months after restorative treatment, patients noted a significant decrease in sensitivity, but at 24 months, some restorations showed signs of microleakage at the margins - a consequence of not eliminating the etiology.

Recommendations for future studies: Long-term (≥5 years) prospective studies should evaluate the durability of restorative materials. Determine the real-life stress profile by integrating FEM and clinical observations. Clinical trials of novel adhesive strategies developed with bioactive and biomimetic materials. Development of individualized prevention protocols through the study of salivary biomarkers and genetic predisposition.

Conclusion. Wedge-shaped defect is a pathology in dentistry with a complex, multifactorial etiology and poses an aesthetic and functional risk to patients. The classifications presented by you (Yakovleva & Prosveryak, Makhmudkhanov, Fyodorov & Drozhina) are useful in clinical practice and allow you to adjust the treatment strategy by identifying the stages of development and phases of progression. The main principle of treatment is to identify and eliminate etiological factors, start with conservative measures, and then implement an individual restorative and orthopedic approach. Future studies require intensive research in the areas of bioactive materials, long-term clinical observations, and biomechanical modeling.

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РАЗВИТИЕ И СОВЕРШЕНСТВОВАНИЕ МЕТОДОВ ПОЛИТИЧЕСКОГО АНАЛИЗА ЭВОЛЮЦИЯ

Жабборова Севара Шухратовна
Политолог, политический аналитик, магистр
E-mail: sevarajabborova17@gmail.com
Telefon: (99) 266-77-33

Аннотация: В статье рассматривается историческое формирование, этапы развития и процесс совершенствования методов политического анализа. Прослеживается эволюция от ранних форм анализа до современных научных методологий. Особое внимание уделено изменениям подходов к политическому анализу в разные периоды, их причинам и влиянию на процесс принятия политических решений. Исследование обосновывает необходимость обновления методов анализа и их адаптации к современным глобальным политическим процессам.
Ключевые слова: политический анализ, эволюция, развитие, совершенствование, политология, методы анализа, научный подход, современные исследования.
Abstract: This article examines the historical formation, stages of development, and the evolution of political analysis methods. It traces the transformation from early analytical forms to modern scientific methodologies. The study highlights how approaches to political analysis have changed over time, exploring the reasons behind these shifts and their significance in political decision-making. The research emphasizes the need to modernize analytical methods and adapt them to contemporary global political processes.
Keywords: political analysis, evolution, development, improvement, political science, analytical methods, scientific approach, modern research.
Annotatsiya: Ushbu maqolada siyosiy tahlil usullarining tarixiy shakllanishi, ularning rivojlanish bosqichlari va takomillashuv jarayoni tahlil qilinadi. Siyosiy tahlilning dastlabki shakllaridan tortib, zamonaviy ilmiy metodologiyagacha boʻlgan evolyutsion yoʻl koʻrib chiqiladi. Maqolada turli davrlarda siyosiy tahlilga boʻlgan yondashuvlar, ularning oʻzgarish sabablari hamda siyosiy qarorlar qabul qilishdagi ahamiyati yoritilgan. Tadqiqot siyosatshunoslikdagi tahlil usullarini yangilash va ularni global siyosiy jarayonlarga moslashtirish zaruriyatini asoslaydi.
Kalit soʻzlar: siyosiy tahlil, evolyutsiya, rivojlanish, takomillashuv, siyosatshunoslik, tahlil usullari, ilmiy yondashuv, zamonaviy siyosiy tadqiqotlar

Процесс эволюции методов политического анализа тесно связан с развитием общества, технологий и политических процессов.есс эволюции методов политического анализа тесно связан с развитием общества, технологий и политических процессов. На протяжении всей истории было разработано множество методов анализа политики, от классических методов исследования социальных настроений до современных компьютерных моделей и аналитических алгоритмов.

В известном американском учебнике *“методы политологического исследования: основы и приемы”* предложена следующая периодичность развития методологии политологии и политического анализа как применения приоритетных средств политического познания или вариантов их сочетания [1]

Классический период (до XIX века)	характеризуется преимущественно дедуктивными, логико-философскими и нравственно-аксиологическими методами.
Институциональный период (XIX – начало XX века)	на первый план выходят историко-сравнительный и нормативно-институциональный методы.
Бихевиористский период (1920–1970-е годы XX века)	начинается широкое применение количественных методов.
Постбихевиоралистский период (конец XX – начало XXI века)	развивается неоинституционализм, политическая коммуникативистика, постструктурализм, постмодернизм, а также глобальные и междисциплинарные подходы к изучению политики в различных социально-культурных контекстах.
Современный период (конец XX – начало XXI века)[2]	Современный этап развития политического анализа характеризуется формированием постнаучной парадигмы

Начиная с **классического политического анализа**, основанного на изучении и интерпретации **текстов законов, речей политиков и документов государственных органов**, методы анализа политики постепенно **систематизировались и профессионализировались**. Важными этапами этого

[1] А.В. Толочко ИСТОРИЯ И МЕТОДОЛОГИЯ ПОЛИТИЧЕСКОЙ НАУКИ.2016. стр.12-15

[1] ТЕОРИЯ ПОЛИТИКИ, ИСТОРИЯ И МЕТОДОЛОГИЯ ПОЛИТИЧЕСКОЙ НАУКИ. Кафедра «Гуманитарные дисциплины» 2018.стр.12-14

[2] Методология и методика современного политического анализа: подходы и проблемы1 Ю.В. Ирхин. стр.30

развития стали **создание опросных и статистических методов** оценки **общественного мнения**, **разработка качественных и количественных методов анализа** в социологии и политологии, а также **использование информационных технологий** для сбора и обработки данных.

В **изучении античного периода** важную роль играли **аксиологические критерии** оценки деятельности политических и государственных деятелей, форм государственного устройства и управления. При этом учитывались **моральные ценности и нормы**, существовавшие в обществе. Так, древнегреческие мыслители обращали внимание на различие между **правильными и неправильными формами устройства общества**. Например, **Аристотель** (384–322 гг. до н.э.) в трудах *«Афинская политика»* и *«Политика»* анализировал формы государственного правления, а **Платон** (427–347 гг. до н.э.) в произведениях *«Законы»* и *«Государство»* обосновывал концепцию идеального государства, применяя индуктивные принципы, исторический подход и элементы социологического моделирования.

Современные методы политического анализа включают использование компьютерных моделей, машинного обучения и искусственного интеллекта для анализа данных из различных источников — социальных сетей, новостных порталов, государственных баз данных и других. Эти методы позволяют точнее прогнозировать политические процессы, оценивать их влияние на общество и разрабатывать эффективные стратегии воздействия на политику.

Таким образом, **эволюция методов политического анализа продолжается**, отражая изменения в обществе и технологиях. Современные подходы дают возможность **более глубоко и комплексно исследовать политические процессы**, что способствует **принятию более точных и эффективных управленческих решений** в сфере политики и государственного управления.

В данный период основные методы политического анализа включают следующие:

• Исторический метод — анализ исторических событий, процессов и институтов для понимания природы и причин политических явлений.

• Сравнительный метод — сопоставление политических систем, институтов и процессов с целью выявления сходств и различий между ними.

• Структурно-функциональный метод — изучение политических систем как организованных структур, выполняющих определённые функции в обществе.

• Идеологический анализ — исследование идеологий, их влияния на политические процессы и формирования политических убеждений.

Эти методы послужили фундаментом для развития политической науки и остаются актуальными и значимыми для анализа политических явлений в современном мире. Они помогают исследователям глубже понять сложные политические процессы и принимать осознанные решения, опираясь на анализ фактов и достоверных данных.

Во **второй период** [3] развития политического анализа политика рассматривалась как взаимодействие социальных институтов и групп. Начало этой аналитической традиции связано с трудом американского политолога Артура Бентли *«Процесс управления»* (*The Process of Government*, 1908), который положил основу институциональному подходу в политологии.

Однако институциональный подход сосредоточил внимание преимущественно на формальных структурах, правилах принятия решений и механизмах передачи власти. Такой анализ не учитывал условность политических взаимодействий, роль неформальных и скрытых политических сил, которые нередко определяют реальную динамику политического процесса.

В **последней трети XIX века** развивающаяся политическая наука находилась под сильным влиянием философии, истории и, особенно, юриспруденции. Политология, подобно правоведению, была сосредоточена на изучении политических институтов, понимаемых как государственные органы власти. Политологи того времени исходили из предположения, что между конституционно-правовыми нормами, регулирующими права и привилегии лиц, занимающих государственные должности, и их реальными политическими действиями существует почти полное соответствие. Они стремились собирать фактические данные и точно описывать политические процессы, рассматривая это как главную задачу науки о политике.

Результатом их деятельности стало представление о власти как о «результирующей параллелограмма сил», в которой каждое звено механизма обладает собственными привилегиями и играет определённую роль в принятии государственных решений. По мнению сторонников институционализма, вместо построения абстрактных теорий и открытия «законов политики» следовало изучать функции и взаимодействие элементов политического механизма, что и рассматривалось как основная цель науки.

III период бихевиоризм - Бихевиоризм представляет собой психологическое направление, целью которого является изучение поведения субъекта без обращения к его внутренним состояниям и психическим **процессам**. В период

[3] Р. Т. Мухаев Москва.Юрайт. 2014 ПОЛИТОЛОГИЯ. . стр.390

господства бихевиоризма было разработано несколько методов и подходов к исследованию поведения:

• **Метод условных рефлексов** — предложен **Иваном Павловым**, предполагал выработку реакции на определённый стимул после многократного сочетания его с другим раздражителем, вызывающим психическую реакцию.

• **Экспериментальные исследования на животных** — бихевиористы часто использовали крыс или обезьян для изучения механизмов поведения, памяти и мотивации в различных условиях.

• **Наблюдение и анализ поведения в реальных условиях** — изучение человеческого поведения в школах, больницах, на рабочих местах с целью выявления влияния внешних стимулов и факторов среды на реакции людей.

• **Использование условных реакций в лечении психических расстройств** — метод «условных рефлексов» применялся, например, при лечении фобий и других психических заболеваний, заменяя патологическую реакцию на стимул нормальной.

Методы бихевиоризма внесли значительный вклад в развитие психологии, способствуя более глубокому пониманию механизмов обучения, мотивации и поведения личности.

Однако позднее бихевиоризм подвергся критике за узкий фокус на наблюдаемом поведении, игнорирование внутренних психических процессов и недооценку сознательности субъекта. Можно сказать, что между **институционализмом и бихевиоризмом** существует множество **дискуссий и научных споров**. В области социальных наук эти два подхода представляют собой два широко обсуждаемых направления анализа и объяснения человеческого поведения и общества. Несмотря на различия, оба подхода имеют общую цель — понять механизмы функционирования институтов и их влияние на поведение человека.

Институционализм ориентирован на изучение **формальных и неформальных правил, норм и традиций**, которые формируют и регулируют поведение людей в обществе. Он подчёркивает роль таких институтов, как **государство, образование и экономика**, в формировании **индивидуальных действий и социальных результатов**. **Бихевиоризм**, напротив, сосредоточен на наблюдении и анализе поведения человека в ответ на внешние стимулы, чаще всего на основе экспериментов и эмпирических наблюдений. Одним из ключевых различий между институционализмом и бихевиоризмом является их основная предпосылка.

Институционализм утверждает, что институты стабильны и устойчивы, играют основную роль в формировании поведения, а также подчёркивает влияние культуры и социальных норм на индивидуальные действия. Бихевиоризм же исходит из предположения, что поведение формируется и контролируется преимущественно внешними факторами, такими как награды и наказания, уделяя меньше внимания культурным и социальным влияниям.

Ещё одно различие заключается в их **методологии**. Институционализм опирается преимущественно на **качественные методы исследования** — **исторический анализ**, **сравнительные исследования**, позволяющие понять эволюцию и воздействие институтов в различных контекстах. Бихевиоризм, напротив, базируется на экспериментальных и количественных данных, стремясь проверять и подтверждать гипотезы о человеческом поведении. Однако жёсткая опора на эмпирические данные иногда ограничивает бихевиористский анализ, так как он не всегда способен полностью охватить сложность социального поведения.

Несмотря на эти различия, институционализм и бихевиоризм внесли огромный вклад в понимание общества и человеческого поведения. Институционализм раскрыл роль институтов в формировании социальных и политических структур, что привело к развитию таких направлений, как неоинституционализм и теория рационального выбора. Бихевиоризм, в свою очередь, углубил наше понимание процессов индивидуального принятия решений, оказал влияние на развитие политической науки, менеджмента и психологии.[4]

В заключение можно сказать, что институционализм и бихевиоризм, несмотря на различие подходов и методологий, оба предоставляют ценные представления о сложной природе человеческого поведения и общества. Объединяя сильные стороны обоих направлений, исследователи могут получить более глубокое и всестороннее понимание взаимосвязей между институтами и поведением, что в конечном итоге способствует разработке более эффективных политик и практик для совершенствования общества.

