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ANALYZING THE IMPACT OF PRE-IPO FINANCIAL HEALTH ON POST-LISTING CAPITAL STRUCTURE ADJUSTMENTS

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Abstract

This study investigates how pre-Initial Public Offering (IPO) financial health conditions post-listing dynamic capital structure adjustments among newly public corporations in emerging and transition capital markets. Integrating trade-off theory, pecking order dynamics, and debt overhang hypotheses, the paper evaluates the structural mechanisms through which pre-quotation solvency, operating cash flow generation, and distress risk dictate the speed and direction of post-issue leverage adjustments. The analysis demonstrates that pre-listing financial health creates a profound bifurcation in post-IPO financing behavior: financially distressed or highly levered issuers utilize equity proceeds primarily as a defensive de-leveraging mechanism to alleviate debt overhang and credit constraints, whereas financially robust issuers exploit public listing status to lower their borrowing costs, re-lever their balance sheets, and optimize tax-shield benefits. The paper models dynamic partial adjustment speeds toward target leverage ratios and analyzes how the allocation of primary capital proceeds between debt retirement and capital expenditure shapes long-term operational resilience. The findings provide concrete implications for securities regulators, underwriters, and corporate executives seeking to balance capital market access with sustainable corporate leverage.

Keywords

Initial Public Offering (IPO), capital structure, financial health, target leverage, speed of adjustment, debt overhang, trade-off theory, pecking order theory, transition economies.

INTRODUCTION

The transition from a privately held or state-dominated corporate form to a publicly traded corporation via an Initial Public Offering (IPO) represents a transformative recapitalization event that permanently reshapes an enterprise's financial architecture. By accessing public equity markets, firms alter the composition of their capital structure, replacing illiquid, concentrated private financing and short-term bank borrowings with permanent risk equity. While traditional corporate finance literature frequently models the primary offering as an expansionary vehicle designed to fund positive net present value growth opportunities, the empirical reality of emerging and transition markets demonstrates that public flotations frequently serve as balance sheet restructuring mechanisms. The degree to which an issuer adjusts its capital structure following quotation is intimately bound to the financial health, debt capacity, and operating stability established prior to entering the market.

Pre-IPO financial health—manifested through operating profitability, liquid asset reserves, interest coverage, and baseline solvency—exerts a persistent conditioning effect on post-listing financial policies. In nascent capital markets characterized by credit market frictions, elevated macroeconomic volatility, and institutional voids, newly listed firms face distinct costs when adjusting their capital structures toward an optimal leverage target. Issuers that enter the market burdened by legacy liabilities and fragile cash flow profiles encounter vastly different post-listing financing constraints than financially sound counterparts possessing unencumbered asset bases. Understanding how pre-issue financial vulnerabilities dictate the speed, trajectory, and

composition of post-IPO capital structure adjustments is vital for unraveling the long-term solvency and survivability of newly listed entities in developing equity ecosystems.

The theoretical foundation governing post-IPO capital structure adjustments lies at the intersection of trade-off theory, pecking order dynamics, and the debt overhang hypothesis. Under dynamic trade-off theory, corporations balance the tax-shield advantages of debt against the expected costs of financial distress and agency frictions, actively adjusting toward an optimal, value-maximizing target leverage ratio. Conversely, pecking order theory, rooted in asymmetric information, posits that firms prioritize internal cash flows over external financing, issuing debt before equity to minimize adverse selection costs. Within the context of an IPO, the sudden infusion of primary equity disrupts historical financing hierarchies, compelling management to re-evaluate target leverage in light of diminished asymmetric information and newly acquired public market certification.

For corporations characterized by poor pre-IPO financial health and excessive debt burdens, the public equity offering functions primarily as an emergency deleveraging instrument designed to mitigate debt overhang. As conceptualized by S. Myers, severe debt overhang disincentivizes equity-financed investment because the marginal economic returns accrue disproportionately to senior debt holders rather than shareholders. Issuers entering the public market under financial distress systematically deploy primary equity proceeds to pay down short-term, high-cost commercial bank loans. For these distressed entities, the post-IPO capital structure adjustment is predominantly defensive and contractionary, aimed at restoring creditworthiness and escaping punitive debt covenants rather than expanding the productive asset base.

Conversely, firms that enter the public equity market from a position of robust pre-IPO financial health display fundamentally different capital structure dynamics. Possessing strong operating cash flows, low default probabilities, and solid balance

sheet liquidity, these issuers do not face immediate solvency pressures. Instead, they exploit the public listing to establish a transparent market-based valuation currency and enhance their borrowing capacity. Following the initial dilution of debt ratios caused by the equity infusion, financially resilient firms frequently undertake a rapid re-leveraging process, issuing long-term corporate bonds or negotiating syndicated bank credit on terms far more favorable than those available to private companies, thereby optimizing their corporate tax shields.

The speed of adjustment (SOA) toward target leverage serves as a key empirical metric for evaluating post-listing capital structure behavior. In dynamic partial adjustment models, the speed at which a newly listed enterprise closes the gap between its observed and target leverage is governed by adjustment costs relative to the costs of operating off-target. Pre-IPO financial health directly influences these transaction costs. Financially robust issuers face minimal external financing frictions and can dynamically adjust their leverage ratios through seasoned equity offerings, commercial paper, or bond issuances with negligible market resistance. In contrast, firms with weak pre-IPO balance sheets face asymmetric adjustment frictions; while they can passively deleverage using primary proceeds, their ability to re-access debt or equity markets to rebalance their capital structure post-IPO is severely constrained by lingering distress premia.

Empirical operationalization of pre-IPO financial health requires a multidimensional vector of accounting and solvency indicators. Robust econometric specifications rely on composite credit-risk scores—such as Altman's emerging market Z-score—alongside trailing ratios of pre-tax return on assets, operating cash flow coverage, debt-to-equity, and the proportion of tangible collateral assets. Firms situated in the lower quartiles of pre-IPO solvency exhibit a high propensity for structural earnings management prior to listing, which obscures underlying balance sheet

fragilities. Once exposed to mandatory post-listing disclosure requirements and independent quarterly reporting, the artificial bolster fades, triggering sharp revisions in leverage targets as credit-rating agencies and institutional creditors re-evaluate default probabilities.

In transition economies, such as those across Central Asia and Eastern Europe, these capital structure adjustment dynamics are further complicated by legacy state ownership and institutional transitions. Many enterprises entering the public market via Share Issue Privatizations (SIPs) inherit distorted capital structures dominated by subsidized state-bank credit, sovereign-guaranteed liabilities, and operational inefficiencies. For these former state-owned enterprises, pre-IPO financial health is often an artifact of administrative resource allocation rather than commercial viability. Following public quotation, the cessation of implicit state loan guarantees forces these enterprises to adjust their debt profiles toward market-disciplined realities, frequently compelling rapid balance sheet restructuring to accommodate the withdrawal of bureaucratic financial backstops.

The post-IPO allocation of primary issue proceeds provides direct empirical verification of the link between pre-issue health and capital structure adjustments. Corporate prospectuses routinely delineate the intended use of proceeds between growth capital expenditure (CapEx), research and development, and working capital or liability reduction. Empirical observations indicate that firms with impaired pre-IPO financial health allocate a disproportionate share of realized primary proceeds—often exceeding sixty to seventy percent—toward liability retirement and bank debt settlement. This structural re-channeling of funds insulates the firm from immediate default but curtails post-listing capital expenditure, explaining the long-run operational stagnation frequently observed among financially stressed IPO cohorts.

From a methodological standpoint, modeling post-listing capital structure adjustments necessitates econometric techniques capable of handling fractional, bounded dependent variables and dynamic endogeneity. Utilizing dynamic panel estimators—specifically two-step system Generalized Method of Moments (system GMM)—allows researchers to model target leverage while explicitly controlling for the unobserved time-invariant firm heterogeneity, the persistence of capital structure choices, and the endogenous relationship between pre-IPO operating profitability and public listing timing. Controlling for industry-median leverage shocks and macroeconomic credit cycles ensures that the estimated impact of pre-listing financial health reflects structural microeconomic behavior rather than broad monetary fluctuations.

CONCLUSION

This study demonstrates that pre-IPO financial health is a primary structural determinant of post-listing capital structure trajectories in emerging and transition equity markets. Rather than functioning uniformly as an expansionary financing milestone, the IPO acts as an institutional filter that separates issuers into distinct post-listing adjustment regimes. Financially vulnerable firms are compelled to pursue defensive, de-leveraging strategies to mitigate severe debt overhang and survive the loss of private credit relationships, sacrificing post-listing growth capital to restore basic solvency. In contrast, financially sound issuers exploit the informational transparency and certification of public quotation to lower external debt costs, optimize tax shields, and dynamically re-lever their balance sheets to support long-term investment.

To foster financial stability and improve capital allocation efficiency, market regulators and securities authorities in developing economies must modernize pre-listing disclosure and monitoring frameworks. Regulatory listing rules should mandate rigorous, multi-year stress testing of debt sustainability and the transparent disclosure of

debt maturity structures within IPO prospectuses. Furthermore, divesting state authorities and underwriting syndicates should establish verifiable tracking mechanisms for the post-listing utilization of proceeds, preventing corporate insiders from masking structural insolvency through opportunistic equity issuance. Implementing these supervisory safeguards ensures that public equity markets channel capital toward genuine productive modernization rather than the temporary socialization of unviable corporate debt burdens.

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ANALYSIS OF EXPERIMENTAL TEST RESULTS BASED ON THE CRITERIA, INDICATORS, AND LEVELS FOR ASSESSING GENERAL CULTURAL COMPETENCE

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Abstract

This article discusses general cultural competence—encompassing an individual's ability to understand and respect cultural values, engage in cultural dialogue, participate actively in social interactions, and structure their professional and personal development based on cultural criteria. It also presents conclusions regarding the determination of the effectiveness of a pedagogical system designed to develop general cultural competence in future educators, the assessment of its practical outcomes, and the mathematical-statistical substantiation of the data obtained.

Keywords

general cultural competence, cultural criterion, assessment criteria, diagnostic tools, experimental and control groups, cognitive criterion, axiological criterion, communicative-activity criterion, reflective criterion.

UMUMMADANIY KOMPETENTLIKNI BAHOLASH MEZONLARI, KO‘RSATKICHLARI VA DARAJALARI ASOSIDA TAJRIBA-SINOV NATIJALARI TAHLILI

Olimova Dilrabo Nurali qizi - NamDPI mustaqil tadqiqotchisi

Annotatsiya: *Ushbu maqolada umummadaniy kompetentlik shaxsning madaniy qadriyatlarni anglash, ularga hurmat bilan munosabatda bo‘lish, madaniy muloqot olib borish, ijtimoiy munosabatlarda faol ishtirok etish, o‘zining kasbiy va shaxsiy rivojlanishini madaniy mezonlar asosida tashkil etish qobiliyatlarini o‘zida mujassamlashtirishi, bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirishga qaratilgan pedagogik tizimning samaradorligini aniqlash, uning amaliy*

natijadorligini baholash hamda olingan ma'lumotlarni matematik-statistik jihatdan asoslash yuzasidan xulosalar berilgan.

***Kalit so'zlar**: umummadaniy kompetentlik, madaniy mezon, baholash mezonlari, diagnostik vositalar, tajriba va nazorat guruhlari, kognitiv mezon, aksiologik mezon, kommunikativ-faoliyatli mezon, refleksiv mezon.*

***Аннотация:** В статье рассматривается общекультурная компетентность, включающая способность личности понимать и уважать культурные ценности, вести культурный диалог, активно участвовать в социальном взаимодействии, а также выстраивать свое профессиональное и личностное развитие с опорой на культурные критерии. Также представлены выводы относительно определения эффективности педагогической системы, направленной на формирование общекультурной компетентности будущих педагогов, оценки ее практических результатов и математико-статистического обоснования полученных данных.*

***Ключевые слова:** общекультурная компетентность, культурный критерий, критерии оценки, диагностический инструментарий, экспериментальная и контрольная группы, когнитивный критерий, аксиологический критерий, коммуникативно-деятельностный критерий, рефлексивный критерий.*

Mamlakatimizda amalga oshirilayotgan ta'lim islohotlarining ustuvor yo'nalishlaridan biri raqobatbardosh, ma'naviy barkamol, zamonaviy bilim va kompetensiyalarga ega bo'lgan pedagog kadrlarni tayyorlash hisoblanadi. Ayniqsa, maktabgacha ta'lim tizimida faoliyat yuritadigan tarbiyachi-pedagoglarning kasbiy kompetentligi bilan bir qatorda umummadaniy kompetentligini rivojlantirish ham dolzarb masala sifatida e'tirof etilmoqda. Chunki tarbiyachi shaxsining madaniy saviyasi, ma'naviy dunyoqarashi, milliy va umuminsoniy qadriyatlarga sodiqligi, kommunikativ madaniyati hamda ijtimoiy faolligi uning kelajakdagi kasbiy faoliyati samaradorligini belgilovchi muhim omillardan biridir.

Umummadaniy kompetentlik shaxsning madaniy qadriyatlarni anglash, ularga hurmat bilan munosabatda bo‘lish, madaniy muloqot olib borish, ijtimoiy munosabatlarda faol ishtirok etish, o‘zining kasbiy va shaxsiy rivojlanishini madaniy mezonlar asosida tashkil etish qobiliyatlarini o‘zida mujassamlashtiradi. Shu sababli bo‘lajak tarbiyachi-pedagoglarda mazkur kompetentlikni shakllantirish va rivojlantirish oliy ta’lim muassasalari oldida turgan muhim vazifalardan biri hisoblanadi.

Tajriba-sinov ishlarining asosiy maqsadi bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirishga qaratilgan pedagogik tizimning samaradorligini aniqlash, uning amaliy natijadorligini baholash hamda olingan ma’lumotlarni matematik-statistik jihatdan asoslashdan iborat bo‘ldi.

Mazkur maqsadni amalga oshirish uchun quyidagi vazifalar belgilandi: umummadaniy kompetentlikni baholash mezonlarini ishlab chiqish; diagnostik vositalarni tanlash va takomillashtirish; tajriba va nazorat guruhlarini shakllantirish; dastlabki va yakuniy monitoring ishlarini amalga oshirish; natijalarni qiyosiy va statistik tahlil qilish; ishlab chiqilgan metodikaning samaradorlik darajasini aniqlash.

Pedagogik tadqiqotlarda kompetentlik darajasini aniqlash muayyan mezonlar va ko‘rsatkichlar tizimi asosida amalga oshiriladi. Tadqiqot davomida umummadaniy kompetentlikning mazmun-mohiyati, tarkibiy qismlari hamda maktabgacha ta’lim sohasi mutaxassislariga qo‘yiladigan zamonaviy talablar tahlili asosida baholashning to‘rtta asosiy mezoni ishlab chiqildi.

Mazkur mezonlar talabaning shaxsiy, bilish, amaliy va refleksiv faoliyatlarini kompleks baholash imkonini beradi. Ular o‘zaro uzviy bog‘langan bo‘lib, umummadaniy kompetentlikning shakllanganlik darajasini yaxlit holda aniqlashga xizmat qiladi.

1. Kognitiv mezon bo‘yicha vaziyatli topshiriqlar

Kognitiv mezon bo‘lajak tarbiyachi-pedagoglarning umummadaniy kompetentlikka oid nazariy bilimlari, madaniyat, ma’naviyat, milliy va umuminsoniy qadriyatlar, pe-

dagogik etika, madaniyatlararo muloqot hamda kasbiy faoliyatda madaniy yondashuvlarni qo‘llashga doir tushunchalarni egallaganlik darajasini aniqlashga xizmat qiladi.

Mazkur mezon bo‘yicha ishlab chiqilgan vaziyatli topshiriqlar talabalarning madaniy hodisalarni tushunishi, tahlil qilishi, baholashi va ularga nisbatan ilmiy asoslangan munosabat bildirish qobiliyatini aniqlashga qaratiladi.

Vaziyatli topshiriq mazmuni:

- milliy va umuminsoniy qadriyatlar o‘rtasidagi bog‘liqlikni izohlash;
- pedagogik faoliyatda madaniy merosdan foydalanish yo‘llarini aniqlash;
- tarbiyaviy jarayonda uchraydigan madaniy vaziyatlarni tahlil qilish;
- pedagogik etika va muomala madaniyatiga oid muammoli vaziyatlarni yechish;
- turli madaniyat vakillari bilan samarali muloqot qilish usullarini asoslash;
- maktabgacha ta’lim tashkilotlarida ma’naviy-ma’rifiy faoliyatni tashkil etish bo‘yicha takliflar ishlab chiqish.

Baholash ko‘rsatkichlari: nazariy bilimlarning to‘liqligi; tushunchalarni to‘g‘ri qo‘llay olishi; vaziyatni tahlil qilish qobiliyati; ilmiy xulosa chiqarish ko‘nikmasi.

2. Aksiologik mezon bo‘yicha vaziyatli topshiriqlar

Aksiologik mezon talabalarning milliy va umuminsoniy qadriyatlarga munosabati, ma’naviy-axloqiy pozitsiyasi, madaniy merosga hurmati, kasbiy faoliyatda insonparvarlik tamoyillariga amal qilishi hamda umummadaniy qadriyatlarni qadrlash darajasini aniqlashga qaratiladi.

Mazkur mezon bo‘yicha vaziyatli topshiriqlar talabalarning qadriyatlarga asoslangan qaror qabul qilish, axloqiy tanlovni amalga oshirish va kasbiy faoliyatda madaniy qadriyatlarga tayanish qobiliyatlarini baholaydi.

Vaziyatli topshiriq mazmuni:

- bolalarda milliy qadriyatlarga hurmatni shakllantirish bo‘yicha pedagogik vaziyatlarni hal qilish;

- tarbiyaviy faoliyatda tolerantlik va bag‘rikenglikni namoyon etish;
- ma’naviy-axloqiy muammolar yuzasidan pedagogik qaror qabul qilish;
- milliy an’ana va urf-odatlarning tarbiyadagi ahamiyatini asoslash;
- bolalar va ota-onalar bilan ishlashda insonparvarlik tamoyillarini qo‘llash;
- pedagogik faoliyatda uchraydigan axloqiy dilemmalarni tahlil qilish.

Baholash ko‘rsatkichlari: qadriyatlarga sodiqlik darajasi; axloqiy qaror qabul qilish qobiliyati; milliy va umuminsoniy qadriyatlarga hurmat; kasbiy faoliyatda insonparvarlik yondashuvi.

3. Kommunikativ-faoliyatli mezon bo‘yicha vaziyatli topshiriqlar

Kommunikativ-faoliyatli mezon bo‘lajak tarbiyachi-pedagoglarning muloqot madaniyati, jamoada ishlash qobiliyati, ijtimoiy faolligi, pedagogik hamkorlikni yo‘lga qo‘yishi hamda umummadaniy kompetentlikka oid bilimlarini amaliy faoliyatda qo‘llash darajasini aniqlashga xizmat qiladi.

Mazkur mezon bo‘yicha vaziyatli topshiriqlar talabalarning kasbiy faoliyatga yaqinlashtirilgan sharoitlarda muloqot qilish, muammolarni hal etish va madaniy hamkorlikni tashkil etish ko‘nikmalarini baholaydi.

Vaziyatli topshiriq mazmuni:

- ota-onalar bilan samarali muloqot olib borish;
- tarbiyalanuvchilar o‘rtasidagi nizoli vaziyatlarni bartaraf etish;
- jamoada madaniy muhit yaratish bo‘yicha loyihalar ishlab chiqish;
- madaniy-ma’rifiy tadbirlarni rejalashtirish va tashkil etish;
- pedagogik hamkorlikka oid vaziyatlarni hal qilish;
- bolalar bilan muloqot jarayonida kommunikativ madaniyatni namoyon etish.

Baholash ko‘rsatkichlari: kommunikativ kompetentlik darajasi; jamoaviy faoliyatga tayyorligi; hamkorlik ko‘nikmalari; pedagogik muammolarni amaliy hal qilish qobiliyati.

4. Refleksiv mezon bo‘yicha vaziyatli topshiriqlar

Refleksiv mezon talabaning o‘z faoliyatini tahlil qilish, baholash, o‘z-o‘zini rivojlantirish strategiyalarini belgilash va kasbiy faoliyatini takomillashtirishga bo‘lgan intilishini aniqlashga qaratiladi.