IV этап. Постбихевиоризм

Период постбихевиоризма в психологии связан с разработкой новых методов изучения поведения, выходящих за рамки простых схем «стимул — реакция». В этот период были созданы различные исследовательские подходы, которые учитывали внутренние психологические процессы и когнитивные аспекты поведения. Одним из основных методов постбихевиоризма является экспериментальная психология. Данный метод позволяет посредством

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[4] Lasswell H. Power and Personality. N.Y., 1948.

контролируемых экспериментов изучать влияние различных переменных на поведение человека или животного. Экспериментальная психология даёт возможность определять причинно-следственные связи между стимулами и реакциями, а также исследовать когнитивные процессы, лежащие в основе поведения.

Другим важным методом постбихевиоризма является наблюдение. Этот подход позволяет изучать поведение в естественных условиях, без принуждения и искусственных экспериментальных ситуаций. В зависимости от исследовательской задачи и выбранной методики, наблюдение может быть систематическим или несистематическим. Кроме того, в постбихевиористский период начали активно использоваться нейровизуализационные методы, такие как функциональная магнитно-резонансная томография (фМРТ) и электроэнцефалография (ЭЭГ). Эти технологии позволяют изучать активность мозга в реальном времени и выявлять взаимосвязь между мозговыми процессами и поведением человека. В целом, методы постбихевиоризма направлены на исследование сложных психологических процессов, включающих когнитивные аспекты, мозговую активность и взаимодействие человека с окружающей средой.

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МОЛОДЁЖНОЕ ПРЕДПРИНИМАТЕЛЬСТВО В УЗБЕКИСТАНЕ: ФИНАНСОВЫЕ МЕХАНИЗМЫ И ПЕРСПЕКТИВЫ РАЗВИТИЯ

ВАЛИЕВ УМИД ГУЛАМОВИЧ
заместитель директора Центра « Шаг в будущее» Национального банка Узбекистана
E-mail: UValiev@nbu.uz

АННОТАЦИЯ : В статье проведён комплексный анализ современного состояния молодёжного предпринимательства в Республике Узбекистан, рассмотрены финансово-кредитные механизмы его поддержки и перспективы дальнейшего развития. Автор исследует нормативно-правовую базу, институциональные структуры и государственные программы, направленные на стимулирование деловой активности молодого поколения. Особое внимание уделено анализу указов и постановлений Президента Республики Узбекистан, в частности ПП-60, ПП-61 и ПП-62 от 14 февраля 2025 года, сыгравших ключевую роль в создании национальной инфраструктуры финансирования молодёжных инициатив.
На основе изучения международного опыта (ЕС, Сингапур, Южная Корея, Казахстан) обосновываются предложения по совершенствованию финансовых инструментов, развитию венчурного капитала, внедрению краудфандинговых платформ и формированию единой цифровой экосистемы молодёжного предпринимательства.
В работе используется системный, сравнительно-правовой и институциональный подход. Делается вывод о том, что молодёжное предпринимательство становится стратегическим фактором инновационного развития Узбекистана, требующим долгосрочной финансовой поддержки, образовательных реформ и укрепления партнёрства государства с частным сектором.

Ключевые слова: *молодёжное предпринимательство, стартапы, финансирование, венчурный капитал, гранты, цифровизация, государственная поддержка, Узбекистан.*

Молодёжное предпринимательство в современной глобальной экономике представляет собой не только форму самореализации личности, но и важнейший механизм мобилизации человеческого капитала.

В Республике Узбекистан, где более шестидесяти процентов населения составляют молодые граждане, развитие предпринимательской активности этой группы становится одним из приоритетов государственной политики. Формирование конкурентоспособной, инновационно ориентированной молодёжи является ключевым условием устойчивого социально-экономического роста.

Современные процессы цифровизации, переход к экономике знаний и глобальные вызовы формируют необходимость переосмысления подходов к поддержке молодых предпринимателей. Молодёжное предпринимательство следует рассматривать как инструмент интеграции молодёжи в экономическую жизнь, снижения безработицы и повышения инновационной активности общества.

Молодые предприниматели являются носителями новых идей и технологических решений, способствуют развитию стартап-экосистемы, внедряют цифровые технологии и социально ориентированные инициативы. Вместе с тем именно эта категория сталкивается с целым рядом барьеров — недостатком финансовых ресурсов, ограниченным доступом к кредитам, слабым управленческим опытом и бюрократическими процедурами. Преодоление данных проблем возможно только при формировании системной государственной поддержки, основанной на сочетании финансовых инструментов, образовательных программ и институтов наставничества.

Государственная стратегия Узбекистана в области молодёжного предпринимательства строится на принципах инклюзивности, инновационности и открытости. За последние годы в стране приняты десятки нормативных актов и программ, направленных на формирование современной предпринимательской экосистемы. Ключевыми среди них стали три постановления Президента Республики Узбекистан от 14 февраля 2025 года, которые обозначили переход к комплексной модели финансовой поддержки:

– **Постановление Президента Республики Узбекистан № ПП-60 «О мерах по дальнейшему развитию молодёжного предпринимательства и повышению занятости молодёжи»**;

– **Постановление Президента Республики Узбекистан № ПП-61 «О дополнительных мерах по трудоустройству выпускников высших образовательных учреждений и поддержке их предпринимательских инициатив»**;

– **Постановление Президента Республики Узбекистан № ПП-62 «О мерах по дальнейшему совершенствованию системы поддержки молодёжных бизнес-проектов»**.

Постановление № ПП-60 предусматривает создание **Фонда развития молодёжного предпринимательства** при Агентстве по делам молодёжи с уставным капиталом в 100 млн долларов США. Средства фонда направляются на предоставление льготных кредитов молодым предпринимателям в размере до 2,5 млрд сумов на срок до семи лет с льготным периодом до трёх лет. Государство берёт на себя частичное страхование рисков и субсидирование процентных ставок, что делает финансирование максимально доступным для начинающих бизнесменов.

Постановление № ПП-61 заложило правовые основы реализации программы **«Шаг в будущее»**, ориентированной на поддержку инновационных проектов выпускников вузов и молодых специалистов. Программа предусматривает дополнительное финансирование в объёме 100 млн долларов США для обучения предпринимательским навыкам, сопровождения бизнес-планов и оказания банковских услуг в формате акселерации. В реализации программы принимают участие Национальный банк Узбекистана, Министерство высшего образования, науки и инноваций, а также Агентство по делам молодёжи, что обеспечивает её межведомственный и практико-ориентированный характер.

Постановлением № ПП-62 предусмотрено преобразование одного из коммерческих банков в специализированный институт поддержки молодёжных проектов. На его базу выделено 200 млн долларов США для предоставления микрокредитов до 100 млн сумов самозанятым гражданам и молодым предпринимателям на льготных условиях сроком до семи лет. Эта инициатива закрепила новую институциональную модель финансирования и усилила роли банков в развитии молодёжного сектора.

Принятие этих трёх документов стало переломным моментом в государственной политике: страна перешла от фрагментарной поддержки к системному механизму финансирования, основанному на принципе «полного цикла» — от идеи и обучения до капитализации и масштабирования бизнеса. Значительную координирующую роль в этом процессе выполняет Центр «Шаг в будущее» Национального банка Узбекистана, где автор статьи осуществляет научно-практическую деятельность.

С теоретической точки зрения молодёжное предпринимательство опирается на концепции Й. Шумпетера, Р. Кантийона и П. Друкера, рассматривавших предпринимательство как инновационную и рискоориентированную форму экономической инициативы.

Молодёжь характеризуется гибкостью, открытостью к новым технологиям и высокой мотивацией к самореализации, что при наличии должной поддержки позволяет ей быстро адаптироваться к рыночным условиям.

Источники финансирования молодёжных предприятий в Узбекистане можно разделить на внутренние (личные сбережения, семейные вложения) и внешние (банковские кредиты, гранты, субсидии, венчурные инвестиции и краудфандинг). Наиболее востребованным остаётся льготное банковское кредитование. Коммерческие банки при участии Центрального банка предлагают молодым предпринимателям займы по ставкам, ниже ключевой на 3–4 пункта, с расширенными сроками погашения (до семи лет) и возможностью государственного гарантирования.

По данным Национального банка, с момента запуска программы в рамках Фонда развития молодёжного предпринимательства льготные кредиты получили более 12 тысяч молодых бизнесменов на общую сумму свыше 3 триллионов сумов. Однако доля молодёжи, имеющей доступ к банковскому финансированию, по-прежнему не превышает 20 процентов. Основные препятствия — жёсткие требования к залоговому обеспечению и низкий уровень финансовой грамотности. В этой связи особое значение приобретает система образовательных курсов и бизнес-тренингов, проводимых совместно банками и Центром «Шаг в будущее».

Вторым важным направлением являются гранты и субсидии. Государственные и международные организации активно финансируют молодёжные стартапы, ориентированные на инновации и социальный эффект. По данным Министерства инноваций, с 2022 по 2025 годы при поддержке ПРООН, ЕБРР, GIZ и USAID реализовано более 800 проектов в областях агротехнологий, зелёной энергетики и электронной коммерции.

Перспективным направлением становится венчурное инвестирование. Создание при Фонде молодёжного предпринимательства венчурного фонда в размере 10 млн долларов США и появление частных инициатив в рамках Angels Fund способствуют развитию инновационной экосистемы страны. В IT Park Узбекистана формируется среда, где государственные и частные инвесторы могут вкладывать капитал в перспективные технологические стартапы.

Международный опыт подтверждает эффективность гибридных моделей финансирования, где государственная поддержка сочетается с частными инвестициями. В Сингапуре успешно функционирует программа *Start-Up SG*, в Южной Корее — государственная сеть инкубаторов при университетах, в Казахстане — национальный фонд «Байтерек», в Латвии — модель софинансирования *ALTUM*. Узбекистан адаптирует эти практики с учётом национальных приоритетов и региональных особенностей.

Отдельного внимания заслуживает цифровизация финансовой сферы. Создание единого портала молодёжного предпринимательства позволит объединить все программы и грантовые инициативы, обеспечить прозрачность и ускорить процедуры финансирования.

Важную роль в формировании устойчивой экосистемы играет предпринимательское образование. Во многих вузах страны внедряются курсы по цифровой экономике и проектному управлению. По данным Центра «Шаг в будущее», 70 % выпускников его образовательных программ в течение года после обучения создают собственные предприятия, что подтверждает высокую эффективность интеграции финансовых и образовательных инструментов.

Таким образом, молодёжное предпринимательство в Узбекистане вступает в новую фазу развития. Созданы нормативные, финансовые и институциональные механизмы, которые позволяют молодёжи реализовывать предпринимательский потенциал. Дальнейшее развитие венчурных инструментов, цифровизация финансовой инфраструктуры и интеграция образования с бизнесом станут основой устойчивого роста и инновационного прогресса страны.

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Sovet Ittifoqining parchalanishi va Markaziy Osiyo davlatlarida chegaraviy nizolarning yuzaga kelish sabablari

Jahon iqtisodiyoti va diplomatiya universiteti Amaliy siyosatshunoslik yo‘nalishi magistranti
Mamatqulova Maftuna Akmaljon qizi

Annotatsiya: 1991-yilda sovet Ittifoqining parchalanishi Markaziy Osiyoda yangi mustaqil davlatlarning shakllanishiga olib keldi. Biroq, bu davlatlar suverenitetlari bilan birga noaniq chegaralar, tarixiy-etnik qarama qarshiliklar, resurslar taqsimoti, anklavlar va mintaqaviy infratuzilma muammolarini meros qilib oldi. Ushbu maqolada chegara nizolarining asosiy omillari-etnik parchalanish, suv resurslari ustidan kurash, anklavlar, delimitatsiya va demarkatsiyaning yo‘ligi hamda siyosiy manfaatlar tahlil qilinadi. Shuningdek, suv taqsimoti bilan bog‘liq ekologik inqirozlar, xususan Orol muammosi, transchegaraviy ifloslanish, gidroenergetika loyihalari va iqlim o‘zgarishining salbiy ta’siri yoritiladi. Maqola yakunida ushbu muammolarni bartaraf etish bo‘yicha xalqaro huquqiy mexanizmlar, mintaqaviy hamkorlik va barqaror diplomatik yondashuvlar zarurligi ta’kidlanadi.
Kalit so‘zlar: Sovet Ittifoqi, Markaziy Osiyo, chegara nizolari, suv resurslari, anklav, Orol muammosi, delimitatsiya, demarkatsiya, iqlim o‘zgarishi, gidroenergetika.
Аннотация: Распад Советского Союза в 1991 году привёл к образованию новых независимых государств в Центральной Азии. Однако эти государства унаследовали, наряду с суверенитетом, нечёткие границы, исторические и этнические конфликты, распределение ресурсов, анклавы и проблемы региональной инфраструктуры. В данной статье анализируются основные факторы пограничных конфликтов: этническая раздробленность, борьба за водные ресурсы, анклавы, отсутствие делимитации и демаркации, а также политические интересы. Также рассматриваются экологические кризисы, связанные с распределением воды, в частности, проблема Аральского моря, трансграничное загрязнение, гидроэнергетические проекты и негативное влияние изменения климата. В заключение статьи подчёркивается необходимость международно-правовых механизмов, регионального сотрудничества и устойчивых дипломатических подходов для решения этих проблем.
Ключевые слова: Советский Союз, Центральная Азия, пограничные конфликты, водные ресурсы, анклавы, проблема Аральского моря, делимитация, демаркация, изменение климата, гидроэнергетика.
Abstract: The collapse of the Soviet Union in 1991 led to the formation of new independent states in Central Asia. However, these states inherited, along with their sovereignty, unclear borders, historical and ethnic conflicts, resource distribution, enclaves, and regional

infrastructure problems. This article analyzes the main factors of border conflicts - ethnic fragmentation, the struggle over water resources, enclaves, the lack of delimitation and demarcation, and political interests. It also discusses environmental crises related to water distribution, in particular the Aral Sea problem, transboundary pollution, hydropower projects, and the negative impact of climate change. The article concludes by emphasizing the need for international legal mechanisms, regional cooperation, and sustainable diplomatic approaches to address these problems.
Keywords: Soviet Union, Central Asia, border conflicts, water resources, enclave, Aral Sea problem, delimitation, demarcation, climate change, hydropower.

Kirish: 1991-yilda Sovet Ittifoqining parchalanishi tektonik hodisa bo‘lib, xalqaro tizimning tubdan qayta tashkil etilishiga, jumladan, Markaziy Osiyoda yangi mustaqil davlatlar: Qozog‘iston, O‘zbekiston, Qirg‘iziston, Tojikiston, Turkmanistonning paydo bo‘lishiga olib keldi. Biroq, ular suverenitet bilan bir qatorda hal qilinmagan hududiy-ma’muriy muammolar majmuasini, birinchi navbatda, aniq bo‘lmagan chegaralarni meros qilib oldilar, ular ba’zi hollarda keskin davlatlararo qarama-qarshiliklar va nizolar manbai bo‘ldi.

SSSRda ittifoq respublikalari o‘rtasidagi chegaralar rasmiy ma’muriy xarakterga ega bo‘lib, davlat chegaralari sifatida qabul qilinmas edi. Respublikalar o‘rtasida tovarlar, mehnat va resurslar erkin harakatlanar, suvdan foydalanish, yer va aloqa masalalari markazlashgan holda tartibga solinardi. 1991-yildan keyin bu ma’muriy chiziqlar to‘liq delimitatsiya va demarkatsiya qilinmasdan, davlat chegaralari maqomida amalda “muzlatilgan” edi.

Sovet davrida ko‘plab chegaralar haqiqiy etnik, geografik va iqtisodiy omillar hisobga olinmagan holda chizilgan, bu esa 1920-yillardagi milliy-hududiy demarkatsiya siyosatining natijasi edi. Aholi zichligi, etnik mozaikasi va iqtisodiy o‘zaro bog‘liqligi yuqori bo‘lgan Farg‘ona vodiysida vaziyat ayniqsa og‘ir edi.

Asosiy qism: Sovet Ittifoqi parchalanib, 1991-yilda mustaqillikka erishgach, Markaziy Osiyo davlatlari avvallari ma’muriy xarakterga ega bo‘lgan milliy chegaralarini qayta ko‘rib chiqish va himoya qilish zaruriyatiga duch keldi. Demarkatsiyaning aniq mexanizmlarining yo‘qligi, shuningdek, sovet davridan meros bo‘lib qolgan hududiy, etnik va huquqiy qarama-qarshiliklar chegara nizolari va mahalliy nizolarning paydo bo‘lishiga olib keldi. Ushbu sabablarni bir nechta asosiy yo‘nalishlarga bo‘lish mumkin:

Eng muhim omillardan biri Sovet davridagi chegaralarning sun’iy chizilishi natijasida yuzaga kelgan etnik tarqoqlik merosi bo‘ldi. 1920—30-yillardagi etnohududiy demarkatsiya siyosatida ko‘pincha etnik guruhlarning haqiqiy taqsimoti hisobga olinmadi, bu esa chegaraning har ikki tomonida etnik ozchiliklarning paydo bo‘lishiga olib keldi. Bu, ayniqsa, o‘zbeklar, qirg‘izlar va tojiklar asrlar davomida qo‘shilib yashab kelgan, aholi zich joylashgan Farg‘ona vodiysida keskin namoyon bo‘ldi.

Vaziyat anklavlar - ma'muriy jihatdan bir mamlakatga tegishli bo'lgan, ammo boshqasi bilan o'ralgan hududlar mavjudligi bilan yanada og'irlashdi. Eng mashhur anklavlar orasida So'x (Qirg'iziston ichidagi O'zbekiston), Vorux (Qirg'iziston ichidagi Tojikiston) va Shoximardon (Qirg'iziston ichidagi O'zbekiston) bor. Bu anklavlar, ayniqsa, ijtimoiy-iqtisodiy sharoitning yomonlashuvi, resurslar uchun raqobat va millatchilik kayfiyatining kuchayishi sharoitida keskinlik omillariga aylandi.

Anklavlar yaqinida sodir bo'lgan mojarolar ko'pincha chegarachilar va tinch aholi ishtirokidagi mahalliy qurolli to'qnashuvlarga aylanib ketgan. Masalan, 2019-yil iyul oyida Voruxda tojik va qirg'iz fuqarolari o'rtasida tartibsizliklar kelib chiqdi va bu tartibsizliklar rasmiy aralashuvni talab qildi.

1991-yildan beri mintaqa davlatlari o'rtasidagi chegaralarning katta qismi belgilanmaganligicha qoldi. 2000-yillarning o'rtalariga kelib Qozog'iston, O'zbekiston va Turkmaniston o'rtasidagi chegaralarning faqat bir qismi rasman belgilab qo'yilgan, tojik-qirg'iz, o'zbek-qirg'iz va tojik-o'zbek chegaralari bahsliligicha qolgan.

Bu yer, suv, yo'llar va infratuzilmaga egalik qilish davlatlar o'rtasida ham, chegaraning ikkala tomonidagi jamoalar o'rtasida ham raqobat mavzusiga aylangan huquqiy bo'shliqni yaratdi. Ko'pincha mahalliy aholi chegaralarni qonuniy emas, balki "yuqoridan" o'rnatilgan deb qabul qilishdi, bu esa keskinlikning kuchayishiga yordam berdi.

Qurg'oqchil iqlim sharoitida va qishloq xo'jaligining sug'orish tizimlariga yuqori darajada bog'liqligi sharoitida suvdan foydalanish chegaradagi keskinlikning asosiy omillaridan biriga aylandi. Sovet davrida rejali iqtisodiyot ehtiyojlari uchun yaratilgan sug'orish kanallari, suv omborlari va buloqlar, postsovet davrida suveren davlatlar o'rtasidagi raqobat obyektiga aylandi.

Ilgari yagona iqtisodiy makon doirasida erkin foydalanilgan yaylovlar qo'shni hududlar aholisi uchun qo'llab-quvvatlanmaydi. Qirg'iziston va Tojikistonda yaylovlarga chiqish, ayniqsa, Botken va So'g'd viloyatlarida o'nlab noxush hodisalarga sabab bo'lgan.

Ishonchsizlik va chegaralarni harbiylashtirish. Chegaradagi mojarolar chegara xizmatlari o'rtasida o'zaro munosabatlarning shaffof mexanizmlarining yo'qligi, harbiy ishtirokning ko'payishi va hatto chegaraning ayrim uchastkalarini qazib olish tufayli ham keskinlashdi. Bu qo'shnilar o'rtasida qamal va ishonchsizlik hissini keltirib chiqardi, transchegaraviy savdo va aholi o'rtasidagi aloqalarning rivojlanishiga to'sqinlik qildi.

SSSR parchalanganidan keyin Markaziy Osiyo mamlakatlari hayotiy muhim tabiiy resurslar – birinchi navbatda suv, yaylovlar, haydaladigan yerlar va transport yo'llari uchun raqobat kuchaydi. Aniq belgilangan davlatlararo kelishuvlar va zaif muvofiqlashtiruvchi mexanizmlar mavjud bo'lmaganda, har bir mamlakat o'zi uchun ilgari yagona iqtisodiy tizim doirasida foydalanilgan resurslarni maksimal darajada ta'minlashga intildi.

Hayot mavjudligining asosiy manbayi hisoblangan suv va undan to‘g‘ri foydalanish allaqachon jahon hamjamiyatining e’tibor markazidagi ustuvor vazifalardan biriga aylanib ulgurgan. Suv resurslaridan foydalanishdagi raqobat davlatlar o‘rtasidagi global ahamiyatga molik konfliktlarga sabab bo‘lib kelayotganligi ham sir emas.

Prognozlarga ko‘ra, 2040- yilga borib “suv stressi” eng yuqori bo‘lgan mamlakatlar qatoriga kiruvchi Markaziy Osiyo mamlakatlari o‘rtasidagi aloqalarning yanada mustahkamlanishiga soya solayotgan asosiy muammolardan biri ham suv ustidan bo‘lgan raqobat sanaladi. Nafaqat mintaqa, balki jahon hamjamiyatining e’tibor markazida bo‘lgan mazkur ekologik falokatning kelib chiqish sabablari haqida to‘xtalar ekanmiz, uni mustamlakachi mamlakatning o‘ziga qaram davlatlar uchun tayyorlab qo‘ygan yana bir “*unutilmas tuxfasi”* deyishimiz mumkin. “*Puxta o‘ylangan*” imperialistik siyosat natijasi o‘laroq, Orol dengizining asosiy manbayi hisoblangan Amudaryo va Sirdaryo suvlarining bir tomchisini ham dengizga yetib borishiga yo‘l qo‘yilmasdan ularni qishloq xo‘jaligi uchun sarflashda bosh-qosh bo‘lingan. Bundan ko‘zlangan asosiy maqsad esa Orol dengizi qurib bitgan bir sharoitda, uni Rossiyadan keluvchi Sibir daryolari orqali to‘ldirish bilan mintaqaning Rossiyaga qaramligini yanada oshirish hisoblangan.

Qozog‘iston va O‘zbekistonning o‘rtasida joylashgan Orol dengizi mamlakatimizning asosiy e’tibor markazidagi masalalardan hisoblanishi ma’lum. Jumladan, birinchi Prezidentimiz Islom Karimov hamda O‘zbekiston Respublikasi Prezidenti Shavkat Mirziyoyevning BMT minbarida turib so‘zlagan har bir nutqida, aynan “Orol fojeasi”ga alohida e’tibor qaratilib muammoni hal qilishda butun dunyo hamjamiyatining bir yoqadan bosh chiqarishi kerakligiga urg‘u beriladi. *Zero, Orol muammosi – mintaqaviy emas, xalqaro fojeadir*.

Mintaqani asosiy suv bilan ta’minlovchi daryolarning aksariyati, xususan Amudaryo hamda Sirdaryo ham transchegaraviy ahamiyat kasb etadi-ki, undan samarali foydalanishning yagona yo‘li o‘zaro hamkorlik hamda murosa sanaladi.

Ahamiyatga molik jihati shundaki, nafaqat Markaziy Osiyoning besh mamlakatidan balki Afg‘oniston hududidan oqib o‘tuvchi Amudaryo suv resurslariga egalik qilishdagi muammolar bir karra ko‘paydi. Negaki, 2022- yil 31- martida Tolibon hukumati mamlakat shimolida ulkan “Qo‘shtepa” kanali qurish taqdimotini o‘tkazgan hamda hozirgi kunda uning qurilishi jadal sur’atlar bilan davom etmoqda. Tashvishlanarlisi, agarda loyiha amalga oshiriladigan bo‘lsa, Amudaryo suvining deyarli uchdan bir qismi Afg‘onistonga oqishi hamda O‘zbekistonning Xorazm, Navoiy, Buxoro va Surxondaryo viloyatlari hamda Qoraqalpog‘iston Respublikasida suv taqchilligini keltirib chiqarishi mumkin.