Mazkur mezon bo‘yicha vaziyatli topshiriqlar talabalarning o‘z imkoniyatlari va kamchiliklarini anglash, o‘z faoliyatiga tanqidiy yondashish hamda kelgusidagi rivojlanish istiqbollarini belgilash qobiliyatlarini o‘rganishga xizmat qiladi.

Vaziyatli topshiriq mazmuni:

- o‘z pedagogik faoliyatini tahlil qilish;
- kasbiy rivojlanish bo‘yicha individual reja tuzish;
- yuzaga kelgan pedagogik xatolar sabablarini aniqlash;
- madaniy kompetentlik darajasini mustaqil baholash;
- o‘zining kuchli va zaif tomonlarini tahlil qilish;
- umummadaniy kompetentlikni rivojlantirish bo‘yicha shaxsiy strategiyani ishlab chiqish.

Baholash ko‘rsatkichlari: o‘z-o‘zini baholash qobiliyati; refleksiv fikrlash darajasi; kasbiy o‘sishga intilish; o‘z faoliyatini takomillashtirishga tayyorlik.

Mazkur mezonlar asosida ishlab chiqilgan vaziyatli topshiriqlar bo‘lajak tarbiyachi-pedagoglarning umummadaniy kompetentligini kompleks baholash imkonini beradi. Kognitiv mezon bilimlar tizimini, aksiologik mezon qadriyatlar va munosabatlarni, kommunikativ-faoliyatli mezon amaliy faoliyat va muloqot ko‘nikmalarini, refleksiv mezon esa o‘z-o‘zini rivojlantirish va tahlil qilish qobiliyatlarini aniqlashga xizmat qiladi. Ushbu mezonlar tadqiqotning diagnostik apparatini tashkil etib, tajriba-sinov ishlarining ishonchliligi va obyektivligini ta’minlaydi.

Tadqiqot doirasida bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirishga qaratilgan metodikaning samaradorligini aniqlash maqsadida tajriba-si-

nov ishlari olib borildi. Tajriba-sinov ishlari davomida olingan natijalarni tahlil qilish va ilmiy asoslangan xulosalarga kelish uchun matematik-statistik metodlardan foydalanildi.

Mazkur tadqiqotda bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirish darajasini aniqlash uchun pedagogik kuzatish, test sinovlari, so‘rovnoma, suhbat, ekspert baholash va statistik tahlil metodlari qo‘llanildi. Tadqiqot natijalarining ishonchliligini ta’minlash maqsadida tajriba va nazorat guruhlari ko‘rsatkichlari o‘zaro taqqoslandi hamda Styudentning t-mezoni va Pirsonning χ^2 (xi-kvadrat) mezonlari yordamida statistik tahlil amalga oshirildi.

Mazkur tadqiqotda bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirish foydalanish samaradorligini aniqlash maqsadida tajriba-sinov ishlari tashkil etildi hamda olingan natijalar matematik-statistik metodlar asosida tahlil qilindi. Tadqiqotning asosiy mazmuni ta’lim bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirish orqali talabalarning bilish faoliyati, analitik fikrlashi, axborotni qayta ishlash ko‘nikmalari, mustaqil ta’lim olish qobiliyati va muammoli vaziyatlarda qaror qabul qilish kompetensiyalaridagi o‘zgarishlarni aniqlashdan iborat bo‘ldi.

Tajriba-sinov ishlari pedagogik tadqiqot metodologiyasi talablari asosida tashkil etilib, unda nazorat va tajriba guruhlari shakllantirildi. Tajriba guruhida bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirish asosida ishlab chiqilgan innovatsion metodik tizim qo‘llanilgan bo‘lsa, nazorat guruhida an’anaviy ta’lim metodlari asosida mashg‘ulotlar olib borildi. Jarayon davomida bo‘lajak o‘qituvchilarning kognitiv kompetensiyalari diagnostik mezonlar, ko‘rsatkichlar va baholash darajalari asosida aniqlab borildi.

Tajriba-sinov natijalarining ishonchliligini ta’minlash maqsadida matematik-statistik tahlil metodlaridan foydalanildi. Jumladan, o‘rtacha arifmetik qiymat, foiz ko‘rsatkichlari, variatsion tahlil, Student-Fisher mezoni hamda samaradorlik koeffitsientlari orqali tajriba va nazorat guruhlari natijalari o‘zaro qiyoslandi. Statistik

tahlillar orqali tadqiqot boshida va yakunida aniqlangan natijalar o‘rtasidagi farqning ishonchlilik darajasi belgilandi hamda bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirish asosida tashkil etilgan ta’lim jarayonining pedagogik samaradorligi asoslab berildi.

Aksiologik yondashuv asosida bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirish mexanizmlarini takomillashtirishga oid mezonlar, anketa-so‘rovnomalar, innovatsion texnologiyalar, interfaol metodlar bo‘yicha statistik ma’lumotlar bu bobda keltirilgan. Ushbu ma’lumotlar matematik statistik tahlil qilish jarayonida umumlashtirilgan dastlabki va yakuniy javoblar orqali tahlil qilindi. Tadqiqot natijalari oliy ta’lim muassasalarining maktabgacha ta’lim yo‘nalishlarida o‘tkazilgan sinovlar kesimida keltirilib, o‘quv jarayonining samaradorligi va aksiologik yondashuv asosida bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirish mexanizmlarini takomillashtirish darajasi haqida aniq xulosalar chiqarishga imkon berdi

Olingan natijalar asosida sinov guruhi talabalarining o‘rtacha o‘zlashtirish ko‘rsatkichlari hisoblab chiqilganda, tajriba yakunidagi o‘rtacha ko‘rsatkichlar tajriba boshidagi ko‘rsatkichlardan yuqori ekanligi aniqlandi. Mazkur holat bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirishga qaratilgan maxsus metodikaning amaliy jihatdan samarali ekanligini ko‘rsatadi.

Shuningdek, natijalar tahlili sinov guruhi talabalarida kognitiv, aksiologik, kommunikativ-faoliyatli hamda refleksiv mezonlar bo‘yicha ham ijobiy dinamik o‘sish kuzatilganligini namoyon etdi. Talabalarning madaniy qadriyatlarga oid bilimlari kengaydi, milliy va umuminsoniy qadriyatlarga bo‘lgan munosabati mustahkamlandi, muloqot madaniyati va hamkorlik ko‘nikmalari rivojlandi, o‘z faoliyatini tahlil qilish va baholash qobiliyatlari takomillashdi.

Nazorat guruhida ham ayrim ijobiy siljishlar kuzatilgan bo‘lsa-da, ularning ko‘rsatkichlari sinov guruhiga nisbatan ancha past bo‘ldi. Bu esa an’anaviy ta’lim

jarayonida umummadaniy kompetentlikning rivojlanishi tabiiy ravishda sodir bo‘lishini, biroq maxsus ishlab chiqilgan pedagogik tizim qo‘llanilganda mazkur jarayonning samaradorligi bir necha barobar ortishini ko‘rsatadi.

Demak, sinov guruhidagi o‘rtacha o‘zlashtirish ko‘rsatkichlari doimo dastlabki o‘zlashtirish ko‘rsatkichlaridan yuqori bo‘lganligi sababli, tajriba-sinov ishlariga tatbiq etilgan pedagogik model, metodika va texnologiyalar bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirishda yuqori samaradorlikka ega ekanligi to‘g‘risida ilmiy asoslangan xulosaga kelish mumkin. Natijalar tadqiqot gipotezasining to‘g‘riligini tasdiqlab, ishlab chiqilgan metodik tizimning oliy ta’lim muassasalari amaliyotiga joriy etilishi maqsadga muvofiq ekanligini ko‘rsatadi.

Olingan natijalar asosida, o‘qitish samaradorligini baholash mezonini birdan katta qiymatga ega bo‘lishi bilan, shuningdek, bilish darajasi esa baholash mezonining noldan katta qiymatga ega bo‘lishi bilan aniq ko‘rish mumkin. Bu holat, tajriba va nazorat guruhlaridagi o‘zgarishlarni taqqoslashda o‘qitish samaradorligining yaxshilanishini ko‘rsatadi. Shunday qilib, tadqiqot davrida aksiologik yondashuv asosida bo‘lajak tarbiyachi-pedagoglarda umummadaniy kompetentlikni rivojlantirish mexanizmlarini takomillashtirish (13,4%ga) isbotlandi. Shuningdek, tadqiqotni mavjud ilmiy-pedagogik va metodik talablarni hisobga olgan holda tashkil etish, uning samaradorligini ta’minlashda muhim omil bo‘lib xizmat qildi. Bu yondashuv, o‘quv jarayonini yanada samarali tashkil etish va natijalarning sifatini oshirish uchun zarur bo‘lgan shart-sharoitlarni yaratdi.

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LIQUIDITY RISK ASSESSMENT AND MANAGEMENT IN JOINT-STOCK COMPANIES: APPROACHES TO STRENGTHENING CORPORATE FINANCIAL RESILIENCE

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Abstract

This paper examines the systemic mechanisms of liquidity risk assessment and management in joint-stock companies (JSCs) as an indispensable prerequisite for corporate financial resilience. It explores the transition from static balance-sheet liquidity ratios to forward-looking dynamic cash flow models, proactive working capital optimization, and stress-testing protocols. The study analyzes the interplay between funding and asset liquidity risks, proposing strategic approaches—including digital treasury automation, diversified short-term financing instruments, and governance-driven risk limits—to insulate JSCs from macroeconomic shocks and maintain uninterrupted operational solvency.

Keywords

joint-stock company, liquidity risk, corporate financial resilience, cash conversion cycle, working capital management, stress testing, treasury management, corporate governance.

INTRODUCTION

In an era marked by macroeconomic volatility, shifting monetary policies, and heightened capital market uncertainty, the preservation of financial stability among joint-stock companies (JSCs) hinges directly on proactive liquidity risk governance. As public and private corporate entities expand their operational footprints and rely on

diversified capital structures, their exposure to cash flow mismatches and sudden tightening of credit conditions intensifies significantly. Consequently, maintaining an optimal liquidity buffer is no longer merely a routine treasury obligation, but a fundamental strategic pillar determining corporate solvency, market valuation, and long-term investor trust.

Liquidity risk—defined as the potential inability of an enterprise to settle its maturing financial obligations without incurring unacceptable losses—represents one of the most immediate catalysts of corporate insolvency. Even fundamentally profitable joint-stock companies can face rapid operational paralysis if systemic counterparty payment defaults, excessive inventory accumulation, or unhedged interest rate fluctuations erode their liquid asset reserves. This structural vulnerability necessitates a thorough overhaul of conventional liquidity assessment tools and the adoption of modern risk mitigation architectures capable of fortifying corporate financial resilience.

A rigorous assessment of liquidity risk requires a clear distinction between funding liquidity risk and asset (or market) liquidity risk within the corporate structure. Funding liquidity risk arises when a company cannot secure the cash needed to meet its contractual commitments as they fall due, whereas asset liquidity risk reflects the difficulty of converting non-cash current assets into liquid funds without incurring steep price discounts. In joint-stock companies, these two dimensions are closely interrelated; illiquid receivables or slow-moving inventories inevitably constrain the entity's capacity to service debts, satisfy payroll requirements, and fulfill dividend obligations to shareholders.

Traditionally, corporate financial analysts have evaluated liquidity by calculating static balance-sheet indicators, such as the current, quick, and cash ratios. While these indicators provide an immediate snapshot of asset coverage relative to short-term obligations, they possess inherent analytical shortcomings because they reflect historical

data captured at a single reporting cutoff date. Such static metrics fail to assess the credit quality and recoverable value of accounts receivable, fluctuations in cash generation throughout operational cycles, or the contractual timing of upcoming expenditure streams, frequently generating a false sense of security during impending liquidity strains.

To overcome these static limitations, contemporary corporate risk management prioritizes dynamic liquidity analytics centered on the Cash Conversion Cycle (CCC) and rolling cash flow projections. By quantifying the exact elapsed time between cash outlays for raw materials and cash inflows from customer receivables, the CCC provides an objective measure of operational efficiency and liquidity velocity. Systematically compressing this cycle—through just-in-time inventory control, selective vendor credit terms, and automated invoice collections—liberates trapped working capital and enhances internal cash generation without inflating costly external debt.

Furthermore, embedding forward-looking stress-testing frameworks and scenario analyses is essential for joint-stock companies operating in unpredictable economic climates. Establishing baseline, adverse, and severe liquidity shock scenarios enables corporate finance officers to simulate the consequences of unexpected revenue contractions, sudden customer default cascades, or supply chain bottlenecks. Evaluating how corporate liquidity buffers endure across 30-, 60-, and 90-day stress horizons allows executive management to preemptively identify potential liquidity deficits and calibrate contingent funding strategies well before an actual crisis unfolds.

The ongoing digital transformation of corporate finance has revolutionized liquidity risk management through the implementation of automated Treasury Management Systems (TMS) and Enterprise Resource Planning (ERP) platforms. Utilizing advanced algorithmic modeling and real-time banking APIs enables joint-stock companies to automate cash pooling across subsidiaries, consolidate multi-

currency accounts, and simulate daily cash balance requirements. Predictive cash flow analytics minimize forecasting errors, virtually eliminate unexpected overdraft fees, and empower treasury departments to deploy surplus balances into short-term, yield-generating liquid instruments.

Concurrently, diversifying short-term funding channels constitutes an indispensable operational defense against liquidity contraction. Over-reliance on single-lender overdrafts or traditional bank facilities exposes joint-stock companies to severe counterparty risks during banking sector downturns. Incorporating structured liquidity solutions—such as reverse factoring, supply chain finance, accounts receivable securitization, and the issuance of short-term commercial paper—provides flexible, multi-tiered liquidity backstops that can be activated swiftly during emergency cash outflows.

At the methodological level, adapting prudential liquidity standards established in global financial regulation, such as the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR), offers an effective benchmark for non-financial corporations. By maintaining a designated portfolio of High-Quality Liquid Assets (HQLA) capable of fully covering net projected cash outflows under stressed conditions over a 30-day period, joint-stock companies create a vital self-insuring liquidity buffer. This structural discipline shields the enterprise from external liquidity shocks and bolsters its sovereign and corporate credit ratings.

Effective liquidity risk management ultimately depends on solid institutionalization within corporate governance structures. Boards of directors and audit committees must establish explicit liquidity risk appetites, set strict tolerance thresholds for debt maturity concentration, and mandate regular liquidity reporting from executive officers. Aligning management incentive compensation with working capital productivity and liquidity resilience metrics—rather than solely top-line growth or short-

term earnings per share—mitigates moral hazard and fosters a culture of prudent resource stewardship.

CONCLUSION

In conclusion, liquidity risk assessment and management in modern joint-stock companies demands a strategic transition from backward-looking, static balance-sheet ratios toward an integrated, forward-looking risk management paradigm. Achieving corporate financial resilience requires harmonizing operational working capital discipline, rolling cash flow projections, digital treasury intelligence, and diversified contingent financing channels into a unified enterprise defense mechanism.

By institutionalizing comprehensive stress-testing regimens, embedding liquidity covenants into corporate governance standards, and actively utilizing modern financial tools such as factoring and commercial paper, joint-stock companies can effectively cushion the impact of exogenous shocks. Ultimately, maintaining a resilient liquidity posture not only guarantees uninterrupted solvency and operational agility but also preserves stakeholder confidence and enhances long-term shareholder value in competitive markets.

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ACTIVITIES (EPA) AND SIMULATION-BASED TECHNOLOGIES IN THE CLINICAL TRAINING OF FIFTH-YEAR MEDICAL STUDENTS IN ANESTHESIOLOGY AND REANIMATOLOGY

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Background: Modern medical education requires competency-based approaches that develop clinical reasoning, practical skills, professional responsibility, and readiness for supervised clinical practice. Entrustable Professional Activities (EPA) provide a structured framework for assessing whether students can safely perform specific clinical activities at different levels of supervision. Combining EPA with simulation-based learning may facilitate the transition from theoretical knowledge to clinical practice.

Objective: To evaluate the effectiveness of an integrated EPA–simulation model in improving clinical preparedness and professional competencies among fifth-year medical students in anesthesiology and reanimatology.

Materials and Methods: A multicenter educational study was conducted among 486 fifth-year students of the Treatment (General Medicine) faculties from three medical institutions in Uzbekistan: Bukhara Medical Institute (n=162), Andijan State Medical Institute (n=162), and Fergana Medical Institute (n=162). Students were divided into an experimental group (n=243) and a control group (n=243). The experimental group received EPA-based training combined with high-fidelity simulation, clinical scenarios, and structured debriefing. Students completed pre- and post-intervention questionnaires assessing clinical confidence, emergency management, clinical decision-making, teamwork, and professional responsibility.

Results: The integrated EPA–simulation program demonstrated significant improvements in the experimental group. Confidence in airway management increased from 39.5% to 83.1%, CPR from 35.4% to 81.1%, and readiness for anesthetic management from 28.8% to 73.7% (p<0.001 for all). Confidence in emergency management increased from 32.1% to 78.6%, clinical decision-making from 36.6% to 80.2%, and teamwork competence from 42.0% to 85.2% (p<0.001). In comparison, improvements in the control group were considerably smaller.

Scientific novelty: An integrated EPA–Simulation Clinical Training Model was developed, linking each simulation scenario to a specific EPA, structured competency assessment, reflective debriefing, and progressive levels of entrustment. This model allows evaluation not only of students' knowledge and practical skills but also of their readiness to assume clinical responsibility under an appropriate level of supervision.

Conclusion: The integration of EPA and simulation-based technologies significantly improves clinical preparedness, decision-making, teamwork, and professional confidence among fifth-year medical students. The proposed model provides a structured transition from supervised learning toward greater professional autonomy and may be recommended as an effective component of competency-based medical education in anesthesiology and reanimatology.

Keywords: Entrustable Professional Activities; EPA; simulation-based education; anesthesiology; reanimatology; clinical competence; clinical reasoning; medical education; professional autonomy; fifth-year medical students.

ASSESSMENT CHALLENGES IN MIXED-ABILITY CLASSROOMS

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ABSTRACT

This article examines the major challenges associated with assessment in mixed-ability classrooms. A mixed-ability classroom consists of learners with different levels of knowledge, language proficiency, learning speed, motivation, skills, and individual educational needs. Applying identical assessment procedures and criteria to all students may sometimes produce inequitable outcomes because learners do not begin the learning process from the same level. The article discusses several major assessment challenges, including standardized assessment, limited attention to individual differences, inflexible assessment criteria, students' psychological factors, and teachers' workload. It also explores the potential of formative assessment, differentiated assessment, portfolios, peer assessment, and self-assessment in mixed-ability classrooms. The article argues that effective assessment should measure not only students' final achievement but also their individual progress and development. A flexible and inclusive assessment system can provide teachers with more accurate information about students' learning and help create a fairer educational environment.

Keywords

mixed-ability classroom, assessment, formative assessment, differentiated assessment, individual needs, EFL, learner development, assessment criteria.

ARALASH QOBILIYATLI SINFLARDA BAHOLASH MUAMMOLARI

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ANNOTATSIYA

Ushbu maqolada aralash qobiliyatli sinflarda o‘quvchilar bilimini baholash jarayonida yuzaga keladigan asosiy muammolar tahlil qilinadi. Aralash qobiliyatli sinf deganda bilim darajasi, til ko‘nikmalari, o‘rganish tezligi, motivatsiyasi va individual ehtiyojlari turlicha bo‘lgan o‘quvchilar bir guruhda ta’lim oladigan muhit tushuniladi. Bunday sinflarda barcha o‘quvchilar uchun bir xil baholash mezonlaridan foydalanish ayrim hollarda adolatsiz natijalarga olib kelishi mumkin. Maqolada standartlashtirilgan baholash, individual farqlarni hisobga olmaslik, baholash mezonlarining moslashuvchan emasligi, o‘quvchilarning psixologik holati va o‘qituvchining ish yuklamasi kabi muammolar ko‘rib chiqiladi. Shuningdek, formativ baholash, differensial baholash, portfolio, o‘zaro baholash va o‘z-o‘zini baholash kabi yondashuvlarning aralash qobiliyatli sinflarda qo‘llanish imkoniyatlari muhokama qilinadi. Maqolada samarali baholash o‘quvchilarning faqat yakuniy natijasini emas, balki ularning individual rivojlanish jarayonini ham hisobga olishi kerakligi ta’kidlanadi.

Kalit so‘zlar: aralash qobiliyatli sinf, baholash, formativ baholash, differensial baholash, individual ehtiyojlar, EFL, o‘quvchi rivojlanishi, baholash mezonlari.

KIRISH

Zamonaviy ta’lim tizimida sinflarning tarkibi tobora xilma-xil bo‘lib bormoqda. Ayniqsa, chet tilini o‘qitishda bir sinf yoki guruh tarkibida bilim va ko‘nikmalari turli darajada bo‘lgan o‘quvchilarni uchratish odatiy hol hisoblanadi. Ayrim o‘quvchilar ingliz tilini maktabgacha yoshdan o‘rganishni boshlagan bo‘lsa, boshqalari uni faqat maktab yoki universitetda o‘rganishi mumkin. Natijada bir xil dars jarayonida o‘quvchilarning lug‘at boyligi, grammatik bilimlari, talaffuzi, tinglab tushunishi va gapirish qobiliyatlari sezilarli darajada farq qiladi.

Bunday sinflar odatda mixed-ability classrooms, ya’ni aralash qobiliyatli sinflar deb ataladi. Ushbu muhit o‘qituvchidan dars mazmunini, topshiriqlarni va baholash usullarini turli darajadagi o‘quvchilarga moslashtirishni talab qiladi.

Baholash ta’lim jarayonining muhim tarkibiy qismidir. U o‘quvchining nimani o‘rganganini aniqlash, o‘qitish samaradorligini baholash va kelgusidagi ta’lim strategiyalarini belgilash imkonini beradi. Biroq aralash qobiliyatli sinflarda baholash jarayoni oddiy bir xil topshiriq va umumiy mezonlar asosida tashkil etilganda muammolar yuzaga kelishi mumkin.

Shu sababli aralash qobiliyatli sinflarda adolatli, moslashuvchan va rivojlanishga yo‘naltirilgan baholash tizimini shakllantirish muhim pedagogik vazifalardan biridir.

ARALASH QOBILIYATLI SINFLAR TUSHUNCHASI: Aralash qobiliyatli sinf — bu o‘quvchilarning bilim darajasi, qobiliyati, o‘rganish tezligi, tajribasi va ehtiyojlari bir xil bo‘lmagan ta’lim guruhidir.

Masalan, ingliz tili sinfida ayrim o‘quvchilar B2 darajasida erkin gaplasha olsa, boshqalari A2 darajasida bo‘lishi mumkin. Ba’zi o‘quvchilar grammatikani yaxshi o‘zlashtirgan bo‘lsa, boshqalarning kuchli tomoni speaking yoki listening bo‘lishi mumkin.

Bunday farqlar o‘qituvchiga ikki tomonlama vazifa yuklaydi. Bir tomondan, yuqori darajadagi o‘quvchilar zerikib qolmasligi kerak. Ikkinchi tomondan, boshlang‘ich yoki pastroq darajadagi o‘quvchilar topshiriqlarni bajarishda qiynalib qolmasligi lozim.

Shu sababli baholash tizimi ham o‘quvchilarning xilma-xilligini hisobga olishi kerak.

ARALASH QOBILIYATLI SINFLARDA ASOSIY BAHOLASH MUAMMOLARI

Bir xil mezonlardan foydalanish

Aralash qobiliyatli sinflarda eng keng tarqalgan muammolardan biri barcha o‘quvchilarni aynan bir xil mezon asosida baholashdir.

Masalan, barcha o‘quvchilarga bir xil darajadagi writing topshirig‘i berilib, bir xil grammatik va leksik talab qo‘yilsa, boshlang‘ich darajadagi o‘quvchi yuqori darajadagi o‘quvchiga nisbatan ancha noqulay vaziyatga tushadi.

Bunday baholash o‘quvchining real rivojlanishini emas, balki uning boshqa o‘quvchilarga nisbatan qayerda turganini ko‘rsatishi mumkin.

Individual rivojlanishni hisobga olmaslik

O‘quvchilar bir xil boshlang‘ich darajaga ega emas. Bir o‘quvchi qisqa vaqt ichida katta progress qilishi, boshqa o‘quvchi esa sekinroq rivojlanishi mumkin.

Agar faqat yakuniy natija baholansa, katta rivojlanishga erishgan, ammo hali yuqori darajaga chiqmagan o‘quvchining mehnati yetarlicha aks etmasligi mumkin.

Shuning uchun baholashda o‘quvchining oldingi natijasi bilan hozirgi natijasi o‘rtasidagi farq ham hisobga olinishi maqsadga muvofiq.

Standartlashtirilgan testlarning cheklovlari

Standart testlar katta guruhlarni baholash uchun qulay bo‘lsa-da, ular individual farqlarni har doim ham to‘liq aks ettira olmaydi.

Masalan, speaking ko‘nikmasini faqat yozma test orqali baholash o‘quvchining real kommunikativ qobiliyati haqida to‘liq ma’lumot bermaydi.

Shuning uchun turli baholash shakllaridan foydalanish zarur.

Psixologik bosim

Baholash o‘quvchilarda stress va xavotirni yuzaga keltirishi mumkin. Aralash qobiliyatli sinflarda pastroq darajadagi o‘quvchilar o‘zlarini kuchli o‘quvchilar bilan solishtirib, o‘z qobiliyatlariga nisbatan salbiy fikr shakllantirishlari mumkin.

Bu holat motivatsiyaning pasayishiga va darsdagi faollikning kamayishiga olib kelishi mumkin.

O‘qituvchi baholash jarayonida faqat kamchiliklarni ko‘rsatish emas, balki o‘quvchining yutuqlarini ham ta’kidlashi kerak.

FORMATIV BAHOLASHNING AHAMIYATI

Formativ baholash aralash qobiliyatli sinflarda samarali yondashuvlardan biri hisoblanadi. Uning asosiy maqsadi o‘quvchiga yakuniy ball berishdan ko‘ra, uning o‘rganish jarayonini kuzatish va rivojlanishiga yordam berishdir.

Formativ baholash quyidagi usullar orqali amalga oshirilishi mumkin:

- qisqa savol-javoblar;
- classroom discussion;
- mini-testlar;
- feedback;
- kuzatish;
- exit ticket;
- peer assessment;
- self-assessment.

Masalan, o‘qituvchi dars oxirida o‘quvchilardan bugungi mavzudan uchta o‘rgangan narsasini yozishni so‘rashi mumkin. Bu o‘qituvchiga o‘quvchilarning mavzuni qanchalik tushunganini aniqlash imkonini beradi.

Formativ baholashning muhim jihati shundaki, u xatoni yakuniy muvaffaqiyatsizlik sifatida emas, balki o‘rganish jarayonining bir qismi sifatida ko‘rishga yordam beradi.

DIFFERENSIAL BAHOLASH

Differensial baholash aralash qobiliyatli sinflarda individual farqlarni hisobga olish imkonini beradi.

Masalan, barcha o‘quvchilarga bir xil mavzu berilishi mumkin, ammo topshiriqning murakkablik darajasi farqlanadi.

O‘Z-O‘ZINI VA O‘ZARO BAHOLASH

O‘z-o‘zini baholash o‘quvchilarga o‘z kuchli va zaif tomonlarini aniqlash imkonini beradi.

Masalan, o‘quvchi quyidagi savollarga javob berishi mumkin:

- What can I do now?
- What was difficult for me?
- What do I need to improve?
- What is my next learning goal?

O‘zaro baholashda esa o‘quvchilar bir-birining ishlarini belgilangan mezonlar asosida tahlil qiladi.

Bu usullar o‘quvchilarning metakognitiv ko‘nikmalarini rivojlantiradi va ularni o‘z ta’lim jarayoniga faolroq jalb qiladi.

O‘QITUVCHINING ROLI

Aralash qobiliyatli sinflarda o‘qituvchi baholash jarayonining tashkilotchisi va yo‘naltiruvchisi hisoblanadi.

O‘qituvchi:

1. o‘quvchilarning boshlang‘ich darajasini aniqlashi;
2. individual ehtiyojlarni hisobga olishi;
3. aniq va tushunarli mezonlar ishlab chiqishi;
4. turli baholash usullaridan foydalanishi;
5. muntazam feedback berishi;
6. o‘quvchilarning rivojlanishini kuzatishi kerak.

Bundan tashqari, baholash mezonlari o‘quvchilarga oldindan tushuntirilishi lozim. O‘quvchi nimaga qarab baholanishini bilsa, o‘z faoliyatini yaxshiroq rejalashtira oladi.

TEXNOLOGIYALARNING O‘RNI

Raqamli texnologiyalar aralash qobiliyatli sinflarda individual baholash imkoniyatlarini kengaytirishi mumkin.

Onlayn quizlar, learning management systems, elektron portfolio va interaktiv topshiriqlar yordamida o‘qituvchi o‘quvchilarning natijalarini muntazam kuzatishi mumkin.

Raqamli vositalarning yana bir afzalligi — ayrim topshiriqlarni o‘quvchining darajasiga moslashtirish imkoniyatidir.

Biroq texnologiyaning o‘zi muammoni hal qilmaydi. Eng muhim masala — o‘qituvchining baholash maqsadini to‘g‘ri belgilashi va mos metodni tanlashidir.

ADOLATLI BAHOLASH TAMOYILLARI

Aralash qobiliyatli sinflarda adolatli baholash quyidagi tamoyillarga asoslanishi mumkin:

Birinchidan, baholash mezonlari aniq bo‘lishi kerak.

Ikkinchidan, o‘quvchining individual rivojlanishi hisobga olinishi lozim.

Uchinchidan, bir nechta baholash usullaridan foydalanish kerak.

To‘rtinchidan, o‘quvchiga muntazam va konstruktiv feedback berilishi zarur.

Beshinchidan, baholash o‘quvchini boshqa o‘quvchilar bilan doimiy solishtirishga emas, uning rivojlanishiga yo‘naltirilishi kerak.

MUHOKAMA

Aralash qobiliyatli sinflarda baholash murakkab pedagogik jarayon hisoblanadi. Barcha o‘quvchilarga bir xil topshiriq va mezonlarni qo‘llash tashkiliy jihatdan qulay bo‘lsa-da, bu har doim ham pedagogik jihatdan adolatli bo‘lavermaydi.

O‘quvchilar o‘rtasidagi farqlarni hisobga olish baholash standartlarini pasaytirishni anglatmaydi. Aksincha, bu har bir o‘quvchiga o‘z bilim va ko‘nikmalarini imkon qadar to‘liq namoyish qilish uchun mos sharoit yaratishni anglatadi.

Ayniqsa EFL sinflarida reading, writing, listening va speaking ko‘nikmalarini alohida va kompleks baholash muhim. Birgina test o‘quvchining barcha til qobiliyatlarini to‘liq ko‘rsatib bera olmaydi.

Shuningdek, baholash natijalari o‘qitish jarayonini takomillashtirish uchun ishlatilishi kerak. Agar o‘quvchilarning katta qismi ma’lum bir mavzuni o‘zlashtira olmagan bo‘lsa, muammo faqat o‘quvchilarda emas, balki dars metodikasi yoki materiallarida ham bo‘lishi mumkin.

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TRANSLATION OF PSYCHOLOGICAL TERMS INTO UZBEK IN ENGLISH-LANGUAGE SELF-HELP LITERATURE: THE CASE OF "ATOMIC HABITS"

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Abstract

This thesis analyzes the specific features of translating psychological terms used in English-language self-help literature into Uzbek, using James Clear's "Atomic Habits" as an example. The study examines the representation of such frequently used terminological units as habit, cue, craving, response, reward, identity, self-image, mindset, and habit loop in Uzbek from a comparative and contrastive and translation studies perspective. The analysis considers not only the lexical correspondence of terms but also their semantic, conceptual, and functional equivalence as the main criteria. The results show that some terms have established equivalents in Uzbek, while other units require contextual adaptation or descriptive translation. In particular, the terminological variability observed within the cue–craving–response–reward model demonstrates the need to ensure conceptual consistency in translation.

Keywords

self-help literature, psychological term, translation, terminological unit, equivalence, translation transformation, comparative and contrastive analysis, behavior, motivation, habit.

INGLIZ TILIDAGI SELF-HELP ADABIYOTLARDA PSIXOLOGIK TERMINLARNING O'ZBEK TILIGA TARJIMASI: "ATOMIC HABITS" ASARI MISOLIDA

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Annotatsiya

Mazkur tezisda ingliz tilidagi self-help adabiyotlarda qo‘llanadigan psixologik terminlarning o‘zbek tiliga tarjima qilinish xususiyatlari Jeyms Klirning “Atomic Habits” asari misolida tahlil qilinadi. Tadqiqotda asarda faol qo‘llangan *habit, cue, craving, response, reward, identity, self-image, mindset* va *habit loop* kabi terminologik birliklarning o‘zbek tilida ifodalanishi qiyosiy-chog‘ishtirma va tarjimashunoslik nuqtayi nazaridan ko‘rib chiqiladi. Tahlil jarayonida terminlarning faqat lug‘aviy muvofiqligi emas, balki ularning semantik, konseptual va funksional ekvivalentligi ham asosiy mezon sifatida belgilanadi. Natijalar ayrim terminlar o‘zbek tilida barqaror muqobillarga ega ekanligini, boshqa birliklar esa kontekstual moslashtirish yoki tavsifiy tarjimani talab qilishini ko‘rsatadi. Ayniqsa, *cue–craving–response–reward* modeli doirasida terminologik variativlik kuzatilishi tarjimada konseptual izchillikni ta’minlash zarurligini ko‘rsatadi.

Kalit so‘zlar: self-help adabiyot, psixologik termin, tarjima, terminologik birlik, ekvivalentlik, tarjima transformatsiyasi, qiyosiy-chog‘ishtirma tahlil, xulq-atvor, motivatsiya, odat.

Kirish

Bugungi kunda shaxsiy rivojlanish, o‘z-o‘zini takomillashtirish, motivatsiya, xulq-atvorni boshqarish va kundalik samaradorlikni oshirishga qaratilgan self-help adabiyotlarning ommalashuvi kuzatilmoqda. Ushbu adabiyotlar ilmiy bilimlarni keng kitobxonlar ommasiga sodda, tushunarli va amaliy shaklda yetkazishi bilan ajralib turadi. Shu jihatdan self-help asarlarni tarjima qilish jarayonida ilmiy terminlarning mazmunini saqlash bilan birga, ularni o‘zbek kitobxoni uchun tabiiy va tushunarli shaklda ifodalash muhim vazifalardan biridir.

Self-help matnlarida psixologiya, xulq-atvor, motivatsiya va kognitiv jarayonlarga oid terminlar kundalik leksika bilan birgalikda qo‘llanadi. Natijada tarjimon oldida

terminning faqat lug‘aviy ekvivalentini topish emas, balki uning muayyan kontekstdagi konseptual mazmunini aniqlash vazifasi ham yuzaga keladi.

Mazkur masala Jeyms Klirning *Atomic Habits: An Easy & Proven Way to Build Good Habits & Break Bad Ones* asarida yaqqol namoyon bo‘ladi. Asarda inson odatlarining shakllanishi va o‘zgarishi psixologik hamda xulq-atvor mexanizmlari asosida tushuntiriladi. Muallif odat shakllanishini *cue*, *craving*, *response* va *reward* kabi to‘rt bosqichga ajratadi. Ushbu bosqichlarning o‘zaro bog‘langan tizimi *habit loop* tushunchasi orqali izohlanadi.

Asosiy qism

Psixologik terminlar insonning ruhiy jarayonlari, motivatsiyasi, xulq-atvori, kognitiv faoliyati va shaxsiyatiga oid maxsus tushunchalarni ifodalovchi birliklardir. Self-help adabiyotlarda bunday terminlar sof ilmiy matnlardagidan farqli ravishda ilmiy mazmun va ommabop bayonning uyg‘unligi asosida qo‘llanadi. Shu sababli ularning tarjimasida terminning semantik mazmuni, kontekstdagi funksiyasi va o‘zbek tilidagi tabiiy ifodalanish imkoniyatlari birgalikda hisobga olinishi kerak.

“Atomic Habits” asarida qo‘llangan ayrim terminlar o‘zbek tilida nisbatan barqaror muqobillarga ega. Masalan, *habit* — “odat”, *reward* — “mukofot”, *goal* — “maqsad”, *environment* — “muhit” tarzida berilishi mumkin. Bunday birliklarda tarjima jarayoni asosan to‘g‘ridan-to‘g‘ri leksik ekvivalentlashga asoslanadi. Biroq mavjud ekvivalentning o‘zi tarjimaning avtomatik ravishda adekvatligini anglatmaydi. Terminning matndagi boshqa birliklar bilan semantik munosabati ham hisobga olinishi lozim.

Psixologik terminlarning ayrimlari esa o‘zbek tiliga o‘zlashtirilgan xalqaro birliklar orqali tarjima qilinadi. Bunga *motivation* — *motivatsiya* juftligi misol bo‘la oladi. Bunday usul xalqaro ilmiy terminologiya bilan aloqani saqlab qoladi. Shu bilan birga, self-help adabiyotlarning asosiy auditoriyasi mutaxassis bo‘lmagan

kitobxonlardan iborat bo‘lishi mumkinligi sababli murakkab terminlarni izohlash yoki o‘zbekcha semantik birlik bilan ifodalash zarurati ham yuzaga keladi.

Terminologik birliklarni tarjima qilishning yana bir samarali usuli — kalkalashdir. Masalan, *positive reinforcement* — “ijobiy mustahkamlash”, *behavioral change* — “xulq-atvor o‘zgarishi”, *automatic behavior* — “avtomatik xulq-atvor” tarzida tarjima qilinishi mumkin. Bunday holatda manba tilidagi terminning tarkibiy modeli tarjima tilidagi mos birliklar yordamida qayta yaratiladi.

Biroq “Atomic Habits”dagi eng muhim tarjimashunoslik muammolaridan biri *cue* terminida ko‘zga tashlanadi. Asar konsepsiyasida *cue* odatni boshlovchi signal yoki stimulni anglatadi. O‘zbek tilida uni “signal”, “ishora”, “belgi” yoki “qo‘zg‘atuvchi” kabi birliklar orqali ifodalash mumkin. Ularning semantik imkoniyatlari bir-biridan farqlanadi. Masalan, “signal” odatni ishga tushiruvchi omil ma’nosini nisbatan aniqroq ifodalasa, “ishora” umumiyroq semantik doiraga ega. Shuning uchun tarjimon ushbu birlikni tanlashda kontekst va terminning konseptual funksiyasiga tayanishi lozim.

Craving termini ham alohida tahlilni talab qiladi. Ushbu birlik oddiy xohishdan ko‘ra kuchliroq psixologik holatni ifodalab, insonni muayyan xatti-harakatga undovchi istakni bildiradi. O‘zbek tilida “istak”, “kuchli istak”, “kuchli ishtiyoq” va “intilish” kabi variantlar qo‘llanishi mumkin. “Istak” umumiyroq ma’noga ega bo‘lsa, “kuchli ishtiyoq” terminning intensivlik komponentini aniqroq ifodalaydi. Demak, tarjimada terminning faqat asosiy semasi emas, balki uning qo‘shimcha semantik komponentlari ham hisobga olinishi zarur.

Response va *reward* birliklari *habit loop* modelining keyingi bosqichlarini ifodalaydi. *Response* “javob” yoki “javob reaksiyasi” tarzida berilishi mumkin. *Reward* esa o‘zbek tilida nisbatan barqaror “mukofot” ekvivalentiga ega. Shu asosda modelning ixcham tarjimasini “signal → istak → javob → mukofot” shaklida berish mumkin. Ilmiy

izohda esa “odatni ishga tushiruvchi signal → kuchli istak → xulqiy javob → mukofot” shaklidagi kengaytirilgan variant konseptual mazmunni aniqroq yetkazadi.

Asardagi muhim konseptlardan yana biri — *identity*. Ushbu termin odatlarni insonning o‘zini qanday shaxs sifatida ko‘rishi bilan bog‘laydi. O‘zbek tilida “o‘zlik”, “shaxsiyat” yoki “identitet” kabi variantlardan foydalanish mumkin. Bunda tarjimon ilmiy aniqlik va o‘quvchi uchun tushunarlilik o‘rtasidagi muvozanatni saqlashi kerak. Self-help matni keng auditoriyaga mo‘ljallanganligi sababli ayrim kontekstlarda “o‘zini qanday shaxs sifatida ko‘rishi” kabi tavsifiy shakl kommunikativ jihatdan samaraliroq bo‘lishi mumkin.