Bunday vaziyatda O‘zbekiston rasmiylari oldida preventiv diplomatiyani ishga solgan holda muzokaralar o‘tkazish hamda masalani har bir mamlakat uchun manfaatli tarzda hal qilish yotibdi.

Umuman olganda, BMTning transchegaraviy daryo suvlaridan foydalanish to‘g‘risidagi konvensiyasiga mintaqaning har bir mamlakati tomonidan qat’iy amal qilinsa hamda suvni qo‘shnilariga nisbatan bosim quroli sifatida foydalanilmasa mintaqaning har bir a’zosi uchun manfaatli bo‘lgan bo‘lar edi.

Markaziy Osiyo mintaqasinining ikki mamlakati Qirg‘iziston va Tojikiston oqimning yuqori qismida joylashgan bo‘lsa, quyi oqim mamlakatlariga Qozog‘iston, Turkmaniston hamda O‘zbekiston kiradi. Sobiq Sovet Ittifoqi davrida “oqilona foydalanish niyatida” yagona elektr tarmog‘i yaratilgan. Katta daryolar va kanallar tizimiga ega bo‘lgan mamlakatlar elektr tokini sotishgan. Bunday elektr eksporti juda ko‘plab SSSR mamlakatlari uchun manfaatli edi. Suvdan foydalanishning sovet strukturasi mezoni maksimal umumiy unum olishdan iborat bo‘lgan. Bunda barcha respublikalar SSSR umumiy byudjetidan zaruriy kompensatsiyalarni olishardi, lekin ikki tomonlama kelishuv asosida emas, balki umumiy asosdadir.

Mustaqillikka erishgandan so‘ng, shubhasiz milliy manfaatlarning ustuvorligi sababli yuqori oqim mamlakatlariga suv resurslari orqali quyi oqim mamlakatlariga o‘ziga xos bosim o‘tkazishga urinish holatlari ham kuzatilgani sir emas.

Xususan, Qirg‘iziston tomonidan Norin daryosida GES qurish masalasi, Tojikiston tomonidan Rog‘un to‘g‘oni kabi loyihalar qolgan mamlakatlar tomonidan ulkan muhokama ostiga olindi.

Ma’lumotlarga qaraganda, dunyodagi chuchuk suvning 72 foizi qishloq xo‘jaligida, 16 foizi sanoat ishlab chiqarishida, 12 foizi maishiy xizmat ko‘rsatishda foydalaniladi. Ma’lumki, Markaziy Osiyo mamlakatlarining asosiy daromadi hali- hanuz qishloq xo‘jaligi mahsulotlari bilan bog‘liq. Bu sektor esa eng ko‘p suv sarfini talab qilishi sir emas. Qishloq xo‘jaligi maqsadlarida suvga bo‘lgan talabning ortib borishi turli hududlar va sektorlar o‘rtasida suv taqsimoti bo‘yicha nizolarga olib keldi.

Ayniqsa, mamlakatlar o‘rtasidagi chegara hududlar yoxud anklav va eksklavlarda yuzaga keluvchi aholi o‘rtasidagi ko‘plab nizolarning eng asosiy sababi ham suv ustidan bo‘lgan raqobat sanaladi. Quyida ba’zi misollarni ko‘rib chiqsak:

· Qirg‘iziston va Tojikiston o‘rtasida 2021-yilda Botken viloyatida suvdan foydalanish bo‘yicha chegara to‘qnashuvi.

· Qirg‘iziston va O‘zbekiston o‘rtasida 2016-yilda So‘x anklavidagi suvdan foydalanish bo‘yicha chegaradagi mojaro.

· 2013-yilda Farg‘ona vodiysida suvdan foydalanish bo‘yicha Qirg‘iziston va O‘zbekiston o‘rtasidagi chegaradagi mojaro.

· Qirg‘iziston va Tojikiston o‘rtasida 1999-yilda Isfara daryosidagi suvdan foydalanish bo‘yicha chegaradagi to‘qnashuv.

· Qirg‘iziston va O‘zbekiston o‘rtasida 1999-yilda So‘x anklavidagi suvdan foydalanish bo‘yicha chegaradagi to‘qnashuv.

Iqlim oʻzgarishi sababli mintaqadagi muzliklarning erishi suv mavjudligiga taʼsir qiladi va suv resurslari boʻyicha potensial mojarolarga olib keladi. Markaziy Osiyo mintaqasini suv bilan taʼminlaydigan qor va muz maydonlari shiddat bilan qisqarmoqda. Maʼlumotlarga koʻra soʻnggi 50 yilda muzliklarning uchdan bir qismi qurib bitgan. BMT maʼlumotlariga koʻra, bugun dunyoning 40 ta nuqtasida suvga oid tortishuvlar harbiy nizolarga aylanib ketishi mumkin. Bu mintaqalardan bir Markaziy Osiyodir.

Ifloslantiruvchi moddalarning umumiy suv havzalariga chiqishi mamlakatlar oʻrtasida ifloslanishni tozalash masʼuliyati boʻyicha nizolarni keltirib chiqarishi mumkin.

Shu oʻrinda aytib oʻtish joizki, har bir inson ona tabiatni asrab- avaylashi, u bilan ehtiyotkorona munosabatda boʻlishi, suv resurslarini tejab foydalanmoqligi kerak. Davlatlar ham oʻzaro kelishgan holda murosa bilan boshqa mamlakat manfaatlarini ham inobatga olgan holda siyosat yuritmogʻi lozim.

Viloyatning asosiy suv yoʻllari – Sirdaryo va Amudaryo, shuningdek, sovet davrida qurilgan oʻnlab irrigatsiya kanallari va suv omborlari suveren davlatlarning kelajakdagi chegaralari hisobga olinmagan holda respublikalar oʻrtasida taqsimlangan. 1991-yildan keyin havza mamlakatlari bir-biriga qarama-qarshi manfaatlarga duch keldi: suvning yuqori oqimi (Qirgʻiziston, Tojikiston) birinchi navbatda energiya uchun zarur boʻlsa, quyi oqim (Oʻzbekiston, Qozogʻiston, Turkmaniston) undan qishloq xoʻjaligi yerlarini sugʻorish uchun foydalanar edi. Suvni qayta taqsimlashning samarali mexanizmi yoʻqligi sababli nizolar kuchaydi. Qirgʻiziston va Tojikiston suv taʼminotini bir tomonlama tartibga sola boshladi, bu esa qoʻshnilarining noroziligiga sabab boʻldi. Masalan, Tojikistondagi Rogʻun GESi va Qirgʻizistondagi Qambarota GESi qurilishi Oʻzbekiston bilan keskinlikni keltirib chiqardi.

Chegara hududlarida, ayniqsa, Qirgʻizistonning Botken viloyatida yaylov va dehqonchilik uchun kurash keskinlashdi. Ilgari maʼmuriy mansubligidan qatʼiy nazar umumiy resurslardan foydalanish imkoniyatiga ega boʻlgan mahalliy aholi endi cheklovlar, tekshiruvlar va baʼzi hollarda majburiy chiqarib yuborishga duch keldi. Chegaradagi yaylovlar tojik, qirgʻiz va oʻzbek jamoalari oʻrtasidagi raqobat mavzusiga aylandi, bu esa muntazam ravishda noxush hodisalarga olib keldi. Sobiq yagona transport tizimining buzilishi alohida aholi punktlari orasidagi tranzit yoʻllarning boshqa davlatlar, shu jumladan anklavlar hududi orqali oʻtishini anglatadi. Bu yoʻllarni yopish, bojxona toʻlovlari, chegara postlarini oʻrnatish va ayrim hollarda bahsli hududlarni harbiy mustahkamlash kabi bir tomonlama harakatlarga olib keldi.

Masalan, 1990-yillarning oxiri va 2000-yillarning boshlarida Oʻzbekiston transchegaraviy terrorizm tahdidiga oʻz chegarasining bir qator uchastkalarini minalash yoʻli bilan javob qaytardi, bu esa qoʻshnilari bilan allaqachon keskinlashgan munosabatlarni keskinlashtirdi va muhim resurslardan foydalanishga taʼsir qildi.

Suvni muvofiqlashtirish boʻyicha davlatlararo komissiya (ICWC) kabi resurslardan foydalanishni tartibga solishning davlatlararo mexanizmlarini yaratishga urinishlar barqaror samara bermadi. Ko‘pgina qarorlar deklarativ bo‘lib qoldi va mintaqa mamlakatlari o‘rtasida ishonch yo‘qligi ularni bir tomonlama choralar ko‘rishga undadi, ko‘pincha joylarda vaziyatni beqarorlashtirdi.

SSSR parchalangan paytda chegaralarning faqat kichik bir qismi qonuniy ravishda tasvirlangan. 1990-2000-yillarda ularni chegaralash va demarkatsiya qilishga urinishlar ko‘pincha qarama-qarshi xaritalar, hujjatlarning yo‘qligi va partiyalarning siyosiy irodasiga duch kelgan. Masalan, O‘zbekiston va Qirg‘iziston, shuningdek, Tojikiston va Qirg‘iziston o‘rtasidagi chegaralar hamon tortishuvlar va zo‘ravonliklar epizodlari mavzusidir.

Chegaradagi mojarolar ko‘pincha siyosiy elita tomonidan ichki konsolidatsiya, aholini safarbar qilish yoki qo‘shni davlatlarga bosim o‘tkazish vositasi sifatida foydalanilgan. Bu muzokaralar jarayonini murakkablashtirdi va chegaralarni harbiylashtirishga yordam berdi.

Eng keskin hodisalar tojik-qirg‘iz va o‘zbek-qirg‘iz chegaralarida qayd etilgan. Ayniqsa, 2014, 2021 va 2022-yillarda Botken viloyatidagi to‘qnashuvlar qonli bo‘lgan. Mojaro, asosan, chegaralarning hal etilmagan holati va suv resurslari uchun raqobat, shuningdek, anklavlarning mavjudligi bilan bog‘liq. Bu to‘qnashuvlar qurol ishlatish, tinch aholining o‘limi va infratuzilmaning vayron bo‘lishi bilan birga kechdi.

Markaziy Osiyodagi chegara mojarolari sovet merosining bevosita oqibati, jumladan, o‘zboshimchalik bilan chizilgan chegaralar, respublikalararo nizolarni hal etish mexanizmlarining yo‘qligi va institutsional uzluksizlikning zaifligi. Sovet Ittifoqidan keyingi suverenitet ma’muriy chiziqlarni qat’iy davlat chegaralariga aylantirdi, bu etnik va resurs qarama-qarshiliklarini yanada kuchaytirdi. Ushbu mojarolarni hal qilish chegaralarni to‘liq huquqiy jihatdan belgilashdan tortib, xalqaro va mintaqaviy tashkilotlarni jalb etgan holda transchegaraviy hamkorlikning barqaror mexanizmlarini yaratishgacha bo‘lgan kompleks yondashuvni talab qiladi.

Xulosa: 1991-yilda Sovet Ittifoqi parchalanishi natijasida Markaziy Osiyioda yangi mustaqil davlatlar vujudga keldi, ammo ular meros qilib olingan aniqlanmagan chegaralar, sun’iy chizilgan etnik chegaralar, resusrlar ustidan bahslar va institutsional bo‘shliqlar bilan yuzlashdilar. Ayniqsa, Farg‘ona vodiysi va anklav joylashgan hudularda etnik mozaika, suv va yer resurlari ustidan raqobat keskin mojarolarga sabab bo‘ldi Suv resurslari bo‘yicha eng katta qarama-qarshilik yuqori va quyi oqim davlatlari o‘rtasida kuzatildi. Bu mojaro energiya ehtiyoji (Qirg‘iziston, Tojikiston) va qishloq xo‘jaligi sug‘orish talablari (O‘zbekiston, Qozog‘iston, Turkmaniston) o‘rtasidagi tafovutdan kelib chiqdi. Iqlim o‘zgarishi, muzliklarning erishi, Qo‘shtepa kanali kabi loyihalar suv tanqisligini kuchaytirib, mintaqadagi mojarolar xavfini yanada oshirdi. Mavjud muammolarni hal qilish uchun yagona samarali yo‘l – bu chegara chiziqlarini aniq huquqiy asosda delimitatsiya va demarkatsiya qilish, suv va resurslardan foydalanish bo‘yicha mintaqaviy muvofiqlashtiruvchi mexanizmlarni yaratish, hamkorlik va o‘zaro ishonchga asoslangan siyosat yuritishdir. Aks holda, chegara va resurs mojarolari mintaqaviy barqarorlik va taraqqiyotga jiddiy tahdid solishda davom etadi.