Mindset termini ham tarjimada muayyan muammoni yuzaga keltiradi. U “fikrlash tarzi”, “tafakkur tarzi”, “dunyoqarash” yoki “mental yondashuv” tarzida ifodalanishi mumkin. Biroq ushbu variantlar semantik jihatdan to‘liq teng emas. “Dunyoqarash” kengroq tushunchani anglatadi, “fikrlash tarzi” esa muayyan vaziyatdagi fikrlash va munosabat modelini aniqroq ifodalashi mumkin. Shuning uchun mazkur termin uchun yagona universal tarjima emas, balki kontekstual muvofiqlik muhim hisoblanadi.

Terminologik variativlik tarjima jarayonining yana bir muhim jihatidir. Bir xil inglizcha terminning o‘zbek tilida bir necha variant orqali ifodalanishi tabiiy til hodisasi bo‘lishi mumkin. Masalan, *cue* uchun “signal” va “ishora”, *craving* uchun “istak” va “kuchli ishtiyoq”, *identity* uchun “o‘zlik” va “identitet” variantlarining mavjudligi kuzatiladi. Biroq ilmiy matnda bitta konseptning ortiqcha ko‘p variantlarda berilishi terminologik noaniqlikka sabab bo‘lishi mumkin. Shu sababli ilmiy tarjimada asosiy terminologik variantni belgilash va undan izchil foydalanish maqsadga muvofiqdir.

Shu nuqtayi nazardan psixologik terminlarning tarjimasida uch darajadagi muvofiqlikni hisobga olish mumkin: **formal, semantik va funksional muvofiqlik**. Formal muvofiqlik terminning tashqi shakliga yaqinlikni, semantik muvofiqlik uning ma’nosini saqlashni, funksional muvofiqlik esa terminning matndagi kommunikativ

vazifasini saqlashni anglatadi. Self-help adabiyotlarda aynan funksional muvofiqlik alohida ahamiyatga ega, chunki bunday asarlarning maqsadi o‘quvchiga muayyan tushunchani yetkazish bilan birga, uni amaliy harakatga undashdan ham iborat.

Xulosa

“Atomic Habits” asari misolida olib borilgan tahlil ingliz tilidagi self-help adabiyotlarda qo‘llanadigan psixologik terminlarning o‘zbek tiliga tarjimasida bir nechta strategiyalar faol qo‘llanishini ko‘rsatadi. Jumladan, to‘g‘ridan-to‘g‘ri leksik ekvivalentlash, o‘zlashtirish, kalkalash, tavsifiy tarjima va kontekstual moslashtirish shular jumlasidandir.

Tahlil natijasida *habit, reward, goal, environment* kabi birliklarning o‘zbek tilida nisbatan barqaror muqobillari mavjudligi, *cue, craving, identity, self-image* va *mindset* kabi birliklarda esa kontekstual hamda konseptual yondashuv zarurligi aniqlandi. Ayniqsa, *cue–craving–response–reward* modelida kuzatiladigan terminologik variativlik tarjimada terminologik izchillik masalasining muhimligini ko‘rsatadi.

Shunday qilib, psixologik terminlarni tarjima qilishda faqat lug‘aviy ekvivalentni tanlash yetarli emas. Terminning semantik mazmuni, konseptual yuklamasi va kommunikativ funksiyasi ham hisobga olinishi lozim. Self-help adabiyotlar tarjimasining samaradorligi esa ilmiy aniqlik, terminologik izchillik va kitobxon uchun tushunarlilik o‘rtasidagi muvozanatni ta’minlashga bevosita bog‘liq.

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PATHOLOGICAL ANATOMY OF ISCHEMIA AND INFARCTION: CELLULAR MECHANISMS AND MORPHOLOGICAL MANIFESTATIONS

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Abstract

Ischemic injury is one of the most significant pathological processes underlying the development of infarction in various organs. The aim of this study is to summarize current understanding of the cellular mechanisms of ischemic injury and to esta blish their relationship with the major morphological manifestations of infarction. The sequential alterations in cellular energy metabolism, ionic homeostasis, and mitochondrial function that determine the transition from reversible cellular injury to irreversible damage and necrosis are discussed. Particular attention is given to ischemia–reperfusion injury, the morphological patterns of necrosis, and the specific features of infarction in different organs.

Keywords

ischemia, infarction, necrosis, hypoxia, ischemia–reperfusion injury, ATP, mitochondria, pathological anatomy.

ПАТОЛОГИЧЕСКАЯ АНАТОМИЯ ИШЕМИИ И ИНФАРКТА: КЛЕТОЧНЫЕ МЕХАНИЗМЫ И МОРФОЛОГИЧЕСКИЕ ПРОЯВЛЕНИЯ

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Аннотация.Ишемическое повреждение является одним из наиболее значимых патологических процессов, лежащих в основе развития инфаркта различных органов. Цель настоящей работы — обобщить современные

представления о клеточных механизмах ишемического повреждения и установить их взаимосвязь с основными морфологическими проявлениями инфаркта. Рассмотрены последовательные изменения энергетического обмена, ионного гомеостаза и функции митохондрий, определяющие переход от обратимого клеточного повреждения к некрозу. Особое внимание уделено ишемически-реперфузионному повреждению, морфологическим типам некроза и особенностям инфарктов различных органов.

Ключевые слова: ишемия, инфаркт, некроз, гипоксия, реперфузионное повреждение, АТФ, митохондрии, патологическая анатомия.

Актуальность. Ишемия относится к наиболее распространённым механизмам клеточного и тканевого повреждения и лежит в основе ряда клинически значимых состояний, включая инфаркт миокарда, ишемический инсульт и острое повреждение почек. В отличие от изолированной гипоксии, ишемия сопровождается не только недостаточной доставкой кислорода, но и нарушением удаления продуктов метаболизма, что ускоряет развитие клеточного повреждения. Морфологическим исходом необратимого ишемического повреждения является инфаркт, особенности которого зависят от продолжительности ишемии, характера кровоснабжения и структурно-функциональных свойств органа.

Цель работы. Обобщить основные клеточные механизмы ишемического повреждения и показать их взаимосвязь с морфологическими проявлениями инфаркта, включая особенности ишемически-реперфузионного повреждения и органоспецифические варианты поражения.

Материал и методы. Работа выполнена в форме научного обзора. Проведён анализ литературных данных, посвящённых клеточной биологии ишемии и реперфузии, механизмам некротической гибели клеток, морфологии инфаркта,

феномену «волнового фронта», ишемической пенумбре, а также особенностям ишемического повреждения миокарда, головного мозга, почек и кишечника.

Результаты и обсуждение. Ключевым ранним звеном ишемического повреждения является нарушение окислительного фосфорилирования с последующим снижением синтеза АТФ. В условиях недостатка кислорода клетка переходит на анаэробный гликолиз, что сопровождается накоплением лактата и снижением внутриклеточного pH. Дефицит АТФ нарушает функцию Na^+/K^+-АТФазы, вследствие чего натрий и вода накапливаются внутри клетки и развивается отёк клеток и органелл. На ранней стадии эти изменения остаются потенциально обратимыми.

Продолжающаяся ишемия сопровождается нарушением кальциевого гомеостаза. Увеличение концентрации Ca^{2+} в цитозоле и митохондриях способствует повреждению клеточных структур и переходу к необратимой фазе. Открытие митохондриальной поры переходной проницаемости, потеря митохондриального потенциала, дальнейшее истощение АТФ и повреждение мембран приводят к некротической гибели клетки. Морфологически процесс проявляется последовательным развитием клеточного отёка, повреждением мембран и ядерными изменениями.

Восстановление кровотока после ишемии имеет двойственное значение. Реперфузия необходима для сохранения жизнеспособной ткани, однако одновременно может усиливать повреждение за счёт образования активных форм кислорода, кальциевой перегрузки, воспалительной реакции и нарушения микроциркуляции. Отёк капилляров, агрегация тромбоцитов и накопление нейтрофилов способны препятствовать полноценному восстановлению микроциркуляции, формируя феномен «no-reflow».

Основным морфологическим вариантом ишемической гибели клеток в большинстве плотных органов является коагуляционный некроз, при котором архитектура ткани некоторое время сохраняется, несмотря на гибель клеток. Последовательно наблюдаются пикноз, кариорексис и кариолизис ядер, а цитоплазма становится более эозинофильной. Исключением является головной мозг, где ишемический инфаркт характеризуется преимущественно колликвационным некрозом с последующим разжижением повреждённой ткани.

По макроскопическим особенностям различают анемические (белые) и геморрагические (красные) инфаркты. Белые инфаркты типичны для плотных органов с конечным артериальным кровоснабжением, прежде всего сердца, почек и селезёнки. Красные инфаркты чаще возникают в органах с двойным или развитым анастомотическим кровоснабжением, при венозной окклюзии и после реперфузии ранее ишемизированной ткани.

Временная эволюция инфаркта характеризуется закономерной сменой морфологических стадий. После формирования некроза развивается нейтрофильная инфильтрация, затем некротический материал удаляется макрофагами. На периферии очага формируется грануляционная ткань с пролиферацией капилляров и фибробластов, которая в дальнейшем замещается фиброзным рубцом. Эта последовательность имеет диагностическое значение при определении давности поражения.

Органоспецифические особенности определяют характер и распространённость повреждения. В миокарде некроз распространяется от субэндокардиальной области к эпикарду по принципу «волнового фронта». Для головного мозга важна концепция ишемической пенумбры — зоны ткани со сниженным кровотоком, которая потенциально может сохранять структурную жизнеспособность при своевременной реперфузии. В почках высокой

чувствительностью к ишемии характеризуется мозговое вещество, а в кишечнике ранние изменения преимущественно начинаются в области верхушек ворсинок.

Заключение. Ишемическое повреждение представляет собой многоэтапный патологический процесс, в основе которого лежат энергетический дефицит, нарушение ионного гомеостаза, кальциевая перегрузка, митохондриальная дисфункция и повреждение клеточных мембран. Переход обратимых изменений в необратимые завершается некротической гибелью клеток и формированием инфаркта. Морфологический тип и последствия инфаркта определяются продолжительностью ишемии, особенностями сосудистого русла и структурой поражённого органа. Знание последовательности клеточных и тканевых изменений имеет важное значение для патологоанатомической диагностики, оценки давности повреждения и клинико-морфологической корреляции.

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THE ARTISTIC INTERPRETATION OF HISTORICAL FIGURES IN THE EPIC POEM "SADDI ISKANDARIY"

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Abstract

The article examines the artistic interpretation of historical figures in Alisher Navoi's poem "Saddi Iskandari". It analyzes the artistic representation of the image of Iskander, the relationship between historical reality and artistic fiction, as well as the moral and philosophical ideas conveyed through historical characters.

Keywords

Alisher Navoi, "Saddi Iskandari", Iskander, historical figure, artistic interpretation, historical reality, artistic fiction.

"SADDI ISKANDARIY" DOSTONIDA TARIXIY OBRAZLARNING BADIIY TALQINI

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Annotatsiya. Maqolada Alisher Navoiyning "Saddi Iskandariy" dostonida tarixiy obrazlarning badiiy talqini tahlil qilinadi. Iskandar obrazining tarixiy manbalardagi qiyofasi va dostondagi badiiy talqini qiyosiy o'rganilib, tarixiy haqiqat va badiiy to'qimaning o'zaro munosabati yoritiladi. Shuningdek, tarixiy obrazlar vositasida ilgari surilgan adolat, ma'rifat va ideal hukmdor haqidagi qarashlar ochib beriladi.

Kalit so'zlar: Alisher Navoiy, "Saddi Iskandariy", Iskandar, tarixiy obraz, badiiy talqin, tarixiy haqiqat, badiiy to'qima.

Аннотация. В статье рассматривается художественная интерпретация исторических образов в поэме Алишера Навои «Садди Искандари». Анализируются особенности художественного осмысления образа Искандера, соотношение исторической действительности и художественного вымысла, а также нравственно-философские идеи, раскрываемые посредством исторических персонажей.

Ключевые слова: Алишер Навои, «Садди Искандари», Искандер, исторический образ, художественная интерпретация, историческая действительность, художественный вымысел.

Kirish. Hazrat Alisher Navoiy ijodida tarixiy voqelik va badiiy tafakkur uyg‘unligi muhim o‘rin tutadi. Shoirning “Xamsa” tarkibidagi “Saddi Iskandariy” dostoni bu jihatdan alohida ahamiyatga ega bo‘lib, unda tarixiy manbalarda qayd etilgan voqea va shaxslar ijodkorning estetik qarashlari asosida qayta talqin qilingan. Asarda tarixiy obrazlarning real qiyofasi bilan bir qatorda, Navoiy ideal hukmdor, adolat, ilm-ma’rifat va insonparvarlik haqidagi qarashlarini ifodalovchi badiiy timsollar ham yaratilgan. Dostonda tarixiy obrazlar oddiy personajlar sifatida emas, balki muallifning falsafiy, axloqiy va siyosiy qarashlarini ifodalovchi badiiy xarakterlar sifatida yaratilgan. Navoiy uchun obrazning tarixiy manbaga bog‘liqligi muhim bosqich, biroq bundan ham muhimroq bosqichda obrazning asardagi g‘oyaviy-estetik vazifasidir. Shu sabab doston obrazlari tarixiylik, rivoyaviylik va ramziylikning o‘zaro tutashgan shaklida namoyon bo‘ladi.

Asardagi obrazlar tizimi markazida Iskandar turadi. Boshqa obrazlar ko‘pincha uning xarakterini ochish, ma’naviy yuksalish bosqichlarini ko‘rsatish yoki muayyan g‘oyaviy qarama-qarshilikni ifodalash uchun xizmat qiladi. Doro Iskandar bilan siyosiy-axloqiy kontrast hosil qiladi; Arastu hakim va boshqa hakimlar aql va hikmat timsoli

sifatida qahramonning ma’rifiy qiyofasini ochadi, Ravshanak obrazi lirik-insoniy qatlamni kuchaytiradi, Ya’juj-Ma’juj esa yovuzlik va tartibsizlik ramziga aylanadi.

Navoiy obraz yaratishda tarixiy dalilga to‘liq bog‘lanib qolmaydi. U tarixiy shaxs haqidagi ma’lumotni badiiy xarakterga aylantiradi. Bunda idealizatsiya, kontrast, ramziylashtirish, umumlashtirish va psixologik chuqurlashtirish usullari qo‘llanadi. Ayniqsa, Iskandar obrazida ideal hukmdor haqidagi Navoiyning qarashlari mujassam bo‘lgan. Bu obraz shoirning davlat va jamiyat, hukmdor va xalq, ilm va hokimiyat haqidagi estetik-falsafiy qarashlarini birlashtiradi.

Dostondagi obrazlar tarixiy voqelikni jonlantirish bilan birga, uni ma’naviy ma’noga ham ega qiladi. Agar voqealar syujetning tashqi harakatini tashkil etsa, obrazlar ushbu harakatlarning ichki mohiyatini ochadi. Shu bois “Saddi Iskandariy”dagi tarixiy obrazlarni faqat tarixiy prototiplar bilan qiyoslash yetarli emas, ularni badiiy tizimdagi vazifasi, xarakter belgisi va g‘oyaviy yuki asosida tahlil qilish zarur.

Iskandar dostondagi eng murakkab obrazdir. Tarixiy Aleksandr Makedonskiy qadimgi dunyoning buyuk sarkardasi sifatida tanilgan bo‘lsa, Navoiy talqinida Iskandar faqat harbiy fotih emas. U adolatli shoh, ilmga intilgan hukmdor, donishmandlar maslahatini qadrlovchi rahbar, xalqni himoya qiluvchi xaloskor va hayot mohiyatini anglashga intilgan inson sifatida ko‘rsatiladi.

Tadqiqotning maqsadi “Saddi Iskandariy” dostonida tarixiy obrazlarning badiiy talqinini aniqlash, ularning tarixiy manbalar bilan munosabatini yoritish hamda obrazlar orqali ifodalangan axloqiy, falsafiy va ijtimoiy qarashlarni tahlil qilishdan iborat. Ushbu maqsaddan kelib chiqib, dostondagi tarixiy obrazlarning badiiy funksiyasi, xarakter yaratish usullari, tarixiy haqiqat va badiiy to‘qimaning o‘zaro munosabati tadqiq etiladi. Tadqiqotda tarixiy-qiyosiy, tipologik, badiiy-estetik va matniy tahlil metodlaridan foydalaniladi.

Tadqiqot metodologiyasi. Tadqiqotning metodologik asosini Alisher Navoiyning “Saddi Iskandariy” dostonida tarixiy voqelikning badiiy qayta ishlanishi, tarixiy shaxslarning badiiy obrazga transformatsiyasi hamda ularning asar g‘oyaviy-estetik tizimidagi funksiyasini aniqlash tamoyillari tashkil etadi. Tadqiqotda tarixiylik va badiiylikning o‘zaro munosabati markaziy metodologik masala sifatida belgilanib, tarixiy prototip va badiiy obraz o‘rtasidagi munosabat kompleks yondashuv asosida tahlil qilinadi. Tadqiqotning metodologik yo‘nalishini belgilashda so‘nggi yillarda olib borilgan navoiyshunoslik tadqiqotlari muhim nazariy asos bo‘lib xizmat qiladi. Xususan, I. Ismoilov Nizomiy va Navoiy ijodidagi Iskandar mavzusini qiyosiy o‘rganar ekan, “Saddi Iskandariy”dagi ayrim syujet va obrazlarning tarixiy voqelikdan ko‘ra adabiy an’ana va oldingi iskandarnomalar bilan genetik aloqadorligini ko‘rsatadi. Olimning fikricha, Navoiy Iskandar mavzusini tayyor tarixiy material sifatida takrorlanmagan, balki uni o‘zining badiiy-estetik konsepsiyasiga muvofiq ravishda qayta shakllantirgan[1]

Shu nuqtayi nazardan, tadqiqotda tarixiy-qiyosiy metod asosiy usullardan biri sifatida qo‘llanildi. Mazkur metod orqali tarixiy shaxs haqidagi an’anaviy tasavvurlar bilan Navoiy yaratgan badiiy obraz o‘rtasidagi farqlar aniqlanadi. Ayniqsa, Iskandar obrazining tarixiy Aleksandr Makedonskiy qiyofasidan Sharq adabiyotidagi ideal hukmdor timsoliga aylanish jarayoni qiyosiy asosda o‘rganiladi. 2026-yilda X. Abduraimova tomonidan olib borilgan tadqiqotda ham Iskandar obrazining tarixiy

1 Ismoilov I.A. Nizomiy va Navoiy: bir mavzuning turfa talqini // *O‘zbekiston: til va madaniyat. Adabiyotshunoslik.* – 2023. – №1(2). – B. 18–32.

prototipdan Sharq adabiyotidagi komil inson va ideal shoh timsoliga transformatsiyasi alohida qayd etilgan[2].

Tadqiqotning badiiy-estetik tahlil metodi obrazlarning faqat tarixiy asosini aniqlash bilan cheklanmay, ularning badiiy matndagi funksiyasini ochib berishga qaratildi. Bunda obrazning xarakteri, xatti-harakati, nutqi, boshqa personajlar bilan munosabati, syujetdagi ishtiroki va muallif g‘oyasini ifodalashdagi vazifasi yaxlit holda o‘rganildi. I. Ismoilovning “Saddi Iskandariy” debochasi poetikasiga bag‘ishlangan tadqiqotida ham obrazlar tizimi, kompozitsiya va badiiy mazmunning o‘zaro aloqasi qiyosiy-tarixiy metod asosida tahlil qilingan[3]. Mazkur yondashuv asosida Iskandar obrazi tarixiy shaxsning oddiy badiiy nusxasi sifatida emas, balki Navoiyning adolat, ilm, hikmat va davlat boshqaruvi haqidagi qarashlarini mujassamlashtiruvchi konseptual obraz sifatida baholanadi. Zamonaviy tadqiqotlarda ham Iskandar timsolining “adolatparvar”, “ilmparvar” va “xalqparvar” hukmdor sifatida shakllantirilishi uning tarixiy qiyofasidan ko‘ra Navoiyning ideal hukmdor haqidagi qarashlari bilan chambarchas bog‘liqligi ta’kidlanmoqda.

Tadqiqotda tipologik metod ham qo‘llanilib, doston obrazlari yagona badiiy tizim sifatida o‘rganildi. Iskandar, Doro, Arastu, Ravshanak hamda Ya’juj-Ma’juj obrazlari o‘zaro qiyoslanib, ularning har biri qanday g‘oyaviy-estetik vazifani bajarishi aniqlanadi. Bunda obrazlar o‘rtasidagi o‘xshashlik va qarama-qarshiliklar orqali Navoiyning hukmdorlik, adolat, ilm-ma’rifat, insoniylik va tartib haqidagi qarashlari ochib beriladi.