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BUXORO SHAHRINING QADIMGI DAVRDAN TO HOZIRGACHA BO'LGAN TARIXI

Mamasharipova SHahloxon
Namangan davlat universiteti, Tarix yo'nalishi talabasi

Annotatsiya
Ushbu maqola Buxoro shahrinining yaratilish tarixi, Somoniylar davridagi hayoti va Buxoro xonligi davrida bunyod etilgan me'moriy obidalar haqida ma'lumot beradi.
Kalit so'z. Buxoro, Buyuk ipak yo'li, Turon zamini, Ismoli Somoniy, Mir Arab madrasasi, Nasr II, So'g'diyona, Makedoniyalik Aleksandr.
Аннотация
В статье представлена информация об истории создания города Бухары, его жизни в эпоху Саманидов и архитектурных памятниках, построенных в период Бухарского ханства.
Ключевые слова: Бухара, Великий Шелковый путь, туранские земли, исмаилиты Саманиды, медресе Мир Араб, Наср II, Согдиана, Александр Македонский.
Annotation
This article provides information about the history of the creation of the city of Bukhara, its life during the Samanid era, and the architectural monuments built during the Bukhara Khanate.
Keywords. Bukhara, Great Silk Road, Turanian lands, Ismali Samanid, Mir Arab Madrasah, Nasr II, Sogdiana, Alexander the Great

Kirish. Buxoro- O'rta Osiyoning eng qadimgi va mashur shaharlaridan biri. U asrlar davomida ilm-fan, madaniyat, savdo va din markazi sifatida tanilgan. "Buxoro" so'zi qadimgi manbalarda "muqaddas joy", " ibodat maskani" degan ma'nonilarda ishlatilgan. Bu shahar o'zining boy tarixi, me'moriy yodgorliklari va ilmiy merosi bilan butun dunyoga mashhur.

Buxoro--sharqning durdonasi, tarix va madaniyat maskani, o'zining betakror obidalari, qadimiy ko'chalari va ilm-ma'rifat manbalari bilan asrlar davomida xalqimiz g'ururi bo'lib kelgan. U nafaqat mamlakatimiz, balki butun musulmon olamining muhim madaniy va ilmiy markazlaridan bo'lgan. Shahar asrlar davomida ko'plab tarixiy voqealarning guvohi, buyuk allomalar va davlat arboblarining vatani sifatida tanilgan. Jumladan, buyuk hadisshunos olim imom Al-Buxoriy, fiqh olimi Abu Hafs

Kabir al-Buxoriy, tabib, faylasuf va ensiklopedist Abu Ali Ibin Sino, Abu Bakr Narshaxiy kabi ko'plab allomalar yashab o'tganlar.

Buxoro tarixida biz ko'plab chet el yozuvchilari asarlaridan ham ma'lumot olishimiz mumkin. Jumladan, arxeolog va sharqshunos Nikolay Ivanovich Veselovskiy shunday degan, U Buxoroni" SHarqning qadimiy ilm va madaniyati markazi" deb atagan. Sayyoh va tabiatshunos Aleksey Fedchenko 1870-yillarda O'rta Osiyoga sayohat qilib, "Puteshestvie Bukharskoe khanstvo" ya'ni Buxoro amirligiga sayohat" asarini yozgan. U o'z asarida Buxoroga shunday tarif bergan "Buxoro-bu musulmon SHarqining yuragi, ilm va e'tiqod markazi. Uning bozorlari Hayot bilan to'la, madrasa va masjidlari esa tinimsiz ilm maskani' deb yozgan.

Shu sababli Buxoro nafaqat tarixiy markaz, balki xalqimiz faxri hamdir. "Har bir ko'chasi tarix, har bir g'ishtida o'tmish nafas oladi'- deb yozadi SH.Raxmonov o'z asarida.

Buxoroning ilk davrlardagi tarixi. Arxeologik ma'lumotlarga ko'ra, Buxoro hududida odamlar miloddan avvalgi IV-III ming yillliklarda yashagan. Dastlab bu joylarda dehqonchilik va chorvachilik bilan shug'ullanuvchi qadimiy aholi manzilgohlari bo'lgan. Keyinchalik Buxoro So'g'diyona viloyatining muhim markaziga aylangan.

Shahar "Buyuk Ipak yo'li" ustida joylashgani sababli, u savdo va madaniyat markaziga aylandi. Turli xalqlar bu yerda uchrashib, o'zaro tovar almashgan, hunarmandchilik rivojlangan, Shunindek, bu davrda Buxoroda mustahkam qal'alar va ibodat maskanlari barpo etilgan.

Buxoro shahriga mill.avv VII asrda Alp Er Tug'ruq tomonidan asos solingan. Buxoro bu davrda Turon davlating poytaxti bo'lgan. Buxoro mil.avv VI asrlardan milodiy IV asrlargacha Sug'd davlati tarkibida bo'lib, keyinchalik buxoro uning poytaxti bo'lgan. Bu davrda buxori atrofida qal'alar va qishloqlar markazlari paydo bo'lgan. Shahar madaniyati rivojlanib, Buxoro So'g'diyonaning siyosiy, savdo va diniy markaziga aylangan. Aholisi asosan, zardushtiylik diniga e'tiqod qilgan. Miloddan avvalgi VI-V asrlarda Eron shohlari bo'lgan ahamoniylar Buxoroni bosib olish uchun bir necha marta hujum qilishgan. Aleksandr Makedonskiy qo'shinlari mil.avv 329-327 yillarda Turon sarhadiga kirib, Samarqanddan tashqari Buxoro vohasini ham ishg'ol etadi.

Somoniylar davrida Buxoro. IX asrning o'rtalaridan Xuroson noibi Abu-l-Abbos Tusiy davrida Buxoroni tashqi hujumlardan mudofaa qilish maqsadida 700 gektardan oshiqroq joyni egallagan voha tevaragida bir necha yuz farsaxga cho'zilgan mudofaa devori qurila boshlangan. Devor 782—831 yillar mobaynida qurilgan bo'lib, qurilish ishlariga Buxoro qozisi Sa'd ibn Xalaf al-Buxoriy boshchilik qilgan. Devor «Kampirak» nomi bilan mashhur bo'lgan.

Kampirak devori shaharni tashqi dushmanlardan himoya qilish bilan birga, shubhasiz Qizilqum cho'lining qumli bo'ronlaridan ham himoya qilgan. Amir Ismoil Somoniy hukmronlik yillarida (888-907 yy) dashtliklarga harbiy yurishlar amalga oshirilishi ortidan devorning har yilgi ta'mirlash ishlari to'xtatib qo'yildi. Bu tadbir o'z davri uchun ijobiy natijani bergan bo'lsada, ammo kuchli salbiy oqibati keyinchalik namoyon bo'ldi. Birinchidan, bu tabiat va insonni qamrab olishga, ularning yaxlitligiga qaratilgan davlat siyosatining barbod bo'lganligini ko'rsatdi. Ikkinchidan, voha sug'oriladigan yerlarining yuza qismi cho'l qumlari bilan ifloslanib, unumdor yerlarning tarkibi buzilishida namoyon bo'ldi. Bu esa o'z navbatida, somoniylar hukmronligining oxirida iqtisodiy inqirozni keltirib chiqardi. Mamlakat iqtisodiyoti asosan qishloq xo'jaligiga asoslangan davlat uchun bu katta yo'qotishlarga olib keladi. Uchinchidan, vohaning cho'llashishi kuchaydi. Ma'lumotlarga qaraganda, shu tadbirdan so'ng cho'l vohaning ba'zi bir g'arbiy viloyatlarini yutib yuborgan. Shaharda mo'tadil iqlimni saqlab turish va cho'l ta'siridan himoyalanish barcha davrlarda ham xalqimiz uchun o'ziga yarasha muammo tug'dirgan.

IX asrning ikkinchi yarmidan - X asr oxiriga qadar Buxoro Somoniylar davlatining poytaxti bo'lgan. Shu davrda yashagan Abu Mansur Saolibiyning «Yatimat ud-dahr» tazkirasida «Buxoro Somoniylar hukmronligi davrida shonshuhrat makoni, saltanat ka'basi va zamonasining ilg'or kishilari jamlangan, yer yuzi adiblarining yulduzlari porlagan va o'z davrining fozil kishilari yig'ilgan joy» deb ta'riflangan. Massonning e'tiroficha, bu davr Buxoro shahri uchun yuksalish va gullab-yashnash davri hisoblangan. Shahar ilm-ma'rifat va savdo-sotiq markazi bo'libgina qolmay, turli kasb-hunarlarning ham markazi bo'lgan. Buxoro ta'lim tizimi tarixini o'rgangan A. Jumanazorovga ko'ra, madrasalar qurilishi ham aynan shu davrda ommalashgan.

Shahar islom dini, musulmon axloqi, madaniyati va huquqshunosligining Sharqdagi kuchli markazlaridan biriga aylangan. Shu tufayli IX asr boshlarida «Qubbat ul-islom» —«Islom dinining gumbazi» degan sifatga ega bo'lgan.

Mazkur davrda shaharning tashqi qiyofasi jiddiy o'zgarishlarga uchragan. Poytaxt Buxoroning umumiy maydoni taxminan 33-35 gektar bo'lib, atrofi yetti darvozali devor bilan o'rab olingan. Shaharning ark-qal'asi – Ko'handiz, shahriston qismi – Shahri darun, tashqi qismi esa – Shaxri berun yoki Rabot deb atala boshlangan.

Maydoni taxminan 3,5 – 3,8 gektar bo'lgan ko'handiz atrofi xom g'ishtli devor bilan o'ralib, devorning tevaragi bo'ylab pishgan g'ishtdan o'ziga xos "yopinchiq" qadama kiydirilgan. Ko'handizda hukmdor qarorgohi - saroy, masjid, devon, qabulxona, xazina, zindon, kutubxona, soqchilar turar joyi va turli ustaxonalar joylashgan. Somoniy hukmdorlar davlatni ko‘handiz (dargoh)dan turib idora qilishgan.Somoniy hukmdorlardan Nasr II (914-943) zamonida Registonda hukmdor va uning amaldorlari uchun yangi saroy (devon)lar qurilgan. Natijada go‘zal saroy va uning darvozasiga qaratib qurilgan o‘nta devondan iborat ajoyib bir me’morchilik ansambli tashkil topgan. Saroy atrofida garmselli shamol va jazirama oftobdan saqlash maqsadida so‘lim bog‘lar tashkil qilingan.

Ichki shahar atrofi (rabod)da esa yangi mahallalar, guzarlar, bozorlar, ustaxonalar qad rostlagan. Rabot atrofi kengayib, 849-850 yillarda eski devoridan tashqari yana o‘n bir darvozali yangi devor bilan o‘rab olingan. [1. B. 1310-1311]

Qadim Buxoroda uy-joy va ko‘chalar joylashishida shamolning yo‘nalishi va havoning yaxshi aylanishi hisobga olingan. Vohada shamol asosan shimol va shimoli-sharqdan esganligi sababli, shaharning eski shahar qismidagi ko‘chalar tor, uylar shimoldan janubga tomon qurilgan. Natijada tor ko‘cha shamolni siqib chiqargan, shamolning tez harakatlanishi tufayli havo doimiy, tez-tez almashib turgan va havoning tozaligi, musaffoligini ta’minlagan. Buxoro uy-hovlilarida asosiy hovliga kirish ingichka tirsaksimon yo‘lak – dolondan boshlanadi.

Buxoro xonligi davrida memorchilik. Buxoroda yirik me’morchilik majmua –Labihovuz ansambli bunyod etilgan. Buxoroning eng badavlat kishilaridan biri bo’lgan Nodir devonbegi 1620-yilda bozor maydoni o’rtasida bo’yi 45 metr, 36 mert, chuqurligi 5 mert bo’lgan katta hovuz qurdirib, atrofini shag’al, marmar va toshlar bilan mustahkamlatiradi. Hovuz atrofida Nodir devonbegi madrasasi va xonaqohi, Ko’kaldosh madrasasi, Ernazar elchi madrasasi bunyod etiladi.

1652-yilda Buxoro shahrida Abdulazizxon qurdirgan qo’sh imoratli madrasa mustahkamligi, nafis naqshli koshinlarga boyligi bilan ajralib turadigan, o’z zamonasi me’morchiligining yetuk namunasi hisoblanadi.

Mir Arab madrasasi SHayx Abdulla (Mir Arab) tomonidan 1530-1536- yillarda qurilgan. Uni qurish uchun sarflangan xarajatlarni Buxoro xoni Ubaydullaxon bergan. Madrasa ulkan peshtoqli. Ikki yonida baland gumbazli keng darsxona, masjid va go’rxona. Go’rxonada Ubaydullaxonning sag’anasi va Mir Arab hamda uning qarindoshlarining qabrlari bor. Madrasa bugungi kunda ham islom oliy diniy o’quv muassasasidir.

Buxoroga kelgan Rossiya elchisi Antoniy Jenkinson: “Buxoro juda kata shahar, unda g’ishtlik imoratlar, serhasham binolar ko’p. Hammomlar shunday mohirlik bilan qurilganki, ularning misli dunyoda yo’qdir”, - deb yozdi. [2 -B. 31-34]

Ayniqsa, Abudullaxonning yurt obodonchiligi yo’lidagi sa’yharakatlari tarixchilar tomonidan yuksak baholangan. Uning davrida markaziy hokimiyat kuchayishi tufayli kata qurilish ishlari amalga oshirilgan.

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THE FUNCTIONAL ROLE OF TRANSLATION TECHNOLOGIES AND TOOLS IN MODERN TRANSLATION STUDIES

Ungalova Dilnoza Mirzoxid qizi
Tel. 90 455-93-01
E-mail: *dilnoza.ungalova111@gmail.com*

Annotatsiya. Zamonaviy tarjimashunoslik tarjima texnologiyalarini tarjima amaliyoti va tadqiqotlarining ajralmas qismi sifatida koʻrmoqda. Ushbu maqolada hozirgi tarjima jarayonlari hamda tarjimonlar tayyorlashda kompyuter yordamida tarjima dasturlari, tarjima xotirasi bazalari, terminologiya boshqaruvi tizimlari va mashina tarjimasi kabi vositalarning funksional roli har taraflama tahlil qilinadi. Mazkur texnologiyalar tarjimada samaradorlik, izchillik va sifatni oshirishi, shuningdek, post-tahrirlash kabi yangi kasbiy amaliyotlarni yuzaga keltirishi ta’kidlanadi. Tadqiqot davomida tarjimonlarni tayyorlash jarayoniga texnologik kompetensiyalarni joriy etish zarurati hamda raqamli davrdagi qiyinchiliklar va axloqiy jihatlar muhokama qilinadi.

Kalit soʻzlar: tarjima texnologiyalari; kompyuter yordamida tarjima; mashina tarjimasi; tarjima xotirasi; terminologiya boshqaruvi; tarjimonlar tayyorlash; tarjimashunoslik; post-tahrirlash; tarjima sifati; mahsuldorlik

Аннотация. Современное переводоведение рассматривает переводческие технологии как неотъемлемую часть переводческой практики и научных исследований. В данной статье всесторонне анализируется функциональная роль таких инструментов, как системы автоматизированного перевода (CAT), базы памяти переводов, системы управления терминологией и машинный перевод, в современных переводческих процессах и в подготовке переводчиков. Отмечается, что эти технологии повышают эффективность, согласованность и качество перевода, а также приводят к появлению новых профессиональных практик (например, постредактирования перевода). В рамках исследования обсуждается необходимость внедрения технологических компетенций в процесс обучения переводчиков, а также рассматриваются возникающие в цифровую эпоху проблемы и этические аспекты.

Ключевые слова: переводческие технологии; автоматизированные системы перевода; машинный перевод; память переводов; управление терминологией; подготовка переводчиков; переводоведение; постредактирование; качество перевода; производительность

Abstract. Modern translation studies increasingly views translation technologies as central to practice and research. This article examines the functional roles of translation tools – including computer-assisted translation software, translation memory databases, terminology management systems, and machine translation – in contemporary translation processes and translator education. It highlights how these technologies enhance efficiency, consistency, and quality, while giving rise to new professional practices like post-editing. The study also discusses the integration of technological competencies in translator training programs and addresses emerging challenges and ethical considerations in the digital age.

Keywords: translation technologies; computer-assisted translation; machine translation; translation memory; terminology management; translator training; translation studies; post-editing; translation quality; productivity

Introduction. Technology has become **inextricably linked** with translation in the modern era. From the early 2000s, scholars observed that the rise of digital content (such as software localization) was having a profound impact on translation practices, requiring new technical skills and processes[1]. O'Hagan and Ashworth noted that translating software and other digital media introduced fundamentally new challenges and modes of work for translators, marking the advent of a *"digital turn"* in translation studies[^1]. Over a decade later, Cronin (2013) emphasized that translation technology was no longer an optional accessory but *"an essential tool"* that defines translation activity in many contexts [2, p. 45]. Indeed, by the 2020s, the use of translation technologies has become ubiquitous in both professional practice and academic training. The practice of translation today cannot be separated from technology, and this reality is **reflected in translator training**, where technological tools and platforms are present in virtually every aspect of the curriculum [6, p. 1]. Modern translation studies, therefore, must account for the functional roles these technologies and tools play in shaping translation processes, translator competences, and even theoretical paradigms.

Despite the widespread adoption of translation technologies, a systematic analysis of their functional role in modern translation studies is necessary to understand both their benefits and the challenges they pose. This article aims to fill that need by examining how various translation technologies contribute to translation efficiency, quality, and pedagogy. The investigation is structured according to the IMRAD model. In the sections that follow, we first outline the methodological approach of this study, then present the results in terms of key functional roles identified for translation tools, followed by a discussion of the implications of these findings for translation theory and practice. Finally, we offer conclusions on the indispensable role of technology in contemporary translation studies.

[^1]: Minako O'Hagan & David Ashworth's work in 2002 foreshadowed many of these changes, discussing how the globalization of content and emergence of new translation tools were reshaping translators' work [1, p. 14].

Methodology. This research is based on a qualitative analysis of recent literature and empirical studies concerning translation technology in both professional and educational contexts. A broad range of **Scopus-indexed sources** (including journal articles, conference proceedings, and academic books) was reviewed to ensure comprehensive coverage of the topic. In total, at least fifteen relevant publications from 2002–2024 were analyzed, focusing on works that specifically discuss the integration and impact of technology in translation tasks, translator training, and translation studies research. Key works were selected to represent perspectives from different periods and regions (including literature in English, Russian, and Uzbek) so as to capture a global view of modern trends. The study does not involve primary data collection; instead, it synthesizes findings from previous research and case studies.

In line with the IMRAD structure, the **Results** section below collates the main functional roles and effects of translation technologies as reported in the literature. These roles were identified by extracting recurring themes and findings across the surveyed sources – for example, increased productivity, improved consistency, changes in workflow, and new competency requirements. The **Discussion** section then interprets these findings, examining their significance for translation theory and practice, and noting areas of consensus or debate among researchers. By combining insights from multiple studies, this approach provides a consolidated understanding of how translation tools function within modern translation studies, while also highlighting any gaps or challenges noted in the academic discourse.

Results. Enhanced Efficiency and Quality in Translation Processes. One of the clearest functional roles of translation technology is the **dramatic improvement of efficiency** in translation workflows. Translation tools automate or accelerate many repetitive and labor-intensive tasks that human translators used to perform manually. As a result, translators can handle greater volumes of text in less time without compromising quality. For example, computer-assisted translation (CAT) software with translation memory (TM) capabilities allows translators to reuse previously translated segments, which *"boosts translators' productivity"* by avoiding duplication of effort [5, p. 76]. Integrating machine translation (MT) into CAT tools has also been shown to significantly **increase translation speed**. Empirical studies have found that using MT suggestions alongside translation memory can save time, especially on segments with no high fuzzy matches in the TM, thereby increasing overall throughput for translators [5, p. 82][18†L25-L33]. In an industry case, the combination of MT and TM at a software company led to measurable productivity gains, provided the MT engine was well-trained for the domain[2][3]. These examples align with industry analyses which enumerate the benefits of translation automation: saving time, increasing output, and reducing translators' workload through partial automation of the translation process [11, p. 172-175].

In addition to speed, **consistency and quality assurance** are key areas where technology plays a functional role. Translation memory databases and terminology management systems ensure that the same phrases and terms are translated uniformly across projects. By automatically suggesting previously-approved translations, a TM *"guarantees consistency"* in terminology and style throughout a text [36†L35-L38]. This is particularly valuable for technical documentation and localization projects that demand strict uniformity. Terminology management tools allow the creation of centralized glossaries or termbases, so that translators always use the correct domain-specific terms. The result is a more coherent and high-quality translation product. According to Alimov and Khomidova (2022), recent technological developments in translation have *"raised productivity and quality"* to unprecedented levels, supporting greater accuracy and standardization in translations [4, c. 75-76]. They note that these tools enable translators to meet international communication needs with fewer errors and more consistent terminology. Furthermore, many CAT tools include built-in quality assurance (QA) functions – for instance, automatic checks for numerical discrepancies, missing tags, or inconsistencies – which help catch human errors, thereby **improving the final translation quality**. In sum, the literature strongly indicates that a primary role of translation technologies is to make translation faster and more reliable, enhancing both efficiency and quality in the translation process [4, c. 75-76][11, p. 172-174].

New Workflows and Professional Practices. **Translation technologies have not only improved existing processes but also** transformed the workflow **and nature of translation tasks. A prime example is the emergence of *post-editing* as a widespread professional practice. With the advance of machine translation – especially** neural machine translation (NMT) **since 2016 – the industry increasingly employs human translators to post-edit MT outputs rather than translate from scratch. This shift has effectively introduced a new task into the translator's repertoire: the role of a** post-editor **who corrects and refines machine-generated translations. Studies report that this approach, when MT output is of reasonable quality, can significantly augment productivity, as translators focus their effort on editing instead of raw translation [5, p. 84-85]. Consequently, many modern translators find themselves alternating between conventional translation and post-editing duties, depending on project requirements. Cronin observes that translators are now working *"in tandem"* with MT systems – performing pre-editing and post-editing – rather than being replaced by them, as the human expertise is still crucial for achieving acceptable quality [2, p. 67][8†L262-L270].**
Beyond post-editing, **localization** has become a major domain within translation that heavily relies on specialized tools. Localization involves adapting software UIs, websites, and multimedia content for different languages and locales. This process goes beyond sentence-level translation and includes adjusting formats, handling code or markup, and ensuring cultural appropriateness. Translation Management Systems (TMS) and localization platforms facilitate these complex workflows by organizing translation projects, managing version control, and integrating with content management systems. As O'Hagan and Ashworth (2002) pointed out, the rise of localization fundamentally changed the landscape of translation, giving birth to the concept of the *"translator's workstation"* and necessitating new technical proficiencies [1, p. 28]. Subsequent experts have expanded on this: for instance, Jiménez-Crespo (2013) describes web localization as inherently intertwined with technology, requiring translators to work with content in various file formats and to use localization-specific software [10, p. 45]. Indeed, website localization projects often involve translating text within HTML/XML, using localization kits, and performing functional testing – all of which are enabled by appropriate tools[4].
The integration of these technologies has *broadened the scope* of what is considered translation work. Modern translators may perform tasks such as **bilingual file engineering**, **quality evaluation of MT**, or even contribute to building MT systems

(for example, by curating training data or writing rules for controlled language). Pym and Torres-Simón (2021) note that as automation becomes widely accepted in the field, the set of tasks grouped under "translation" has expanded considerably, sometimes to the point that traditional labels evolve or disappear [3, p. 50]. They observed that translators are taking on more **multifaceted roles** – including project management, consulting on language technology, and client education – which reflects how deeply technology is embedded in the profession [3, p. 50]. In practice, this means the translator's role is shifting from just a linguistic craftsman to a *"language solutions provider"* comfortable with various tools and platforms. The advent of titles like "localization specialist" or "translation project manager" and even "MT post-editor" underscores the diversification of professional pathways in the translation industry, driven largely by technological innovation. Overall, translation tools have introduced more **collaborative and interactive workflows**, where humans and machines each contribute: the machine offers a draft or suggestions, and the human translator refines and finalizes the output. This synergy is central to many contemporary translation projects.

Impact on Translator Training and Competence Development. In response to these shifts, translator education has undergone significant changes, integrating technology training as a core component of curricula. Modern translation studies programs recognize that graduates must be proficient in using a range of translation tools to be **market-ready**. As a result, courses on CAT tools, terminology management, and translation project management are now standard in many Master's programs worldwide. The European Master's in Translation (EMT) competence framework (2017) explicitly includes **technological competence** as one of the five key competence areas for professional translators [12, p. 3]. This means that alongside linguistic and cultural skills, trainees are expected to acquire the ability to effectively use translation software, adapt to new tools, and manage digital resources. Technological competence is defined as the ability to *"use software tools for translation assistance and research efficiently"* – encompassing skills from basic word processing and OCR, to advanced TM alignment and QA tool usage [15†L1-L4]. The inclusion of such requirements in international standards and frameworks highlights the functional importance of technology: it is considered just as fundamental as bilingual proficiency or domain knowledge for a translator's success.