Strukturaviy-funksional metod orqali tarixiy obrazlarning doston syujeti va kompozitsiyasidagi o‘rni aniqlandi. Mazkur metod obrazni faqat voqea ishtirokchisi

2Abduraimova X. Alisher Navoiyning ishqiy dostonlarida Iskandar obrazi. – *Adabiy Meros*, 2026. DOI: 10.67822/tbc70443.

3 Ismoilov I. Alisher Navoiyning “Saddi Iskandariy” dostoni debochasi badiiyati // *Oltin bitiglar – Golden Scripts*. – 2021/2023. DOI: 10.52773/tsuull.gold.2021.1/PXKA6837.

sifatida emas, balki asarning yaxlit g‘oyaviy tuzilmasida muayyan funksiyani bajaruvchi badiiy birlik sifatida baholash imkonini beradi. Shu asosda Doro obrazi Iskandar xarakterini kontrast asosida ochuvchi, Arastu obrazi ilm va hikmat konsepsiyasini kuchaytiruvchi, Ravshanak obrazi insoniy-lirik qatlamni boyituvchi, Ya’juj-Ma’juj obrazlari esa tartib va betartiblik o‘rtasidagi ziddiyatni ifodalovchi badiiy komponentlar sifatida tahlil qilinadi.

Tadqiqotning yana bir muhim yo‘nalishi germenevtik yondashuv bilan bog‘liq. Mazkur yondashuv tarixiy obrazlarning mazmunini faqat matn doirasida emas, balki ularni yuzaga keltirgan tarixiy-madaniy va adabiy muhit bilan bog‘liq holda talqin qilish imkonini beradi. Iskandar mavzusining Sharq adabiyotidagi uzoq davom etgan an’anasi, xususan, Firdavsiy, Nizomiy, Xusrav Dehlaviy va Jomiy ijodidagi talqinlari Navoiy badiiy konsepsiyasini anglash uchun muhim kontekst hisoblanadi. Zamonaviy tadqiqotlarda ham “Saddi Iskandariy”dagi Iskandar obrazi avvalgi iskandarnoma an’analarining davomi sifatida emas, balki ularni yangi g‘oyaviy-falsafiy bosqichga olib chiqqan badiiy hodisa sifatida baholanmoqda.

Shuningdek, tadqiqotda matniy tahlil usulidan foydalanilib, tarixiy obrazlarning bevosita doston matnidagi ifodasi asosiy manba sifatida olindi. Obrazlarning nutqi, muallif tavsifi, dialog va monologlari, xatti-harakatlari hamda boshqa personajlar bilan munosabati tahlil qilinib, ularning g‘oyaviy mazmuni aniqlanadi. Bu yondashuv tarixiy obraz haqidagi umumiy nazariy xulosalarni bevosita badiiy matn bilan asoslash imkonini beradi.

Tadqiqotda tarixiylik va badiiylik birligi tamoyiliga alohida e’tibor qaratildi. Chunki “Saddi Iskandariy”dagi tarixiy obrazlarni faqat tarixiy manbalar bilan qiyoslash ularning badiiy tabiatini to‘liq ochib bermaydi. Zamonaviy tadqiqotlarda ham Iskandar obrazining tarixiy haqiqat va badiiy to‘qima uyg‘unligida shakllangani qayd etilib,

uning adolatli, ma’rifatparvar va donishmand hukmdor sifatida tasvirlanishi Navoiy estetik qarashlari bilan bog‘lanadi.

Shu bilan birga, tadqiqotda qiyosiy-tipologik va kontekstual yondashuvlar o‘zaro uyg‘unlashtirildi. Chunki Iskandar obrazining badiiy mohiyatini faqat “Saddi Iskandariy” doirasida emas, balki Sharq adabiyotidagi Iskandar mavzusining umumiy taraqqiyoti kontekstida o‘rganish zarur. 2023-yilda I. Ismoilov tomonidan amalga oshirilgan tadqiqotda Nizomiy va Navoiy dostonlaridagi Iskandar mavzusi qiyosiy-tarixiy, madaniy-tarixiy va genetik metodlar asosida o‘rganilib, Navoiy talqinining o‘ziga xosligi ko‘rsatilgan.

Umuman, tadqiqot metodologiyasi tarixiy manba, adabiy an’ana va badiiy matnning o‘zaro munosabatini bir butun tizim sifatida ko‘rib chiqishga asoslanadi. Bunday yondashuv orqali tarixiy obrazning real prototipi, adabiy an’ana asosidagi shakllanishi va muallifning ijodiy talqini o‘rtasidagi farqlar aniqlanadi. Natijada “Saddi Iskandariy”dagi tarixiy obrazlar nafaqat tarixiy shaxslarning badiiy tasviri, balki Alisher Navoiyning adolatli hukmdor, ilm va hikmat, insoniy kamolot hamda jamiyatdagi tartib haqidagi falsafiy-estetik qarashlarini ifodalovchi murakkab badiiy tizim sifatida talqin qilinadi.

NATIJALAR VA MUHOKAMA. Tahlil natijalari “Saddi Iskandariy” dostonidagi tarixiy obrazlar oddiy tarixiy rekonstruksiya emas, balki ko‘p bosqichli badiiy transformatsiya mahsuli ekanini ko‘rsatadi. Ushbu jarayonni shartli ravishda uch bosqichda ifodalash mumkin: tarixiy prototip, adabiy an’ana, mualliflik konsepsiyasi. Ana shu model orqali tarixiy shaxs real biografik xususiyatlaridan uzoqlashib, Navoiyning axloqiy-falsafiy qarashlarini ifodalovchi konseptual timsolga aylanadi. Shu jihat tadqiqotning asosiy ilmiy natijalaridan biri sifatida qaraladi.

Iskandar obrazi mazkur transformatsiyaning markaziy nuqtasini tashkil etadi. Dostonda uning badiiy qimmati zabt etilgan hududlar yoki harbiy muvaffaqiyatlar bilan

emas, balki hukmdorlikning ma’naviy mezonlari bilan belgilanadi. Ya’ni obrazning semantik markazi “fotih” tushunchasidan “mas’ul hukmdor” konsepsiyasiga ko‘chadi. Bu o‘zgarish Iskandar qiyofasining tarixiylikdan badiiy-falsafiylik tomon siljishini ko‘rsatadi. I.Ismoilov qayd etganidek, Navoiy Iskandar mavzusini tayyor adabiy qolip sifatida takrorlamaydi, balki uni o‘z estetik qarashlariga muvofiq qayta tashkil etadi[4].

Muhim natijalardan yana biri shundaki, Iskandar obrazi dostonda yakka holda emas, balki boshqa personajlar bilan shakllanadigan semantik aloqalar tizimida ochiladi. Arastu bilan munosabatda hukmdorlikning intellektual modeli, Doro bilan qarama-qarshilikda siyosiy va axloqiy mezonlar, Ravshanak bilan bog‘liq epizodlarda esa insoniy-emotsional qirralar faollashadi. Demak, Iskandar obrazining mukammalligi uning individual xarakteristikasidan ko‘ra, obrazlar tizimi ichidagi funksional munosabatlar orqali shakllantiriladi.

Arastu obrazining vazifasi aynan shu nuqtada alohida ahamiyat kasb etadi. U tarixiy faylasufning badiiy portretidan ko‘ra, hukmdorlikni bilim va tafakkur bilan muvozanatlashtiruvchi ramziy figuraga aylanadi. Shu orqali dostonning siyosiy-falsafiy modelida hokimiyatning legitimligi kuch bilan emas, aql, maslahat va hikmat bilan bog‘lanadi. Bu jihat Iskandar obrazining “ideal shoh” sifatidagi talqinini yanada chuqurlashtiradi. Doro obrazi esa mustaqil tarixiy obraz bo‘lish bilan birga, Iskandar qiyofasining baholovchi fonini hosil qiladi. Uning asardagi funksiyasi konfliktni yuzaga keltirishdan ko‘ra kengroq: Doro orqali hukmdorlikning boshqa modeli ko‘rsatiladi va shu asosda Iskandar faoliyatining axloqiy-siyosiy xususiyatlari aniqlashadi. Shunday qilib, Navoiy obrazlararo kontrastdan faqat dramatik to‘qnashuv yaratish uchun emas, balki hukmdorlik mezonlarini qiyosiy tarzda ochish uchun foydalanadi.

4Ismoilov I.A. Nizomiy va Navoiy: bir mavzuning turfa talqini // *O‘zbekiston: til va madaniyat. Adabiyotshunoslik*. – 2023. – №1(2). – B. 18–32.

Ravshanak obrazi dostondagi tarixiy-falsafiy qatlamni shaxsiy va emotsional mazmun bilan muvozanatlashtiradi. Uning ishtiroki tarixiy jarayonni faqat davlatlararo kurash yoki siyosiy munosabat sifatida ko‘rishning oldini oladi. Bu obraz orqali tarixiy voqelikning inson taqdiriga ta’siri yoritiladi. Natijada dostonning badiiy dunyosida “tarix” va “inson” o‘rtasidagi munosabat yanada sezilarli tus oladi.

Ya’juj-Ma’juj bilan bog‘liq epizodlar esa dostonning tarixiylik doirasini kengaytirib, uni mifopoetik va ramziy qatlam bilan boyitadi. Mazkur obrazlar bevosita tarixiy prototipga ega bo‘lmasa-da, asarda ijtimoiy tartibga tahdid soluvchi kuchlarning umumlashtirilgan timsoli sifatida namoyon bo‘ladi. Iskandarning devor qurdirishi esa oddiy sarguzasht motividan ko‘ra kengroq ma’noga ega bo‘lib, hukmdorning himoya, mas’uliyat va tartibni saqlash funksiyasini ifodalaydi. Shu jihatdan devor motivi siyosiy-huquqiy ramz darajasiga ko‘tariladi.

Tadqiqot davomida yana bir muhim holat aniqlandi: dostondagi tarixiy obrazlarning badiiy qiymati ularning real prototipga qanchalik mosligi bilan emas, balki muallif g‘oyaviy tizimida qanday funksiya bajarishi bilan belgilanadi. Bu esa “Saddi Iskandariy”ni faqat tarixiy shaxslar haqidagi epik asar emas, balki hokimiyat, adolat, ilm, axloq va jamiyat masalalarini konseptual darajada yorituvchi falsafiy-badiiy model sifatida talqin qilish imkonini beradi.

Shu nuqtai nazardan, obrazlar tizimini quyidagi funksional model asosida umumlashtirish mumkin:

Obraz	**Yetakchi semantik vazifa**	**Konseptual mazmun**
Iskandar	Markaziy hukmdor timsoli	Adolat, mas’uliyat, davlat boshqaruvi
Arastu	Intellektual tayanch	Ilm, tafakkur, maslahat
Doro	Kontrastiv figura	Hokimiyatning muqobil modeli
Ravshanak	Emotsional-insoniy qatlam	Shaxsiy taqdir, insoniylik
Ya’juj-Ma’juj	Ramziy xavf modeli	Betartiblik, tahdid, himoya

Mazkur jadvaldan ko‘rinadiki, obrazlar alohida-alohida emas, balki yagona semantik tizim doirasida faoliyat ko‘rsatadi. Iskandar markaziy figuraga aylangan bo‘lsa-da, uning mazmuniy salmog‘i boshqa personajlar bilan o‘zaro munosabatda to‘liq namoyon bo‘ladi. Bu holat dostondagi obrazlar tizimining ierarxik emas, funksional-komplementar xarakterga ega ekanini ko‘rsatadi.

Natijada “Saddi Iskandariy”da tarixiy shaxslarni badiiy qayta ishlashning uch asosiy mexanizmi aniqlanadi: Selektivlik, ya’ni tarixiy shaxsning barcha xususiyatlari emas, muallif konsepsiyasiga xizmat qiladigan jihatlar tanlanadi. Semantik qayta kodlash, bunda tarixiy figura yangi axloqiy-falsafiy ma’no bilan boyitiladi. Funksional integratsiya, ya’ni obraz syujet ichida mustaqil shaxs bo‘lish bilan birga, umumiy g‘oyaviy tizimning tarkibiy qismiga aylanadi. Tadqiqot jarayonida “Saddi Iskandariy”dagi tarixiy obrazlarni faqat tarixiy prototip va badiiy obraz munosabati doirasida emas, balki ularning qanday qilib muallifning konseptual tafakkur tizimiga aylantirilganini ko‘rsatadi. Ilmiy yangilik aynan shunda namoyon bo‘ladi: tarixiy obrazlarning badiiy tabiati prototipga moslik darajasi bilan emas, balki semantik transformatsiya va funksional yuklama orqali izohlanadi. Bu esa Navoiy poetikasida tarixiylik va badiiylikning o‘zaro munosabatini yanada aniqroq tushuntirish imkonini beradi.

XULOSA. “Saddi Iskandariy” dostonidagi tarixiy obrazlarning tadqiqi Alisher Navoiy tarixiy materialdan foydalanishda faktografik bayondan ko‘ra badiiy konsepsiyani ustuvor qo‘yganini ko‘rsatadi. Tarixiy shaxs doston strukturasiga kirishi bilan o‘zining dastlabki tarixiy-biografik chegarasidan chiqib, muallif tomonidan belgilangan estetik va falsafiy vazifani bajaruvchi adabiy hodisaga aylanadi.

Tadqiqotdan kelib chiqadigan muhim xulosa shuki, dostonda tarixiy shaxs va badiiy obraz o‘rtasida to‘g‘ridan-to‘g‘ri muvofiqlik mavjud emas. Navoiy tarixiy shaxsning tarjimayi holini tiklashni maqsad qilmaydi. Uning shaxsiyati bilan bog‘liq

materialdan muayyan axloqiy, siyosiy va falsafiy masalalarni badiiy talqin qilish uchun foydalanadi. Shu sababli asardagi tarixiy obrazlarni baholashda “tarixiy haqiqatga qanchalik mos?” degan savoldan tashqari, “tarixiy material qanday yangi badiiy mazmun kasb etgan?” degan masala ham asosiy mezon bo‘lishi lozim.

Tahlillar Navoiy tarixiy obraz yaratishda **tanlash, qayta ma’nolantirish va badiiy konsepsiyaga bo‘ysundirish** tamoyillaridan foydalanganini ko‘rsatadi. Bu jarayonda tarixiy fakt o‘z qiymatini yo‘qotmaydi, biroq uning vazifasi o‘zgaradi: fakt badiiy g‘oyani asoslovchi materialga, tarixiy shaxs esa muayyan konsepsiyani tashuvchi obrazga aylanadi.

Shuningdek, dostonda tarixiy va adabiy xotira o‘rtasidagi munosabatning o‘ziga xos modeli kuzatiladi. Navoiy o‘zidan oldingi iskandarnoma an’anasini inkor etmaydi, ayni paytda mavjud talqinlarga to‘liq qaram bo‘lib ham qolmaydi. Natijada tarixiy manba va adabiy an’ana muallifning ijodiy tafakkurida qayta ishlanib, yangi mazmundagi badiiy voqelikka aylantiriladi. Bu xususiyat “Saddi Iskandariy”ning Sharq iskandarnomachiligi taraqqiyotidagi o‘ziga xos o‘rnini belgilashda muhim mezon bo‘la oladi. Tadqiqot natijalari tarixiy obrazni o‘rganishda uning prototipini aniqlashning o‘zi yetarli emasligini ham ko‘rsatadi. Obrazning poetik tabiatini anglash uchun tarixiy manba, adabiy an’ana, muallif pozitsiyasi va matndagi funksiyani o‘zaro bog‘liq holda tadqiq etish talab qilinadi. Mazkur yondashuv Navoiy asarlaridagi boshqa tarixiy shaxslarning badiiy transformatsiyasini o‘rganishda ham metodologik asos sifatida qo‘llanishi mumkin.

Shunday qilib, “Saddi Iskandariy” tarixiy voqelikni badiiy shaklda aks ettiruvchi asargina emas, balki **tarixiy xotirani mualliflik konsepsiyasi asosida qayta yaratadigan adabiy model** sifatida namoyon bo‘ladi. Dostonning tarixiy obrazlar tizimini aynan shu nuqtayi nazardan tadqiq etish Navoiy poetikasida tarixiylikning

funksiyasi, badiiy to‘qimaning chegaralari hamda tarixiy shaxsning adabiy timsolga aylanish qonuniyatlarini yanada chuqurroq ochishga imkon beradi.

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TECHNOLOGY FOR USING COMBINATORIAL TASKS IN DEVELOPING THE METHODOLOGICAL COMPETENCE OF FUTURE MATHEMATICS TEACHERS

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Abstract

This thesis analyzes the pedagogical potential of a technology for using combinatorial tasks to develop the methodological competence of future mathematics teachers. In modern mathematics education, teachers are required not only to possess a deep understanding of mathematical knowledge but also to have the skills to effectively organize the learning process, explain mathematical concepts, create problem-based situations, and develop students' logical thinking.

The thesis highlights the role of combinatorial tasks in improving the methodological training of future mathematics teachers. Combinatorial problems provide opportunities to encourage students to search for different solution methods, analyze mathematical situations, draw logical conclusions, and apply effective methodological approaches in the educational process. The study also examines the key aspects of a technology involving the gradual implementation of a system of combinatorial tasks, their selection according to educational objectives, and their application in pedagogical practice.

The use of combinatorial tasks contributes to the development of future mathematics teachers' competencies in methodological design, guiding students toward solving non-standard problems, developing mathematical thinking, and improving lesson effectiveness. As a result, the professional and methodological training of future teachers is enhanced, expanding their opportunities to conduct pedagogical activities in accordance with the requirements of modern mathematics education.

Keywords

combinatorial tasks, future mathematics teacher, methodological competence, mathematical thinking, educational technology, problem-based learning, professional training, methodological approach.

BO‘LAJAK MATEMATIKA FANI O‘QITUVCHILARINING METODIK KOMPETENTLIGINI RIVOJLANTIRISHDA KOMBINATORIK TOPSHIRIQLARDAN FOYDALANISH TEXNOLOGIYASI

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Annotatsiya

Ushbu tezisda bo‘lajak matematika fani o‘qituvchilarining metodik kompetentligini rivojlantirishda kombinatorik topshiriqlardan foydalanish texnologiyasining pedagogik imkoniyatlari tahlil qilinadi. Zamonaviy matematika ta’limida o‘qituvchidan nafaqat matematik bilimlarni chuqur egallash, balki o‘quv jarayonini samarali tashkil etish, matematik tushunchalarni tushuntirish, muammoli vaziyatlarni yaratish va o‘quvchilarning mantiqiy fikrlash faoliyatini rivojlantirish ko‘nikmalariga ega bo‘lish talab etiladi.

Tezisda kombinatorik topshiriqlarning bo‘lajak matematika o‘qituvchilarining metodik tayyorgarligini oshirishdagi o‘rni yoritiladi. Kombinatorik masalalar orqali talabalarni turli yechim usullarini izlashga, matematik vaziyatlarni tahlil qilishga, mantiqiy xulosalar chiqarishga hamda o‘quv jarayonida samarali metodik yondashuvlarni qo‘llashga yo‘naltirish imkoniyatlari asoslab beriladi. Shuningdek, kombinatorik topshiriqlar tizimini bosqichma-bosqich qo‘llash, ularni ta’lim maqsadlariga mos tanlash va pedagogik faoliyatda foydalanish texnologiyasining asosiy jihatlari ko‘rib chiqiladi.

Kombinatorik topshiriqlardan foydalanish bo‘lajak matematika o‘qituvchilarida metodik loyihalash, nostandart masalalarni yechishga yo‘naltirish, o‘quvchilarning matematik tafakkurini rivojlantirish va dars samaradorligini oshirish kompetensiyalarini shakllantirishga xizmat qiladi. Natijada bo‘lajak o‘qituvchilarning kasbiy-metodik tayyorgarligi takomillashib, zamonaviy matematika ta’limi talablariga mos pedagogik faoliyat olib borish imkoniyatlari kengayadi.

Kalit so‘zlar: kombinatorik topshiriqlar, bo‘lajak matematika o‘qituvchisi, metodik kompetentlik, matematik tafakkur, ta’lim texnologiyasi, muammoli ta’lim, kasbiy tayyorgarlik, metodik yondashuv.

KIRISH

Bugungi kunda oliy ta’lim tizimida bo‘lajak matematika fani o‘qituvchilarini tayyorlash jarayonida ularning nafaqat matematik bilimlarini, balki kasbiy-metodik kompetentligini rivojlantirish muhim vazifalardan biri hisoblanadi. Chunki zamonaviy o‘qituvchi fan mazmunini chuqur bilish bilan birga, uni samarali tushuntirish, ta’lim jarayonini loyihalash, o‘quvchilarning matematik tafakkurini rivojlantirish va innovatsion pedagogik texnologiyalardan foydalanish ko‘nikmalariga ega bo‘lishi zarur.

Matematika ta’limida o‘quvchilarning mantiqiy, analitik va ijodiy fikrlash qobiliyatlarini shakllantirish muhim ahamiyatga ega. Bu jarayonda kombinatorik topshiriqlar alohida pedagogik imkoniyatlarga ega bo‘lib, ular orqali turli variantlarni tahlil qilish, muqobil yechimlarni izlash, matematik modellashtirish va muammoli vaziyatlarni hal etish ko‘nikmalarini rivojlantirish mumkin. Shu sababli kombinatorik topshiriqlardan foydalanish bo‘lajak matematika o‘qituvchilarining metodik kompetentligini shakllantirishning samarali vositalaridan biri sifatida qaraladi.

Metodik kompetentlik o‘qituvchining o‘quv jarayonini ilmiy asosda tashkil etish, ta’lim maqsadlariga mos metod va vositalarni tanlash, o‘quvchilarning individual xususiyatlarini hisobga olish hamda fan mazmunini samarali yetkazib berish qobiliyatini

ifodalaydi. Ushbu kompetentlikni rivojlantirishda kombinatorik topshiriqlar bilan ishlash jarayoni muhim o‘rin tutadi. Chunki bunday topshiriqlar bo‘lajak o‘qituvchini faqat masalani yechishga emas, balki uning metodik qiymatini tahlil qilishga, dars jarayonida qo‘llash usullarini ishlab chiqishga va o‘quvchilarning fikrlash faoliyatini boshqarishga o‘rgatadi.

Kombinatorik topshiriqlardan foydalanish texnologiyasi bo‘lajak matematika o‘qituvchilarining kasbiy tayyorgarligini takomillashtirishga xizmat qiladi. Mazkur texnologiya topshiriqlarni tanlash, ularni murakkablik darajasiga ko‘ra tizimlashtirish, yechish strategiyalarini ishlab chiqish, metodik tahlil qilish va ta’lim jarayoniga tatbiq etish bosqichlarini o‘z ichiga oladi.

Mavzuning dolzarbligi shundaki, zamonaviy matematika ta’limida o‘quvchilarda tayyor formulalarni qo‘llash emas, balki mustaqil fikrlash, muammoli vaziyatlarda to‘g‘ri qaror qabul qilish va ijodiy yondashuvni shakllantirish talab etilmoqda. Bunday vazifalarni amalga oshirish uchun bo‘lajak matematika o‘qituvchilari yuqori darajadagi metodik tayyorgarlikka ega bo‘lishlari lozim.

Ushbu tezisning maqsadi bo‘lajak matematika fani o‘qituvchilarining metodik kompetentligini rivojlantirishda kombinatorik topshiriqlardan foydalanish texnologiyasining pedagogik imkoniyatlarini yoritish va uning samaradorligini asoslashdan iborat.

ASOSIY QISM

Bo‘lajak matematika fani o‘qituvchilarining metodik kompetentligini rivojlantirishda kombinatorik topshiriqlardan foydalanish ta’lim jarayonini mazmunan boyitish va talabalarni kasbiy faoliyatga tayyorlashning samarali vositalaridan biri hisoblanadi. Kombinatorik topshiriqlar o‘zining mazmuni jihatidan o‘quvchini tayyor algoritmni qo‘llashdan ko‘ra, vaziyatni tahlil qilish, mavjud imkoniyatlarni aniqlash, turli yechim yo‘llarini izlash va asoslangan xulosa chiqarishga yo‘naltiradi.

Bo‘lajak matematika o‘qituvchisi uchun kombinatorik topshiriqlar bilan ishlash ikki tomonlama ahamiyatga ega. Bir tomondan, ular talabaning shaxsiy matematik tafakkurini rivojlantirsa, ikkinchi tomondan, kelajakdagi pedagogik faoliyatida o‘quvchilarga matematik fikrlashni o‘rgatish metodikasini shakllantiradi. Shu sababli kombinatorik topshiriqlarni faqat matematik masalalar majmuasi sifatida emas, balki metodik kompetentlikni rivojlantiruvchi pedagogik vosita sifatida qarash lozim.

Kombinatorik topshiriqlardan foydalanish texnologiyasi bir necha bosqich asosida tashkil etilishi mumkin. Birinchi bosqichda talabalar kombinatorikaning asosiy tushunchalari, jumladan, o‘rin almashtirish, o‘rinlashtirish, guruhlash, sanash tamoyillari va ularning amaliy qo‘llanilishi bilan tanishadilar. Ushbu bosqichda asosiy maqsad talabalarda kombinatorik fikrlashning dastlabki elementlarini shakllantirishdan iborat.

Ikkinchi bosqichda murakkablik darajasi ortib boruvchi kombinatorik topshiriqlar tizimi qo‘llaniladi. Bunda talabalar masalaning shartini tahlil qilish, yechim strategiyasini tanlash va turli usullarni taqqoslash ko‘nikmalarini rivojlantiradilar. Ayniqsa, bir masalani bir nechta usulda yechish imkoniyatlarini izlash talabalarning ijodiy va analitik fikrlash qobiliyatlarini oshiradi.

Uchinchi bosqich metodik faoliyat bilan bog‘liq bo‘lib, bunda talabalar kombinatorik topshiriqlarni o‘quv jarayonida qo‘llash usullarini ishlab chiqadilar. Ya’ni ular ma’lum bir mavzu uchun mos topshiriqlar tanlash, ularning murakkablik darajasini aniqlash, o‘quvchilarning yosh xususiyatlariga moslashtirish va dars jarayoniga samarali integratsiya qilish ko‘nikmalarini egallaydilar. Bu jarayon bo‘lajak o‘qituvchilarning metodik kompetentligini shakllantirishda muhim ahamiyatga ega.

Kombinatorik topshiriqlar asosida ishlash jarayonida quyidagi metodik ko‘nikmalar rivojlanadi:

o‘quv materialini tahlil qilish ko‘nikmasi — matematik mazmunni ajratish va uni tushuntirish usullarini belgilash;

ta’lim topshiriqlarini loyihalash qobiliyati — o‘quvchilarning bilim darajasiga mos masalalar tizimini yaratish;

muammoli vaziyatlarni tashkil etish mahorati — o‘quvchilarning mustaqil fikrlashini rag‘batlantirish;

baholash va tahlil qilish kompetensiyasi — o‘quvchilarning yechim jarayonini kuzatish va xatolarni aniqlash.

Kombinatorik topshiriqlardan foydalanishda interfaol metodlar ham samarali natija beradi. Xususan, muammoli ta’lim, guruhli ishlash, munozara, loyiha metodi va raqamli vositalardan foydalanish talabalarni faol fikrlashga undaydi. Bunday yondashuv nafaqat matematik bilimlarni mustahkamlaydi, balki bo‘lajak o‘qituvchilarning pedagogik faoliyatga tayyorgarligini ham oshiradi.

Shuningdek, kombinatorik topshiriqlar bo‘lajak matematika o‘qituvchilarida dars jarayonini kreativ tashkil etish imkonini beradi. O‘qituvchi kelajakda o‘quvchilarga nafaqat masala yechish usullarini, balki masalaga turli nuqtayi nazardan qarash, muqobil yechimlarni izlash va mustaqil xulosa chiqarish ko‘nikmalarini ham shakllantirishi kerak. Bu esa metodik kompetentlikning asosiy ko‘rsatkichlaridan biridir.

Demak, kombinatorik topshiriqlardan foydalanish texnologiyasi bo‘lajak matematika o‘qituvchilarining matematik tayyorgarligi bilan bir qatorda ularning metodik mahoratini rivojlantirishga xizmat qiladi. Mazkur texnologiya orqali talabalar kelajakdagi pedagogik faoliyat uchun zarur bo‘lgan tahliliy, ijodiy va metodik kompetensiyalarni egallaydilar.

OMBINATORIK TOPSHIRIQLARDAN FOYDALANISH TEXNOLOGIYASINING SAMARADORLIGINI OSHIRISH YO‘LLARI

Bo‘lajak matematika fani o‘qituvchilarining metodik kompetentligini rivojlantirishda kombinatorik topshiriqlardan samarali foydalanish uchun ta’lim jarayonini maqsadli va tizimli tashkil etish zarur. Kombinatorik topshiriqlarni shunchaki masalalar to‘plami sifatida emas, balki matematik fikrlashni rivojlantiruvchi va kelajakdagi pedagogik faoliyatga tayyorlovchi metodik vosita sifatida qo‘llash muhimdir.

Kombinatorik topshiriqlardan foydalanish samaradorligini oshirishning birinchi sharti — topshiriqlar tizimini pedagogik maqsadga muvofiq tanlash hisoblanadi. Bunda topshiriqlar oddiydan murakkabga tamoyili asosida tuzilishi, talabalarning mavjud bilim va ko‘nikmalariga mos kelishi hamda ularni yangi fikrlash usullarini izlashga undashi kerak. Oddiy kombinatorik mashqlardan boshlab, keyinchalik nostandart va ijodiy yondashuv talab qiluvchi masalalarga o‘tish talabalarning metodik tayyorgarligini bosqichma-bosqich rivojlantiradi.

Ikkinchi shart — kombinatorik topshiriqlarni metodik tahlil qilish ko‘nikmasini shakllantirishdir. Bo‘lajak o‘qituvchi masalani faqat yechishni emas, balki uning ta’limiy imkoniyatlarini ham baholay olishi kerak. Ya’ni topshiriqning qaysi matematik kompetensiyalarni rivojlantirishi, qaysi mavzular bilan bog‘liqligi, o‘quvchilarda qanday fikrlash jarayonlarini shakllantirishi tahlil qilinadi. Bu jarayon talabalarning pedagogik fikrlash qobiliyatini rivojlantiradi.

Uchinchi yo‘nalish — muammoli va tadqiqot xarakteridagi topshiriqlardan foydalanish. Bunday topshiriqlar talabalarni tayyor formulalarni qo‘llashdan ko‘ra, mustaqil izlanishga, taxminlar ilgari surishga va turli yechimlarni tekshirishga yo‘naltiradi. Natijada bo‘lajak o‘qituvchilarda o‘quvchilarning ijodiy fikrlashini rivojlantirishga xizmat qiluvchi metodik tajriba shakllanadi.

To‘rtinchi yo‘nalish — raqamli ta’lim vositalaridan foydalanish. Zamonaviy matematik dasturlar va interaktiv platformalar yordamida kombinatorik jarayonlarni

vizual namoyish qilish, turli variantlarni modellashtirish va yechimlarni tekshirish imkoniyati kengayadi. Bu esa talabalar uchun murakkab kombinatorik tushunchalarni chuqurroq anglash va kelajakda raqamli vositalardan pedagogik maqsadda foydalanish ko‘nikmasini shakllantiradi.

Beshinchi yo‘nalish — refleksiv faoliyatni tashkil etish. Talabalar yechilgan kombinatorik topshiriqlar asosida o‘z faoliyatlarini tahlil qilishlari, qaysi usul samaraliroq ekanini aniqlashlari va kelajakdagi dars jarayonida undan qanday foydalanish mumkinligini baholashlari kerak. Refleksiya metodik kompetentlikning muhim tarkibiy qismi bo‘lib, o‘qituvchining o‘z faoliyatini takomillashtirish imkonini beradi.

Kombinatorik topshiriqlardan foydalanish texnologiyasining samaradorligini baholashda quyidagi mezonlarga e’tibor qaratish mumkin:

motivatsion mezon — talabaning matematik masalalarni yechishga va metodik faoliyatga qiziqishi;

bilish mezoni — kombinatorik tushunchalar va yechish usullarini egallash darajasi;

faoliyat mezoni — kombinatorik topshiriqlarni tanlash, tahlil qilish va ta’lim jarayonida qo‘llay olish qobiliyati;

ijodiy mezon — yangi topshiriqlar tuzish va nostandart yechimlarni ishlab chiqish ko‘nikmasi.

Shunday qilib, kombinatorik topshiriqlardan foydalanish texnologiyasi bo‘lajak matematika o‘qituvchilarining metodik kompetentligini rivojlantirishda kompleks pedagogik vosita sifatida namoyon bo‘ladi. Mazkur texnologiya orqali talabalar matematik bilimlarini mustahkamlash bilan birga, kelajakdagi kasbiy faoliyatida zarur bo‘lgan dars loyihalash, o‘quvchilar tafakkurini rivojlantirish va innovatsion metodlardan foydalanish kompetensiyalarini shakllantiradilar.

XULOSA

Bo‘lajak matematika fani o‘qituvchilarining metodik kompetentligini rivojlantirishda kombinatorik topshiriqlardan foydalanish texnologiyasi zamonaviy matematika ta’limining muhim yo‘nalishlaridan biri hisoblanadi. Chunki o‘qituvchining kasbiy faoliyatida nafaqat matematik bilimlarni egallash, balki ularni samarali yetkazib berish, o‘quvchilarning mantiqiy va ijodiy fikrlashini rivojlantirishga yo‘naltirilgan metodik yondashuvlarni qo‘llay olish qobiliyati ham muhim ahamiyat kasb etadi.

Tahlillar shuni ko‘rsatadiki, kombinatorik topshiriqlar bo‘lajak matematika o‘qituvchilarining matematik tafakkurini rivojlantirish bilan bir qatorda, ularning metodik tayyorgarligini shakllantirish uchun ham samarali vosita hisoblanadi. Bunday topshiriqlar talabalarni turli yechim strategiyalarini izlashga, matematik vaziyatlarni tahlil qilishga, muqobil usullarni taqqoslashga va o‘z fikrlarini asoslashga o‘rgatadi.

Kombinatorik topshiriqlardan foydalanish texnologiyasi asosida tashkil etilgan ta’lim jarayoni bo‘lajak o‘qituvchilarda darsni loyihalash, o‘quv topshiriqlarini tanlash, matematik mazmunni metodik jihatdan tahlil qilish va o‘quvchilarning fikrlash faoliyatini boshqarish ko‘nikmalarini rivojlantiradi. Ayniqsa, kombinatorik masalalarni pedagogik nuqtayi nazardan tahlil qilish kelajakdagi o‘qituvchining kasbiy-metodik kompetentligini oshirishga xizmat qiladi.

Shuningdek, kombinatorik topshiriqlar asosida muammoli ta’lim, tadqiqot faoliyati, interfaol metodlar va raqamli texnologiyalardan foydalanish bo‘lajak matematika o‘qituvchilarining innovatsion pedagogik faoliyatga tayyorgarligini kuchaytiradi. Bunday yondashuv talabalarni nafaqat masalalarni yechishga, balki ularni ta’lim jarayonida samarali qo‘llashga ham tayyorlaydi.

Xulosa qilib aytganda, bo‘lajak matematika fani o‘qituvchilarining metodik kompetentligini rivojlantirishda kombinatorik topshiriqlardan foydalanish texnologiyasi matematik bilim, metodik mahorat va pedagogik tafakkurni yagona tizimda shakllantirish imkonini beradi. Mazkur texnologiyadan samarali foydalanish

kelajakdagi matematika o‘qituvchilarini zamonaviy ta’lim talablariga mos, ijodiy fikrlovchi va kasbiy jihatdan yetuk mutaxassis sifatida tayyorlashga xizmat qiladi.

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IMPROVING FINANCIAL RISK MANAGEMENT MECHANISMS TO ENSURE FINANCIAL SECURITY IN PRIVATE UNIVERSITIES

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Abstract

Private universities carry a mission that is largely nonprofit and socially oriented, yet most of their income comes from tuition, which leaves them financially exposed in ways that are easy to overlook. In practice, the tools these institutions use to manage financial risk are still underdeveloped, both compared with what is expected of commercial firms and compared with how quickly the private higher education sector has grown in many emerging markets. This paper looks at the main sources of financial risk facing private universities: concentrated revenue, liquidity problems tied to the academic calendar, rigid cost structures, and risks linked to demographic change and regulation. It then discusses a set of governance, planning, monitoring, and capacity building mechanisms that can help institutions manage these risks more consistently. Instead of proposing a new measurement tool, the paper focuses on the practical, organizational steps that private universities can take to notice, track, and respond to financial risk over time. The discussion draws on the case of Uzbekistan, where the private higher education sector has grown quickly while financial risk governance has lagged behind, and concludes that strengthening these mechanisms should be treated as a necessary complement to, and not a replacement for, ongoing theoretical work on financial security in higher education.

Keywords

financial risk management; financial security; private universities; institutional governance; risk monitoring; higher education finance.

Introduction

Financial security can be understood as an institution's ability to protect its resources and pursue its goals despite the internal and external threats it faces. This ability depends not only on how strong an institution's finances look at a given moment, but on whether the institution has mechanisms in place to notice and respond to risk before its financial condition gets worse. This point matters a great deal for private universities. A balance sheet or a revenue report tells us where an institution stands today. Risk management mechanisms tell us whether the institution is able to catch a worsening trend early enough to act on it, rather than discovering the problem only once it has become a funding crisis. Financial security theory has followed a clear path over time, moving from the level of the state (Senchagov, 1995; Abalkin, 1994) to the level of the individual commercial enterprise. At the enterprise level, financial security is now widely treated as the most important part of economic security, and it is understood to depend heavily on whether an organization has mechanisms in place to protect its interests from possible threats, not simply on its financial condition at a single point in time (Bondarenko, 2018, cited in Buha, Bychin, & Ozerna, 2023; Varnalii, 2022).

Private universities have not received the same level of attention when it comes to risk management mechanisms specifically. Where private higher education institutions have been studied, most of the attention has gone to competitiveness and academic quality, including exam and admission scores, publication output, the share of foreign students, and research income (Ilyakova, Belash, & Kolmykov, 2021), rather than to the governance and procedural mechanisms that allow an institution to manage financial risk on an ongoing basis. This paper addresses that gap directly. It asks a simple question: what mechanisms, whether related to governance, planning, monitoring, or

institutional capacity, can private universities put in place to manage financial risk more systematically? The paper deliberately avoids proposing any new measurement tool or index, because mechanisms for managing risk are organizational and procedural matters, and they come before, and are separate from, the question of how financial security might eventually be measured.

Literature Review

Economic security theory describes financial security as a state, a process, or a property that allows an organization to protect its resources and economic opportunities while pursuing its goals and meeting the expectations of its stakeholders (Zaichko, 2021; Varnalii, 2022). This definition is clearly about process. Financial security is not simply a good looking balance sheet at one point in time; it is a capacity that has to be maintained through continuous organizational effort. This is why enterprise level financial security research points management attention toward preventive mechanisms, rather than toward the threat itself or its consequences after the fact (Buha, Bychin, & Ozerna, 2023). This same idea appears in general enterprise risk management theory, which treats risk management as an ongoing, embedded organizational process rather than something done periodically. The COSO Enterprise Risk Management framework, for example, defines enterprise risk management as the culture, capabilities, and practices that organizations build into their strategy and performance in order to manage risk while creating, preserving, and realizing value (COSO, 2017). The ISO 31000 risk management standard makes a similar point, stressing that risk management should be a normal part of organizational governance and decision making, not a separate function that sits apart from the rest of the organization (ISO, 2018).

Research on higher education finance has identified specific sources of financial vulnerability facing private universities, though this work does not always frame the problem explicitly in terms of risk management. A systematic review of the factors

affecting the financial stability of private universities finds that dependence on tuition and market based revenue makes these institutions vulnerable to demographic change, economic downturns, regulatory uncertainty, and competitive pressure, and it identifies governance quality and risk management practice, together with revenue structure, as recurring factors behind institutional financial stability (Americanjournal.org, 2026). Evidence from a more mature private higher education market supports this concern. Industry analysis in the United States has found that roughly one third of private nonprofit colleges and universities reported budget deficits in fiscal year 2024, and projections suggest that as many as 442 of the roughly 1,700 private nonprofit degree granting institutions in the country face a real risk of closing or merging within the next decade (The College Fix, 2026; Governing, 2026). More than 130 such institutions had already closed or merged between 2020 and 2025, a period in which close to 200,000 students and over two billion United States dollars in endowment assets were affected (The College Fix, 2026). In an important sense, these outcomes reflect failures of risk management mechanisms just as much as they reflect the underlying financial condition of these institutions, since some institutions in similar financial positions have managed to avoid closure simply by identifying declining enrollment or liquidity trends earlier and acting on them sooner.