Empirical research confirms that integrating technology in translator training has tangible benefits. For example, an educational study by Zaghlool and Khasawneh (2024) found that aligning translation curricula with modern AI-based translation tools significantly improved students' preparedness for industry demands [8, p. 63-

64][21†L81-L88]. They identified pedagogical strategies (like task-based learning and collaborative projects) that effectively incorporate AI translation tools into the classroom, resulting in students gaining confidence and competence in using those tools. Personalized training with real-world translation software has been shown to increase students' awareness of workflow challenges and improve their problem-solving skills in translation tasks[5]. Moreover, survey-based research indicates that new translators who receive formal training in CAT tools and MT post-editing report feeling more competitive and adaptable in the job market[6][7]. In Uzbekistan, too, scholars are acknowledging the importance of technology in translator preparation. Abdullayev (2024), for instance, analyzes the role of computer translation programs in developing the professional competence of trainee translators, concluding that familiarity with such tools is essential for the next generation of translators [7, b. 24-25]. Thus, from Europe to Central Asia, there is a clear trend toward **embedding technology into translator education**.

Another aspect of competence development is the focus on **ethical and professional issues** related to technology use, which is increasingly being addressed in training. Given that students will face scenarios involving machine translation, crowdsourced translation platforms, or client-specific tools, many programs now discuss topics such as confidentiality (when using online MT), copyright of TMs, and the limits of automation. The literature suggests a growing consensus that translator training must produce professionals who are not only skilled users of technology but also critical thinkers about its appropriate application [6, p. 2][41†L38-L46]. In sum, the functional role of translation tools in translator training is twofold: they serve as *didactic tools* to simulate professional practice, and they constitute a body of knowledge/skills that translators must master. Modern translation studies as an academic field thus treats technological literacy as a key learning outcome, reflecting the reality that translation technologies are integral to contemporary translation work.

Tools for Research and New Insights in Translation Studies. Finally, it is important to note that translation technologies also play a functional role in translation studies *research* itself. They enable new research methodologies and avenues of inquiry that were previously impractical. For example, the availability of large digital corpora and parallel text databases, along with software for corpus analysis and alignment, has given rise to **corpus-based translation studies**. Researchers can now use concordancers and alignment tools to automatically compare source texts and their translations across thousands of sentences, revealing patterns of translation shifts, frequency of particular solutions, or the influence of genre and register. This data-driven approach has yielded insights into translation universals and stylistic tendencies that would have been difficult to glean from manual analysis of texts. Likewise, advanced statistical tools and programming (e.g. using Python or R for text analysis) have become part of the translation scholar's toolkit for investigating large-scale translation phenomena.

Moreover, specialized technology is used to study the *cognitive process* of translation. Key **process research** tools include **keylogging software** (such as Translog or Inputlog) and **eye-tracking devices**. Keylogging programs record every keystroke and pause a translator makes during a translation task, while eye-trackers monitor where and for how long the translator's gaze focuses on the source or target text. By analyzing this data, researchers can infer the translator's decision-making process, cognitive load, and problem-solving strategies. The combination of keylogging and eye-tracking has provided *"useful evidence on aspects such as translation skills, experience, and cognitive effort"* in translation tasks [55, L7-L13]. For instance, these tools have helped distinguish how novice and expert translators allocate their attention, or how difficult text segments correlate with longer pauses (indicating higher cognitive effort). Such findings enrich our theoretical understanding of translation as a cognitive activity and inform translator training (e.g. highlighting which skills need improvement). Additionally, new tools like **QA analytics** and **revision support software** allow researchers to examine how translations are improved through editing, giving insight into quality assurance processes and common error patterns (as studied by Mossop and others). In short, translation technologies not only affect practice and training, but also function as *research instruments* that open up new frontiers in translation studies. They allow scholars to investigate translation from empirical and interdisciplinary angles – integrating insights from linguistics, computer science, and cognitive science – thereby expanding the scope and depth of the field.

Discussion. The findings above illustrate that translation technologies have a multifaceted functional role in modern translation studies, fundamentally reshaping how translations are produced, evaluated, taught, and researched. **First**, the benefits to efficiency and consistency underscore that technology has become indispensable for handling the volume and speed required in today's globalized content environment. Professional translators equipped with CAT tools can produce more work in less time while maintaining uniform quality standards – a clear competitive advantage in the language services market. This has led some scholars to argue that we have entered a *"technological turn"* in translation (similar to earlier cultural or social turns), where technological proficiency is as important as linguistic talent for a translator's identity [9, p. 177][56†L162-L170]. Indeed, technology has altered the economics of translation: repetitive technical documents that once might have taken weeks to translate can now be done in days with the help of TMs and MT, albeit with a shift in the nature of the translator’s task (toward editing).

Second, the transformation of workflows and emergence of new roles raise important implications for the profession. As automation takes over the most repetitive tasks, human translators are moving towards roles that emphasize creativity, critical thinking, and quality control. Pym and Torres-Simón (2021) describe a scenario in which translators’ *interactive skills* – such as negotiating project requirements, customizing MT engines, or explaining machine output to clients – become increasingly valued [3, p. 50]. They observe that rather than being displaced, translators are *“reshaping their profession”* to coexist with automation, ensuring that human expertise guides and corrects machine output [3, p. 50-51]. This optimistic view aligns with the **“augmentation”** paradigm: technology augments human capabilities instead of replacing them. In practice, many translators have adopted a symbiotic approach, using tools to handle routine content so they can focus on segments that require human nuance, thereby making their work more interesting and leveraging their unique strengths (cultural knowledge, contextual reasoning, etc.). Nonetheless, there is also a **pessimistic perspective** among some practitioners – a fear that increasing reliance on MT and automation could devalue the human translator’s role and lead to a *“dehumanization”* of the profession [11, p. 167-169]. This divide between optimists and pessimists in the field highlights a critical discussion in translation studies: how far can technology go, and what is the evolving role of the human translator? So far, evidence suggests that while routine tasks are highly automatable, the nuanced decision-making and creative adaptation done by skilled translators remain in demand, especially for texts where **accuracy and cultural sensitivity** are paramount (e.g. literary translation, marketing transcreation, diplomatic interpreting).

Third, in the realm of translator education, the integration of technology is largely seen as a positive and necessary evolution, but it is not without challenges. Training programs must constantly update their curricula to keep pace with rapidly evolving tools – what is state-of-the-art today (say, neural MT or cloud-based TMS) might become outdated within a few years. This creates pressure on educators and students alike to engage in **continuous learning and adaptation**. A survey by Fulford and Granell (2020) found that nearly half of translators felt challenged by the need to keep up with new tools, emphasizing ongoing professional development as crucial for career longevity[8]. In response, some institutions have started offering specialized courses or certificates in translation technology and project management, sometimes in collaboration with industry partners to give students hands-on experience with real-world platforms. The **collaborative learning** approach – using simulation projects or cloud platforms in class – helps students not only learn tools but also the soft skills of teamwork and client communication in a tech-mediated environment. However, one challenge in training is ensuring that students also learn the underlying principles (e.g. how MT works, its strengths and weaknesses) and not just button-pressing sequences. Developing **technological competence** means understanding when and how to use each tool appropriately, and when not to rely on them. This critical perspective is important to avoid over-reliance on technology and to maintain high professional standards.

Fourth, the integration of technology has opened up *ethical questions* that modern translation studies is actively exploring. For instance, issues of **confidentiality** arise when translators use online MT engines for sensitive texts – is the data secure, and who owns the translated content? Ethical guidelines are being discussed to address such questions (Drugan & Cadwell, 2018). Similarly, **quality and accountability** become complex when a translation is the joint product of a human and a machine – if an error occurs, where does responsibility lie? Scholars like Bowker (2020) argue for an expanded view of translator ethics that includes decisions about using or not using technology in a given situation [13, p. 270]. The consensus is that translators must exercise professional judgment about technology use, and possibly even educate clients about its appropriate use (for example, warning when raw MT is unsuitable for publication). Another ethical dimension is the potential **impact on translator livelihoods**: while technology can make translators more productive, it has also led to market expectations of lower per-word rates and tighter deadlines, sometimes putting financial strain on practitioners. Gouadec (2007) and others pointed out that the translation industry must be careful to ensure that efficiency gains benefit both clients and translators, and not undermine the viability of professional translation [9, p. 112]. These socio-economic considerations are now part of the academic discourse, reflecting translation studies' growing engagement with real-world implications of technology.

Finally, the role of technology in translation studies research has methodological implications. The use of digital tools and quantitative methods has enriched the field's analytical power, but it also challenges researchers to acquire interdisciplinary skills (such as programming or statistics). As translation studies embraces more empirical approaches with the help of technology, scholars must balance quantitative data with qualitative insight – ensuring that humanistic perspectives on meaning and context are not lost in a sea of numbers. Researchers like Kenny (2017) have discussed the *"human issues in translation technology"*, emphasizing that while tools can provide data, the interpretation of that data requires a human-centric understanding of translation phenomena [15, p. 316]. In essence, technology in research is a means to an end: it yields new evidence which must then be contextualized within theories of language, culture, and communication. The **interdisciplinary collaboration** between translation scholars, computer scientists, and cognitive psychologists is likely to grow, further blurring the lines between fields – a development that can be very fruitful, as long as translation studies maintains its focus on the central object of study: the translated text and the translator.

In summary, the discussion highlights that translation technologies serve as enablers of efficiency and consistency, drivers of new professional practices, essential components of translator education, and tools for advancing research. At the same time, they introduce complexities regarding professional roles, ethical norms, and research methodologies. Modern translation studies thus finds itself at an **intersection of the humanities and technology**, requiring translators and researchers alike to be adept in both domains. The functional integration of translation tools has undeniably propelled the field forward, but it also calls for a reflective approach to ensure that technology remains a *servant* to the translational act, not its master.

Conclusion. Translation technologies and tools have assumed a central, functional role in all facets of modern translation studies. The evidence from various sources demonstrates that these technologies are not merely aids to translation but have become **integral to the translation process**, significantly enhancing productivity, consistency, and quality [4, c. 75-76][11, p. 172]. Tools such as CAT software, translation memories, and terminology databases allow translators to work faster and with greater uniformity, while machine translation (when combined with human post-editing) offers a viable solution for large-scale and rapid translation needs. In the academic and training context, translation tools have reshaped curricula and competency frameworks, ensuring that new translators enter the profession with the necessary digital skills [12, p. 3]. Moreover, the incorporation of technology into research has expanded the horizons of translation studies, enabling data-driven insights into translation phenomena that complement traditional theoretical approaches [55, L7-L13].

Crucially, this study finds that the **functional role** of translation technology is dynamic – it continues to evolve as new innovations (such as AI-driven translation, speech translation, and collaborative cloud platforms) emerge. The relationship between human translators and technology is characterized by synergy: when used judiciously, technology amplifies the strengths of human translators, automating routine tasks and freeing professionals to focus on creative, high-level decision-making. However, this relationship also requires ongoing adaptation. Translators must engage in lifelong learning to keep up with technological changes, and educators as well as industry stakeholders must collaborate to establish best practices and ethical standards for technology use in translation.

In conclusion, translation technologies and tools function as **both catalyst and companion** in modern translation studies. They catalyze new ways of translating and new areas of inquiry, pushing the field into interdisciplinary terrains. At the same time, they serve as constant companions in the daily work of translators and researchers, embedded in workflows and experiments alike. Far from rendering human translators obsolete, the advancement of translation technology has highlighted the enduring value of human expertise – whether in refining machine outputs, managing complex projects, or making nuanced interpretative choices that machines cannot. The trajectory of modern translation studies suggests a future where human translators and machines work hand-in-hand, each complementing the other. Embracing this reality, while critically engaging with its challenges, will be key to the continued growth and relevance of translation studies as a discipline in the 21st century.

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Buyrak Gistalogiyasi. Buyrakda Reabsorbsiya va Filtratsiya jarayonlarining to'g'ri borishi.

Qudratova Ruxshona Shavkat qizi – 2-bosqich talabasi
Jo'rayeva Samiya Hasanovna - Ilmiy rahbar, Assistent
Toshkent Davlat Tibbiyot Unversiteti Termiz Filiali

Annotatsiya: Ushbu tadqiqot buyrakning asosiy funksional birligi bo'lgan nefronning nozik gistologik tuzilishi va uning organizmdagi gomeostazni saqlashdagi rolini yoritadi. Maqolada buyrak koptokchasida (glomerula) kechadigan qonni ultra-toza suzish (filtratsiya) jarayonining mexanizmlari, shuningdek, nefron kanalchalarida (proksimal, Genle halqasi, distal) sodir bo'ladigan suv, elektrolitlar va kerakli moddalarni qayta so'rilish (reabsorbsiya) jarayonlarining to'g'ri borishi tahlil qilinadi. Filtratsiya va reabsorbsiya jarayonlarining to'g'ri va samarali kechishini ta'minlovchi gistologik tuzilmalarning, xususan, glomerulyar membrana, podotsitlar va kanalcha hujayralaridagi maxsus transport oqsillarining ahamiyati muhokama qilinadi. Tadqiqot, buyrakning normal fiziologiyasini tushunish va turli nefropatiyalarda (buyrak kasalliklarida) funksional buzilishlarning sabablarini aniqlash uchun asos yaratadi.
Kalit so'zlar: Buyrak, Nefron, Gistologiya, Filtratsiya, Reabsorbsiya, Glomerula, Proksimal kanalcha, Podotsitlar, Katta filtr, Gomeostaz, Genle halqasi, Nefronning distal bo'limi, Yig'uv naylari, Glomerulyar membrana, Nefropatiyalar, Renin, Eritropoetin, Glomerulyar shikastlanish, Surunkali buyrak kasalliklari, Diabetik nefropatiya, Gipertenziv nefroskleroz.

Kirish: Buyraklar — organizmning hayotiy ahamiyatga ega filtratsiya tizimi bo'lib, ular faqatgina siydik hosil qilish bilan cheklanmaydi. Ular qon tarkibini doimiy nazorat qiluvchi, kislota-ishqor balansini saqlovchi va gomeostazni ta'minlovchi murakkab fabrikadir. Ushbu jarayonlarning to'g'ri borishi buyrakning ajoyib gistologik tuzilishiga bevosita bog'liq bo'lib, uning asosi bo'lgan nefronlarda filtratsiya va reabsorbsiya jarayonlari mukammal muvofiqlikda amalga oshadi.

Buyraklar umurtqali hayvonlar organizmining hayotiy muhim a'zosi bo'lib, ular qonni tozalash, organizmning suyuqlik va elektrolitlar muvozanatini (gomeostaz) saqlash, qon bosimini tartibga solish hamda ba'zi gormonlar (masalan, renin, eritropoetin) sintezida markaziy rol o'ynaydi. Ushbu murakkab vazifalarning asosiy qismi buyrakning funksional birligi bo'lgan nefronda amalga oshiriladi. Nefronning tuzilishi

— buyrak koptokchasi (glomerula) va naychalar (kanalchalar) tizimi — ushbu jarayonlarning samarali va selektiv (tanlab) kechishini ta'minlovchi o'ziga xos gistologik tuzilishga ega.

Buyrakdagi asosiy vazifalar ikki muhim bosqichda sodir bo'ladi:
Filtratsiya (Suzish): Glomerulada qon bosimi ta'sirida qonning suyuq qismi kichik molekulalar bilan birga Nefronning Shumlyanskiy-Boumen kapsulasiga o'tadi va birlamchi siydik hosil bo'ladi.
Reabsorbsiya (Qayta so'rilish): Birlamchi siydik kanalchalar orqali o'tayotganda organizm uchun zarur bo'lgan suv, tuzlar, glyukoza va aminokislotalarning 99% dan ortig'i qon tomirlariga qayta so'riladi.
Ushbu maqola aynan shu gistologik tuzilmalar (glomerulyar membrana, podotsitlar, kanalcha epiteliyasi) va ular ta'minlaydigan filtratsiya va reabsorbsiya mexanizmlari o'rtasidagi uzviy bog'liqlikni chuqur tahlil qilishga bag'ishlangan. Buyrakning normal ishlashi ushbu nozik muvozanatga bog'liq bo'lib, uning buzilishi (masalan, glomerulyar shikastlanish) buyrak yetishmovchiligi kabi jiddiy patologiyalarga olib keladi. Tadqiqot buyrak fiziologiyasi va nefropatologiyani yanada tushunish uchun asosiy bilim berishni maqsad qilgan.
Dolzarbligi: Buyrak gistologiyasi va uning funktsional jarayonlari, ya'ni filtratsiya va reabsorbsiyaning mexanizmlarini chuqur o'rganish quyidagi sabablarga ko'ra tibbiyot va biologiya sohasida yuqori dolzarblik kasb etadi:
Surunkali Buyrak Kasalliklarining Global Yoki: Jahon sog‘liqni saqlash tashkiloti (JSST) ma’lumotlariga ko‘ra, surunkali buyrak kasalliklari (SBK) dunyo bo‘yicha tarqalishi ortib borayotgan asosiy nogironlik va o‘lim sabablaridan biridir. SBK ko‘pincha buyrakdagi gistologik tuzilmalar – glomerula (filtratsiya joyi) va kanalchalar (reabsorbsiya joyi) shikastlanishi natijasida kelib chiqadi. Ushbu kasalliklarning rivojlanish mexanizmini tushunish erta tashxis va samarali davolash usullarini ishlab chiqish uchun hal qiluvchi ahamiyatga ega.
Gipertoniya (Yuqori Qon Bosimi) va Diabetning Oqibatlari: Buyrakning filtratsiya va reabsorbsiya faoliyati gipertoniya va qandli diabet kabi keng tarqalgan kasalliklardan juda tez zararlanadi (diabetik nefropatiya, gipertenziv nefroskleroz). Ushbu jarayonlarning buzilishi organizmda toksik moddalar to'planishi, suyuqlik muvozanatining buzilishi va natijada buyrak yetishmovchiligiga olib keladi.
Dori Vositalari ta'sirini o'rganish: Ko'plab dori-darmonlar buyrak naychalarida reabsorbsiya va sekretsiya (ajratish) jarayonlariga ta'sir qiladi, ba'zan esa nefrotoksiklikka (buyrakni zaharlashga) olib keladi. Nefron gistologiyasini batafsil

bilish farmakologik tadqiqotlarda dori vositalarining buyrakka ta'sirini baholash va toksikligini kamaytirish uchun zarurdir.

Buyrak Transplantatsiyasi va Regenerativ Tibbiyot: Buyrak transplantatsiyasi muvaffaqiyatini oshirish hamda kelajakda shikastlangan buyrak hujayralarini qayta tiklash (regenerativ tibbiyot) boʻyicha saʼy-harakatlar ham nefronning normal hujayra tuzilishi va funktsional birliklari (podotsitlar, kanalcha hujayralari) haqidagi chuqur bilimlarga asoslanadi.

Shuning uchun, buyrak gistologiyasini, ayniqsa filtratsiya va reabsorbsiyani ta'minlovchi nozik mexanizmlarni oʻrganish, nafaqat fundamental ilm-fan, balki klinik nefrologiya va global sogʻliqni saqlash nuqtai nazaridan ham oʻta dolzarbdir.

Tadqiqot materiali: Ushbu tadqiqot materiallari buyrakning normal va patologik sharoitlardagi gistologik tuzilishi hamda uning funksional jarayonlarini oʻrganish uchun xizmat qiladi:

Gistologik namunalar: Buyrakning filtratsiya va reabsorbsiya zonalarini (glomerula, proksimal va distal kanalchalar) nur va elektron mikroskoplar yordamida tahlil qilish uchun olingan inson buyrak biopsiyalari va tajriba hayvonlarining (kalamush, sichqon) toʻqima kesmalari.

Klinik-funksional ma'lumotlar: Bemorlarning glomerulyar filtratsiya tezligi (GFR), kreatinin klirensi va siydik tahlili natijalari kabi buyrak funktsiyasi ko'rsatkichlari.

Biokimyoviy va Molekulyar materiallar: Reabsorbsiya uchun mas'ul bo'lgan transport oqsillarining (masalan, akvaporinlar, natriy nasoslari) buyrak to'qimasidagi faolligi va miqdorini aniqlash uchun ishlatiladigan immunogistokimyoviy va molekulyar biologik reagentlar.

Bu materiallar to'plami buyrakning nozik tuzilishi va uning asosiy funksiyalari o'rtasidagi uzviy bog'liqlikni tizimli o'rganishga asos bo'ladi.

Tadqiqot maqsadi: Ushbu tadqiqotning asosiy maqsadi buyrakning funksional tuzilishi (gistologiyasi) va uning eng muhim jarayonlari – filtratsiya hamda reabsorbsiya mexanizmlari oʻrtasidagi oʻzaro bogʻliqlikni chuqur oʻrganish va tahlil qilishdan iborat.

Bu asosiy maqsadga erishish uchun quyidagi vazifalar qoʻyiladi:

Nefronning gistologik tuzilishini aniqlash: Glomerulyar membrananing (filtratsiya toʻsigʻi) va buyrak kanalchalari epiteliy hujayralarining (reabsorbsiya yuzasi) ultra-nozik tuzilishini (elektron mikroskopiya darajasida) batafsil oʻrganish.

Filtratsiya samaradorligini baholash: Glomerulyar filtratsiya tezligi (GFR) koʻrsatkichlari bilan glomerula gistologik holati oʻrtasidagi bogʻliqlikni aniqlash.

Reabsorbsiya mexanizmlarini tahlil qilish: Turli nefron qismlarida (proksimal, distal kanalchalar, Genle halqasi) suv, natriy, glyukoza va boshqa elektrolitlarni qayta so‘rilishini ta’minlovchi maxsus transport oqsillarining (masalan, nasoslar, kanallar) joylashuvi va faolligini aniqlash.

Patologik o‘zgarishlarning ta'sirini o‘rganish: Turli xil nefropatiyalarda (masalan, gipertoniya yoki diabet ta'sirida) gistologik shikastlanishlarning filtratsiya va reabsorbsiya jarayonlarining buzilishiga qanday olib kelishini ko‘rsatib berish.

Ushbu tadqiqot natijalari buyrakning normal ishlash qonuniyatlarini yaxshiroq tushunish, shuningdek, buyrak kasalliklarining oldini olish va davolash uchun yangi samarali strategiyalarni ishlab chiqishga xizmat qiladi.

Xulosa: Tadqiqot davomida quyidagi asosiy xulosalar olinadi:

Gistologiya va Filtratsiya O'rtasidagi Uzviy Bog'liqlik: Buyrak koptokchasidagi (glomerula) uch qavatli filtratsiya to‘sig‘i (fenestratsiyalangan endoteliy, bazal membrana va podotsitlarning oyoqchalaridan tashkil topgan) yuqori samarali va selektiv filtratsiyani ta’minlaydi. Har qanday gistologik shikastlanish (masalan, podotsitopatiya) darhol proteinuriyaga (siydikda oqsil paydo bo'lishiga) va filtratsiya buzilishiga olib keladi.

Kanalcha Epiteliyasining Reabsorbsiyadagi Muhimligi: Proksimal kanalcha epiteliyasi hujayralarining gistologik tuzilmasi (masalan, ularning ko‘p miqdordagi mikrovorsinkalari va mitoxondriyalari) faol reabsorbsiya uchun optimal sharoit yaratadi, natijada glyukoza va aminokislotalarning 100% gacha qayta so‘rilishini ta’minlaydi. Reabsorbsiya jarayonlarining to'g'ri kechishi maxsus transport oqsillari (nasoslar va kanallar) mavjudligiga bog'liq.

Gomeostazning Muvozanati: Filtratsiya va reabsorbsiya jarayonlarining aniq muvozanati organizmning suv-elektrolit muvozanatini (gomeostaz) ta'minlashda asosiy omil hisoblanadi. Buyrak kanalchalarida suvning qayta so‘rilishi (antidiuretik gormon nazorati ostida) organizm suyuqligining hajmini va qon bosimini tartibga solishda muhimdir.

Klinik-Patologik Xulosa: Gipertoniya va qandli diabet kabi keng tarqalgan kasalliklar natijasida yuzaga keladigan gistologik o‘zgarishlar (masalan, glomeruloskleroz yoki kanalcha atrofiyasi) filtratsiya va reabsorbsiya funktsiyalarining buzilishiga olib keladi, bu esa surunkali buyrak yetishmovchiligining rivojlanishi uchun asosiy mexanizm hisoblanadi.

Xulosa qilib aytganda, buyrakning normal ishlashi va gomeostazni saqlashi nefronning nozik gistologik tuzilishi va unda kechuvchi murakkab filtratsiya hamda reabsorbsiya jarayonlarining aniq muvofiqligiga bevosita bog'liqdir.

Foydalanilgan adabiyotlar (Vankuver uslubida**):**

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