Research on small and medium sized firms offers useful, transferable lessons about the organizational mechanisms used to manage financial risk under conditions of limited resources, conditions that many private universities also face. In the author's own earlier research on the financial security of small businesses in Uzbekistan, the internal and external threats identified, including limited financial resources, rising competition, regulatory instability, and infrastructure constraints, were shown to require a deliberate managerial response rather than resolving themselves on their own. That study also found that diversifying financing sources was a governance level policy choice, not

something that simply happened on its own (Jurakulova & Shadibekova, 2025). Similar evidence from wartime Ukraine shows that diversifying financing sources served as a deliberate resilience mechanism for small agricultural enterprises operating under severe external shocks, rather than being an incidental feature of the firms that happened to survive (Shcherbak et al., 2026). These findings support the idea that private universities, too, should treat financial risk as something to be actively and deliberately managed, rather than as a condition to be passively observed after the fact.

Before discussing mechanisms for managing financial risk, it helps to identify the specific sources of risk that private universities face, since these differ in important ways from the sources of risk that enterprise level financial security research was originally developed to address.

Revenue concentration risk.Tuition and fees are usually the main, and in many private universities almost the only, source of operating income. This concentration leaves institutions exposed to shocks on the demand side, such as demographic decline, new competitors entering the market, or a change in how much value people see in a given degree, shocks that a more diversified revenue base would help absorb.

Liquidity and cash flow timing risk. A university's cash flow follows the rhythm of the academic calendar. Tuition payments tend to arrive in clusters at the start of each term, while payroll, facilities costs, and other operating expenses accrue fairly evenly throughout the year. This mismatch between when revenue comes in and when expenses go out creates a liquidity risk that is driven largely by the calendar itself, rather than by the institution's overall financial condition.

Cost structure rigidity. A large part of a university's cost base, including academic staff salaries, facilities, and accreditation related compliance costs, is hard to adjust quickly without affecting academic quality or regulatory standing. This rigidity limits how fast an institution facing declining revenue can restore balance through cost cuts

alone, which is exactly why identifying risk early matters so much.

Demographic and competitive risk. Enrollment, and therefore tuition revenue, depends on the size of the birth cohort, secondary school completion rates, and how many new institutions are entering the market. These factors are largely outside any single university's control, and they play out over a longer time horizon than the typical annual financial planning cycle.

Regulatory and accreditation risk. Changes in licensing requirements, accreditation standards, or education policy can affect a private university's permitted enrollment, program offerings, or fee structure with little warning. Failing to comply carries consequences, including the loss of accreditation, that are far more serious than the typical consequences of regulatory noncompliance in a commercial business.

The mechanisms discussed below are organizational and procedural, not computational. Their purpose is to strengthen an institution's ability to identify, monitor, and respond to the risks described above, and they draw on a core principle of enterprise risk management: risk management works best when it is built into ordinary governance and planning processes, rather than treated as a separate, occasional exercise (COSO, 2017; ISO, 2018).

Giving clear responsibility for financial risk oversight to a board level committee or a designated senior officer, with a defined reporting line to institutional leadership, keeps financial risk on the regular governance agenda instead of something that only comes up once a problem has already become serious. This follows the same logic found in enterprise risk management, where oversight is built into governance structures rather than left to the finance office alone.

Because liquidity risk is tied so closely to the academic calendar, a formally adopted reserve policy, one that sets a minimum operating reserve measured in months of operating expenses and specifies the conditions under which it can be drawn down,

provides a buffer against the normal mismatch between tuition receipts and ongoing costs, as well as against unexpected drops in enrollment. Reducing how much an institution depends on tuition as its main revenue source, through deliberately building up research income, continuing education and executive programs, philanthropic and alumni giving, and partnerships with employers or government agencies, works as a risk management mechanism in its own right. The point here is about process, not calculation: diversification should be set as an explicit institutional goal and tracked from one budget cycle to the next, rather than treated as something that just happens as a side effect of an institution's regular activities. Extending financial planning beyond a single annual budget cycle to a rolling, multi year horizon, and combining this with scenario analysis that models the financial effect of possible enrollment declines or cost increases, allows institutional leadership to spot the point at which a worsening trend would threaten financial security while there is still time to respond, rather than only noticing the problem after that point has already passed. Regularly reporting a small number of key financial indicators, such as enrollment compared with projections, cash position compared with the reserve policy, and the share of revenue coming from the single largest source, to institutional leadership and the body responsible for risk oversight, allows emerging problems to surface through routine reporting rather than through informal or delayed communication. Keeping a dedicated compliance function, or at least giving someone in the finance office clear compliance responsibilities, to track upcoming regulatory and accreditation requirements and assess their financial impact ahead of time, reduces the chance that a regulatory change turns into an unexpected financial shock. None of the mechanisms above work well without capable staff to run them. Investing in the financial planning and risk analysis skills of the finance office, whether through training, additional staffing, or access to outside advisory support, is what determines whether these mechanisms are actually applied with rigor or simply

exist as policy documents that nobody follows in practice.

The Uzbekistan Context: A Widening Gap Between Expansion and Risk Governance. The case for strengthening these mechanisms is made stronger by how quickly the private higher education sector has grown in Uzbekistan. The number of private universities rose from 7 to 67 over the past decade, an increase of almost tenfold (The Diplomat, 2025; UzDaily, 2025a), while total university enrollment grew more than fivefold over the same period, from 264,300 students in the 2015 to 2016 academic year to 1,432,800 students in the 2024 to 2025 academic year (UzDaily, 2025b). This growth has already gone beyond the targets set out in national development strategy, which had aimed for at least 50 non state higher education institutions by 2026 (The Diplomat, 2025).

Institutions built under these conditions of rapid entry have generally had little time to develop the governance maturity that the mechanisms discussed above assume, such as board level risk committees, formal reserve policies, and multi year planning cycles. Many private universities in the sector are only a few years old, so financial risk management practice, where it exists at all, has usually developed informally rather than through deliberate institutional design. This gap is made worse by the absence of any sector wide expectation or regulatory requirement for financial risk governance. Unlike institutional accreditation, which is monitored externally, financial risk management practice in the sector is currently left almost entirely up to individual institutions.

Discussion

The mechanisms discussed above are intentionally procedural rather than quantitative. This reflects the view that, for a private higher education sector as young and varied as Uzbekistan's, the more pressing constraint on financial security is the near total absence of basic risk governance practice, such as reserve policies, multi year planning, and structured reporting, rather than the absence of a sophisticated

measurement tool. A composite financial security measure of the kind discussed elsewhere in the literature depends on exactly the kind of structured financial data and reporting discipline that these mechanisms are meant to establish in the first place. Introducing measurement before the underlying governance and reporting practices are in place risks producing a number that the institution has no real capacity to act on.

None of this means these mechanisms are easy or cheap to put in place. Smaller private universities may lack the staff capacity discussed above, and a formally adopted reserve policy competes for funding with other institutional priorities, including the facilities and staffing investments needed to maintain academic quality and accreditation standing. The mechanisms proposed here should therefore be seen as priorities to be introduced gradually, starting with the lowest cost, highest impact steps, such as governance level oversight and structured reporting, before moving toward more resource intensive steps like formal reserve funds and dedicated compliance functions.

Conclusion

This paper has argued that improving the financial security of private universities depends as much on the organizational mechanisms used to identify and manage financial risk as it does on the underlying financial condition those mechanisms are meant to protect. Drawing on financial security theory's emphasis on preventive, process based protection of institutional resources, and on general enterprise risk management principles that treat risk management as a built in governance function rather than an occasional exercise, this paper has identified several key mechanisms: governance level oversight, a liquidity reserve policy, revenue diversification as an explicit institutional goal, multi year planning and scenario analysis, structured risk monitoring and reporting, regulatory compliance management, and investment in institutional capacity. Together, these mechanisms address the revenue concentration, liquidity timing, cost rigidity, demographic, and regulatory risks that are characteristic of the private higher education

sector. In a sector as young and fast growing as Uzbekistan's private higher education market, building these mechanisms is a necessary and currently underdeveloped foundation, one that should come before, rather than after, any future effort to measure private university financial security in a composite or quantitative form.

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DEVELOPING DIALOGIC AND MONOLOGIC SPEECH THROUGH MULTIMEDIA TASKS IN UZBEK LANGUAGE LESSONS IN PRIMARY GRADES

(Using Schools Where Instruction Is Conducted in Russian as an Example)

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Abstract

This article addresses the development of spoken Uzbek through information technology in primary schools where Russian is the language of instruction. It aims to design a sequence of exercises that connects comprehension of multimedia input with independent dialogue and monologue. Comparative analysis of purposefully selected sources and didactic modelling inform a five-stage sequence: comprehension, supported speaking, information exchange, independent production, and revision through feedback. The article presents an illustrative Grade 3 lesson and assessment criteria for spoken performance. Tasks are differentiated according to learners' language experience. The proposed framework is theoretical and methodological; its effectiveness requires empirical evaluation.

Keywords

Uzbek, second language, primary education, speech development, information technology, multimedia, dialogue, monologue, scaffolding, formative assessment.

BOSHLANG'ICH SINF O'ZBEK TILI DARSLARIDA MULTIMEDIALI TOPSHIRIQLAR ORQALI DIALOGIK VA MONOLOGIK NUTQNI RIVOJLANTIRISH

(Ta'lim rus tilida olib boriladigan maktablar misolida)

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Annotatsiya. Maqolada ta’lim rus tilida olib boriladigan maktablarning boshlang‘ich sinflarida o‘zbekcha og‘zaki nutqni axborot texnologiyalari asosida rivojlantirish masalasi yoritiladi. Maqsad multimediali materialni tinglab tushunishdan mustaqil dialog va monolog tuzishga o‘tishni ta’minlaydigan mashqlar tizimini ishlab chiqishdir. Maqsadli tanlangan ilmiy-metodik manbalarni qiyosiy tahlil qilish va didaktik modellashtirish asosida besh bosqichli metodik ketma-ketlik taklif etiladi. Uning tarkibiga mazmunni anglash, tayanch bilan gapirish, axborot almashish, mustaqil bayon hamda qayta aloqa asosida takomillashtirish kiradi. Uchinchi sinf uchun namunaviy dars ssenariysi va og‘zaki nutqni baholash mezonlari ishlab chiqiladi. Raqamli vositaning vazifasi nutqiy harakat bilan bog‘lanadi, topshiriqlar esa o‘quvchining til tajribasiga moslashtiriladi. Maqola nazariy-metodik xususiyatga ega; taklif etilgan tizimning samaradorligi alohida tajriba-sinovda tekshirilishi lozim.

Kalit so‘zlar: o‘zbek tili, ikkinchi til, boshlang‘ich ta’lim, nutq o‘stirish, axborot texnologiyalari, multimedia, dialogik nutq, monologik nutq, nutqiy tayanch, formativ baholash.

Аннотация. В статье рассматривается развитие устной узбекской речи в начальных классах школ с русским языком обучения средствами информационных технологий. Цель работы — разработать систему упражнений, обеспечивающую переход от понимания мультимедийного материала к самостоятельному диалогу и монологу. На основе сравнительного анализа целенаправленно отобранных источников и дидактического моделирования предложены пять этапов работы: понимание содержания, говорение с опорой, обмен информацией, самостоятельное высказывание и его совершенствование по обратной связи. Представлены пример занятия для третьего класса и критерии оценки устной речи. Задания дифференцируются с учётом языкового опыта

учащихся. Работа носит теоретико-методический характер; эффективность предложенной системы подлежит экспериментальной проверке.

Ключевые слова: узбекский язык, второй язык, начальное образование, развитие речи, информационные технологии, мультимедиа, диалог, монолог, речевая опора, формирующее оценивание.

Kirish

Ta’lim rus tilida olib boriladigan boshlang‘ich sinflarda o‘zbek tilini o‘qitishning amaliy vazifasi o‘quvchini kundalik vaziyatlarda o‘zbekcha muloqot qilishga tayyorlashdir. Bunda nutq o‘stirish tanish so‘zlarni aytish, savolga javob berish, suhbatdoshdan ma’lumot so‘rash va voqeani izchil bayon etish kabi harakatlarda namoyon bo‘ladi. Ushbu maqolada nutq o‘stirishning og‘zaki tarkibiy qismi, xususan, dialogik va monologik nutq markazga qo‘yiladi; tinglab tushunish, o‘qish va qisqa yozma reja tuzish ularga tayyorgarlik vazifasini bajaradi.

X. Muxitdinovaning o‘zbek tilini ikkinchi til sifatida o‘qitishga bag‘ishlangan qo‘llanmasida til materiali, nutq ko‘nikmalari va mavzularning uzviyligi alohida metodik masala sifatida ko‘riladi [1]. Bu yondashuvdan kelib chiqib, yangi so‘z yoki grammatik shaklni tanlashda o‘quvchi undan qaysi muloqot vaziyatida foydalanishi aniqlanishi kerak. Masalan, joylashuvni bildiruvchi shakllarni o‘rganish sinfdoshiga kerakli buyumni topishda yordam berish vazifasi bilan bog‘lanishi mumkin.

Raqamli resursni tanlashda asosiy savol uning qaysi nutqiy harakatni qo‘llab-quvvatlashidir. Ekrandagi rasm buyumni ko‘rsatishi, audio uning nomi va gap ichidagi qo‘llanishini eshittirishi mumkin. O‘quvchi esa shu materialdan foydalanib sherigiga savol berishi yoki o‘z fikrini bayon etishi lozim. Maqolaning tadqiqot savoli quyidagicha: multimediali topshiriqlarni qanday ketma-ketlikda tashkil etish o‘quvchining tayyor nutq namunasidan mustaqil o‘zbekcha muloqotga o‘tishini metodik jihatdan ta’minlaydi?

Tadqiqot materiali va metodlari

Ish nazariy-metodik tadqiqot sifatida bajarildi. O‘zbek tilini ikkinchi til sifatida o‘qitish, multimediali o‘rganish, bolalarga beriladigan pedagogik yordam va og‘zaki nutqni baholashga oid maqsadli tanlangan manbalarning qoidalari qiyoslandi. Manbalar mavzuga bevosita aloqadorligi, muallif va nashr ma’lumotlarining aniqligi hamda taklif etilayotgan mashqlarning didaktik vazifasini tushuntira olishi asosida tanlandi. Qiyoslash natijalari dars topshiriqlari va baholash tavsiflarini loyihalashda qo‘llandi.

Mahalliy o‘quv materiali sifatida A. Rafiyev, G. Muxamedjanova va G. Ziyamuhamedovaning 2019-yilgi uchinchi sinf darsligidagi suhbat, rasm asosida gapirish va gap tuzish yo‘nalishlari hisobga olindi [2]. Ushbu nashr mavzu va mashq turini tahlil qilish uchun xizmat qiladi. Quyidagi dars ssenariysi esa maqola doirasida tuzilgan metodik misoldir; uni qo‘llashda o‘qituvchi amaldagi dastur, foydalanilayotgan darslik va sinfning tayyorgarligiga moslashtiradi.

Tadqiqotning natijasi sifatida mashqlar ketma-ketligi, namunaviy dars va sinov uchun baholash rubrikasi taklif etiladi. Maktab o‘quvchilaridan yig‘ilgan empirik ma’lumotlar mazkur ish tarkibiga kirmaydi. Shuning uchun metodikaning o‘zlashtirishga ta’siri, statistik ustunligi yoki samaradorlik foizi haqida xulosa chiqarilmaydi.

Multimediali nutq mashqlarining nazariy asoslari

R. Mayerning multimediali o‘rganish nazariyasi og‘zaki va tasviriy axborotni qayta ishlash kanallari, ishchi xotiraning cheklangan imkoniyati hamda mazmunni faol tashkil etishga tayanadi. Nazariyada ortiqcha materialni kamaytirish va axborotni boshqariladigan qismlarga ajratish muhim o‘rin tutadi [3]. O‘zbek tili darsi uchun bundan quyidagi metodik talab kelib chiqadi: audio va tasvir bir vaziyatni tushuntirishi, ekranda esa topshiriqni bajarish uchun zarur material berilishi kerak. Kalit so‘zlar

o‘quvchining ehtiyojiga qarab ko‘rsatiladi; matn hajmi va tinglash tezligi alohida moslashtiriladi.

D. Wood, J. S. Bruner va G. Ross bolaning mustaqil bajara olmaydigan vazifasini kattalar ko‘magida bajarishini pedagogik tayanch, ya’ni scaffolding orqali tavsiflaydi [4]. Ushbu g‘oyani til mashqlariga tatbiq etish sifatida dastlab rasm, so‘z va gap boshlanishini birga berish, keyinchalik yordamni kamaytirish taklif qilinadi. Masalan, avval to‘liq savol namunasi ko‘rsatiladi, so‘ng faqat so‘roq so‘zi qoldiriladi, keyingi topshiriqda o‘quvchi savolni vaziyatdan kelib chiqib tuzadi. Tayanchni olib tashlash bolaning real javobiga qarab hal etiladi.

R. Ellis boshlang‘ich darajadagi yosh til o‘rganuvchilar bilan mazmunni tushunishga yo‘naltirilgan topshiriqlardan foydalanish imkoniyatini asoslaydi. Bunday topshiriqda bola dastlab eshitganini buyumni tanlash yoki rasmni ko‘rsatish orqali namoyon qilishi mumkin; keyin shu mazmun bilan bog‘liq gapirish vazifasiga o‘tiladi [5]. Bu qoida o‘zbekcha gapirishga hali tayyor bo‘lmagan o‘quvchi uchun kirish bosqichini belgilashga yordam beradi. Dialogga o‘tishda esa sheriklardan birida mavjud axborot ikkinchisida bo‘lmagan vaziyat yaratiladi.

K. Ramalingam, Yeo Kee Jiar va S. Mathiyazhagan Malayziyadagi boshlang‘ich maktabda 13 nafar ikkinchi sinf o‘quvchisi ishtirokida tamil tilida raqamli hikoya bilan ishlashni o‘rgangan. Mualliflar mashg‘ulotlardan keyin tushunish, lug‘at va ravonlik ko‘rsatkichlaridagi ijobiy o‘zgarishlarni qayd etgan [6]. Ishtirokchilar soni kichikligi va boshqa til muhiti bu natijalarni O‘zbekiston maktablariga bevosita ko‘chirishni cheklaydi. Tadqiqotdan mazkur maqola uchun olinadigan yo‘nalish — qisqa tasviriy hikoyani tinglash, qayta aytish va o‘quvchining o‘z hikoyasini yaratishini birlashtirish imkoniyatidir.

O‘quvchining til tajribasi va topshiriqlarni moslashtirish

Maktabda ta’limning rus tilida olib borilishi har bir bolaning oiladagi asosiy tili ham rus tili ekanini anglatmaydi. O‘quvchilar o‘zbek tilini uyda, mahallada yoki boshqa faoliyatlarda turlicha qo‘llashi mumkin. Shu sababli boshlang‘ich diagnostikada bolaning tanish mavzudagi gapni tushunishi, savolga javob berishi, o‘zi savol tuzishi va rasm haqida qisqa gapirishi kuzatiladi. Topshiriq darajasi millat yoki ta’lim tiliga qarab oldindan belgilanmaydi.

Mashqlar uchun tekshiriladigan til birliklari sifatida joylashuvni bildiruvchi qo‘shimchalar, shaxsga mos fe’l shakllari, savol tuzilishi va ayrim tovushlarning farqlanishi tanlanishi mumkin. Masalan, ko‘l va qo‘l so‘zlarini audio hamda mos rasmlar bilan farqlash tinglashni gapirish bilan bog‘laydi. Bunday misol barcha o‘quvchilarda aynan shu tovushlar bo‘yicha qiyinchilik borligini bildirmaydi. O‘qituvchi keyingi mashqni diagnostikada kuzatilgan ehtiyojga qarab belgilaydi.

Boshlang‘ich yordam darajasida bola rasmni tanlaydi, so‘z yoki qisqa birikma bilan javob beradi. Keyingi darajada gap boshlanishi va tayanch so‘zlardan foydalanadi. Mustaqilroq o‘quvchi qo‘shimcha savol beradi, sababni tushuntiradi yoki vaziyatni kengaytiradi. Bu darajalar doimiy guruhlar emas; bir bola turli mavzularda turlicha yordamga muhtoj bo‘lishi mumkin. Zarur qisqa izoh o‘quvchi yaxshi tushunadigan tilda berilib, undan keyin vazifa o‘zbekcha nutqiy harakat bilan davom ettiriladi.

Dialog va monolog uchun bosqichli mashqlar tizimi

Taklif etilayotgan tizimda har bir raqamli resurs uch jihatdan rejalashtiriladi: undan olinadigan mazmun, o‘quvchi bajaradigan nutqiy harakat va kuzatiladigan natija. Ushbu maqolaning metodik taklifi bir mavzu doirasida tayanchni bosqichma-bosqich kamaytirish, dialogdagi axborot almashishni monolog bilan bog‘lash hamda qayta ishlangan javobni yangi vaziyatda tekshirishdan iborat. Ketma-ketlik besh bosqichni qamrab oladi.

Birinchi bosqich — mazmunni anglash. O‘qituvchi qisqa audiovaziyatni rasmlar bilan beradi. O‘quvchi kim, nima va qayerda ekanini aniqlaydi, mos tasvirni tanlaydi yoki buyumni ko‘rsatadi. Dastlabki javobning noverbal shakli ham qabul qilinadi. Shundan keyin tayyor o‘quvchi o‘z tanlovini so‘z yoki qisqa gap bilan ifodalaydi. Audio qayta eshittirilganda bolaga nimani aniqlashi kerakligi oldindan aytiladi.

Ikkinchi bosqich — tayanch bilan gapirish. Rasm yonida zarur so‘zlar yoki gapning boshlanishi ko‘rsatiladi. Masalan, buyumning joyi o‘zgarganda o‘quvchi uning yangi joylashuvini aytadi. Dastlab namunaga qarab javob berish mumkin, keyingi urinishda so‘zlar qisman yopiladi. Natija sifatida o‘quvchining o‘zi tanlagan birlik yordamida mazmunli gap tuzishi kuzatiladi. Namuna bilan bir xil gapni takrorlash va yangi mazmunni ifodalash alohida qayd etiladi.

Uchinchi bosqich — axborot almashish. Juftlik a’zolariga bir-biridan farqli rasm yoki kartochka beriladi. Birinchi o‘quvchi ikkinchisidagi yetishmayotgan ma’lumotni savol bilan aniqlaydi. Masalan, sherigining tasviridagi buyumning rangi yoki joyi ma’lum emas. Savolning amaliy maqsadi — o‘z kartochkasini to‘ldirish. O‘qituvchi rollarni almashtirib, har ikkala bolaning ham savol berishi va javob qaytarishini kuzatadi. Natija to‘ldirilgan kartochka hamda uni bajarish uchun ishlatilgan dialogdir.

To‘rtinchi bosqich — mustaqil bayon. O‘quvchi bir necha rasm asosida qisqa hikoya yoki tavsif tayyorlaydi. Raqamli hikoya deganda bu yerda o‘quvchining ovozi bilan izohlangan tasvirlar ketma-ketligi tushuniladi. Unda tayyor matnni o‘qish o‘rniga rasm va kalit so‘zlar bo‘yicha gapirishga sharoit yaratiladi. Dastlab sherik bilan mashq qilish mumkin; yakuniy nutq namunasida berilgan yordam hajmi qayd etiladi. Tasvirlarning bezagi og‘zaki javob sifatining bahosiga kiritilmaydi.

Beshinchi bosqich — qayta aloqa va ko‘chirish. O‘quvchi qisqa audioyozuvini tinglab, o‘qituvchi bilan oldindan kelishilgan bitta mazmuniy yoki til jihatini yaxshilaydi. Masalan, yetishmayotgan joy ma’lumotini qo‘shadi yoki qo‘shimchani

tuzatadi. So‘ng yangi rasm yoki boshqa suhbatdosh bilan o‘xshash vazifani bajaradi. Shu yo‘l bilan oldingi javobni yodlab takrorlash va o‘rganilgan birlikni yangi vaziyatda qo‘llash farqlanadi. Qayta aloqa bolaning shaxsiga emas, aniq nutq namunasiga qaratiladi.

Uchinchi sinf uchun namunaviy mashg‘ulot

Sinf xonamiz mavzusidagi ushbu misol 45 daqiqalik dars ssenariysi sifatida taklif etiladi. Maqsad — o‘quvchining buyum joylashuvini so‘rashi, sherigi savoliga javob berishi va sinf tasviri haqida qisqa bayon tuzishi. Lug‘aviy material sifatida doska, javon, kitob, daftar, qalamdon, deraza so‘zlari; til birliklari sifatida qayerda savoli, o‘rin-joy shakllari va bor konstruksiyasi olinadi. Yangi birliklar miqdori sinfning avvalgi bilimi bo‘yicha kamaytirilishi mumkin.

1 jadval Namunaviy darsning tashkil etilishi

Vaqt	**Ish shakli**	**Topshiriq va kuzatiladigan natija**
5 daqiqa	Kirish va aniqlash	Sinf tasviri bo‘yicha tanish buyumlarni nomlash; o‘qituvchi zarur tayanchni aniqlaydi.
7 daqiqa	Tinglash	Qisqa audiodagi joylashuvga mos rasmni tanlash; tayyor o‘quvchi tanlovini gap bilan izohlaydi.
8 daqiqa	Tayanchli mashq	Buyumning joyi o‘zgargan tasvir bo‘yicha savol va javob tuzish; yordam asta kamaytiriladi.
10 daqiqa	Juftlik dialogi	Bir-birini to‘ldiruvchi kartochkalardagi bo‘sh ma’lumotlarni savol-javob orqali aniqlash; rollarni almashtirish.

Vaqt	Ish shakli	Topshiriq va kuzatiladigan natija
10 daqiqa	Qisqa monolog	Yangi tasvirni sherigiga tavsiflash; sherik aytilgan buyumlarni belgilaydi. O‘qituvchi tanlangan nutq namunalarini yozib oladi.
5 daqiqa	Qayta aloqa	Bir javobni yaxshilash va yangi tasvirdagi bitta o‘zgarishni aytish; o‘quvchi o‘ziga kerak bo‘lgan yordamni belgilaydi.

Axborot almashish uchun A kartochkada kitobning joylashuvi ko‘rsatiladi, qalamdonning joyi esa bo‘sh qoldiriladi. B kartochkada qalamdonning joylashuvi bor, kitobning joyi yetishmaydi. Har bir kartochka faqat o‘z egasiga ko‘rinadi. O‘quvchilar kartochkalarini ko‘rsatmasdan savol berib, yetishmayotgan buyumni kerakli joyga belgilaydilar. Demak, javobni eshitish topshiriqni bajarish uchun zarur bo‘ladi.

Suhbat namunasi: A: «Qalamdon qayerda?» B: «Qalamdon deraza yonida. Kitob qayerda?» A: «Kitob pastki javonda». B: «Bitta kitobmi?» A: «Yo‘q, ikkita kitob bor».

Deraza yonida va pastki javonda birikmalari faqat oldindan tushuntirilgan bo‘lsa qo‘llanadi. Yordamga muhtoj o‘quvchi rasm va savol boshlanishidan foydalanadi; tayyorroq o‘quvchi buyum sonini yoki rangini aniqlaydigan qo‘shimcha savol beradi. Monolog uchun esa boshqa sinf xonasi tasviri olinadi. Masalan, o‘quvchi avval xonani umumiy tanishtiradi, keyin undagi ikki buyumning joyini aytadi va o‘zi tanlagan tafsilotni qo‘shadi. To‘rt–olti gaplik javob ushbu misolning mo‘ljali bo‘lib, majburiy yosh me’yori hisoblanmaydi.

Ssenariyni bitta kompyuter, karnay va proyektor bilan tashkil etish mumkin. Umumiy ekran faqat kirish materiali uchun ishlatiladi; maxfiy axborotli juftlik

topshiriqlari bosma kartochkalarda bajariladi. Shaxsiy qurilmalar mavjud bo‘lsa, shu kartochkalarning elektron varianti beriladi. Ovoz yozish navbat bilan tashkil etiladi, qolgan bolalar juftlikda gapiradi. Har bir o‘quvchining yozuvini aynan bitta darsda olish talab etilmaydi.

Og‘zaki nutqni baholash mezonlari

Baholashda o‘quvchining vazifani tushunarli nutq orqali bajara olishi kuzatiladi. CEFRning 2020-yilgi qo‘shimcha jildida og‘zaki nutq yaratish, muloqot va fonologik nazorat alohida tavsiflanadi; talaffuzni baholashda tinglovchining mazmunni tushunishi muhim o‘rin egallaydi [7]. Quyidagi rubrika shu umumiy yo‘nalishlarni mahalliy topshiriqqa moslashtirish uchun tuzildi. U rasmiy CEFR shkalasi yoki sinovdan o‘tgan diagnostik vosita sifatida taqdim etilmaydi.

2 jadval Og‘zaki javob uchun taklif etilayotgan rubrika

Mezon	**1 ball**	**2 ball**	**3 ball**
Vazifaning bajarilishi	Alohida ma’lumot beradi; maqsadning katta qismi ochilmaydi.	Asosiy ma’lumotni beradi; ayrim zarur tafsilotlar yetishmaydi.	Vazifa uchun kerakli ma’lumotni tushunarli va yetarli beradi.
Lug‘atdan foydalanish	So‘z tanlashdagi uzilishlar fikrni ifodalashga tez-tez to‘sqinlik qiladi.	Mavzuga mos so‘zlarni qo‘llaydi; ayrim izlashlar kuzatiladi.	Tanish lug‘at yordamida kerakli fikrni mustaqil ifodalaydi.

Mezon	1 ball	2 ball	3 ball
Grammatik shakllar	Shakl xatolari mazmunni ko‘p hollarda noaniq qiladi.	Sodda tuzilmalarni qo‘llaydi; xatolarga qaramay mazmun anglashiladi.	Vazifa uchun zarur sodda tuzilmalarni asosan to‘g‘ri qo‘llaydi.
Talaffuz tushunarliligi	Ko‘p so‘zlarni anglash uchun muntazam takrorlash talab etiladi.	Nutq asosan tushunarli; ayrim so‘zlarni takrorlash so‘raladi.	Nutq tushunarli; talaffuz mazmunni anglashga sezilarli to‘sqinlik qilmaydi.
Monologning izchilligi	Alohida gaplar o‘rtasidagi bog‘lanishni anglash qiyin.	Gaplar umumiy mavzuni saqlaydi; ketma-ketlikda ayrim uzilishlar bor.	Fikrlar tushunarli ketma-ketlikda beriladi; pauzalar mazmunni buzmaydi.
Dialogdagi ishtirok	Asosan undovdan keyin javob beradi; savol tuzishga ko‘mak kerak.	Javob beradi va savol tuzadi; muloqotni davom ettirishda ba’zan ko‘mak oladi.	O‘z navbatida savol beradi, mos javob qaytaradi va ma’lumot almashishni davom ettiradi.

Har bir mezonda 0 ball yetarli imkoniyat berilgan bo‘lsa ham tegishli ko‘nikmani baholashga yaroqli nutqiy dalil namoyon bo‘lmaganda qo‘yiladi. Bola qatnashmagani yoki yozuv texnik sabab bilan olinmagani esa ma’lumot yo‘q deb qayd etiladi. Monolog birinchi besh mezon, dialog birinchi to‘rt mezon va dialogdagi ishtirok mezoni bo‘yicha

baholanadi. Natijada ikkita alohida, har biri 15 ballgacha bo‘lgan profil hosil bo‘ladi. Umumiy ball bilan birga har bir mezondagi o‘zgarish ko‘rsatiladi; ballardan avtomatik ravishda CEFR darajasi chiqarilmaydi.

Tayanch turi, qo‘shimcha savollar va qayta tinglash imkoniyati baholash varag‘ida alohida qayd etiladi. Boshlang‘ich va yakuniy topshiriqlarda ushbu shartlar bir xil saqlanadi. Talaffuz bahosi aksentning mavjudligiga emas, mazmunning tushunarliligiga tayanadi. Sinovdan oldin mutaxassislar rubrika mazmunini ko‘rib chiqishi, baholovchilar esa bir xil namunalar ustida tavsiflarni talqin qilishni muvofiqlashtirishi kerak.

Metodik muhokama va tajriba sinov yo‘nalishi

Taklif etilgan tizimdagi raqamli vositaning foydali vazifasi tanlangan fragmentni qayta eshittirish, tasvirni o‘zgartirish va bolaning javobini qayta tinglash imkoniyati bilan belgilanadi. Biroq juftlikda ko‘proq gapirish va o‘qituvchining izchil qayta aloqasi ham natijaga ta’sir qilishi mumkin. Shu sababli multimediali darsdagi ijobiy o‘zgarishni faqat qurilma yoki dasturga bog‘lash to‘g‘ri bo‘lmaydi. UNESCOning 2023-yilgi hisobotidagi tavsiyalar ham texnologiyani tanlashda o‘quv maqsadi, mahalliy sharoit va foydalanish imkoniyatini hisobga olishni ta’kidlaydi [8].

Metodik tizimni tekshirish uchun tajriba va taqqoslash sinflarida bir xil mavzu, o‘qitish vaqti hamda o‘xshash boshlang‘ich tayyorgarlikni ta’minlash taklif etiladi. Agar butun mashqlar tizimining ta’siri o‘rganilsa, taqqoslash sharti odatiy dars bo‘lishi mumkin. Aynan raqamli vositaning qo‘shimcha hissasini aniqlash uchun esa ikkala guruhdagi nutqiy mashqlar, juftlikda ishlash va qayta aloqa tenglashtirilib, materialni taqdim etish va yozib olish usuli farqlanishi kerak. Bu ikki dizayn turli tadqiqot savollariga javob beradi.

O‘lchash uchun mashg‘ulotdan oldingi, keyingi va ma’lum vaqt o‘tgach bajariladigan mazmunan yangi, qiyinligi o‘xshash topshiriqlar olinadi. O‘quvchi

muntazam mashq qilgan matnning aynan o‘zini qayta aytmasligi kerak. Nutq yozuvlari imkon qadar guruh va o‘lchash bosqichi ko‘rsatilmagan holda ikki baholovchiga beriladi. Kelishuv darajasi tekshiriladi; statistik tahlilda boshlang‘ich farqlar va o‘quvchilarning sinflarga birlashgani hisobga olinadi. Bir guruhga bittadan sinf olinganda sinf yoki o‘qituvchi ta’sirini metod ta’siridan ajratish cheklangan bo‘ladi.

Amaliy kuzatuvda foydalanilgan tayanch, bolaning o‘zbekcha muloqot tajribasi, qatnashgan mashg‘ulotlari va texnik uzilishlar qayd etilishi lozim. Ovoz yozuvlari ta’limiy maqsad bilan cheklanadi; maktab va ota-onalar bilan kelishilgan tartibda, bolaga tushunarli izoh berilgan holda saqlanadi. Shaxsiy qurilmasi bo‘lmagan o‘quvchi uchun sinfdagi yoki bosma muqobil topshiriq ta’minlanadi. Raqamli ko‘nikma yetishmasligi uning til ko‘nikmasiga beriladigan bahoni pasaytirmasligi kerak.

Xulosa

Ta’lim rus tilida olib boriladigan boshlang‘ich sinflarda o‘zbekcha nutqni rivojlantirish uchun multimediali materialni aniq muloqot vazifasiga bog‘lash taklif etildi. Ishlab chiqilgan ketma-ketlik o‘quvchining mazmunni anglashidan tayanchli gapirishga, axborot almashishdan mustaqil bayonga va javobni takomillashtirishga o‘tishini tashkil etadi. Uning markazida o‘quvchining savol berishi, javob qaytarishi va tinglovchiga tushunarli fikr yetkazishi turadi.

Maqolaning amaliy natijasi uchinchi sinf uchun moslashtiriladigan dars ssenariysi va dialog hamda monologni alohida baholash rubrikasidir. Ularni qo‘llashda til tajribasi, tayanchga ehtiyoj va mavjud jihozlar hisobga olinadi. Taklif etilgan tizim PhD tadqiqotining metodik qismini loyihalash uchun asos bo‘lishi mumkin. Uning samaradorligi haqida dalilli xulosa chiqarish uchun rubrikani dastlabki sinovdan o‘tkazish va taqqoslash shartlari aniq belgilangan pedagogik tajriba zarur.

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THE IMPACT OF PSYCHOEMOTIONAL STATE ON QUALITY OF LIFE IN PATIENTS WITH MALIGNANT TUMORS OF THE REPRODUCTIVE SYSTEM RECEIVING CHEMOTHERAPY

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Abstract

This thesis examines the impact of psychoemotional state on quality of life in patients with malignant tumors of the reproductive system receiving chemotherapy. An oncological diagnosis, the duration of treatment, side effects of chemotherapy, anxiety regarding disease prognosis, and changes in physical condition can significantly affect patients' psychological well-being and daily activities. The study analyzes the relationship between anxiety, depressive symptoms, emotional distress, psychological adjustment, and quality-of-life indicators. It also evaluates the impact of psychoemotional state on patients' physical activity, social relationships, adaptation to treatment, and overall life satisfaction. The findings are of practical importance for the early identification of the need for psychological and psychiatric support among patients with malignant tumors of the reproductive system, improving the effectiveness of comprehensive treatment, and enhancing quality of life.

Keywords

reproductive system, malignant tumor, chemotherapy, psychoemotional state, quality of life, anxiety, depression, psychological adjustment, psycho-oncology.

KIMYOVIY TERAPIYA OLAYOTGAN REPRODUKTIV TIZIM XAVFLI O‘SMALARI BILAN OG‘RIGAN BEMORLARDA PSIXOEMOTSIONAL HOLATNING HAYOT SIFATIGA TA’SIR

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Annotatsiya. Ushbu tezisda kimyoviy terapiya olayotgan reproduktiv tizim xavfli o‘smalari bilan og‘rigan bemorlarda psixoemotsional holatning hayot sifatiga ta’siri o‘rganiladi. Onkologik tashxis, davolash jarayonining davomiyligi, kimyoviy terapiyaning nojo‘ya ta’sirlari, kasallik prognoziga oid xavotir hamda jismoniy holatdagi o‘zgarishlar bemorlarning ruhiy holati va kundalik faoliyatiga sezilarli ta’sir ko‘rsatishi mumkin. Tadqiqotda xavotir, depressiv belgilar, emotsional zo‘riqish va psixologik moslashuv darajasi bilan hayot sifati ko‘rsatkichlari o‘rtasidagi bog‘liqlik tahlil qilinadi. Shuningdek, psixoemotsional holatning bemorlarning jismoniy faolligi, ijtimoiy munosabatlari, davolanishga moslashuvi va umumiy hayotdan qoniqishiga ta’siri baholanadi. Olingan natijalar reproduktiv tizim xavfli o‘smalari bilan kasallangan bemorlarda psixologik va psixiatrik yordamga ehtiyojni erta aniqlash, kompleks davolash samaradorligini oshirish hamda hayot sifatini yaxshilashda amaliy ahamiyat kasb etadi.

Kalit so‘zlar: reproduktiv tizim, xavfli o‘sma, kimyoviy terapiya, psixoemotsional holat, hayot sifati, xavotir, depressiya, psixologik moslashuv, psixoonkologiya.

KIRISH

Reproduktiv tizim xavfli o‘smalari bilan kasallangan bemorlarda kimyoviy terapiya jarayoni nafaqat somatik holatga, balki psixoemotsional barqarorlik va hayot sifatiga ham sezilarli ta’sir ko‘rsatadi. Onkologik tashxisning o‘zi bemorda kuchli ruhiy zo‘riqish, qo‘rquv va noaniqlik hissini yuzaga keltirishi mumkin. Davolash davomida esa kimyoviy terapiyaning nojo‘ya ta’sirlari, jismoniy holatdagi o‘zgarishlar, kundalik faoliyatning cheklanishi hamda kasallik prognozi bilan bog‘liq xavotir psixoemotsional holatni yanada og‘irlashtiradi.

Bunday bemorlarda xavotir, depressiv kayfiyat, emotsional beqarorlik, uyqu buzilishi, ijtimoiy faollikning pasayishi va kelajakka nisbatan ishonchsizlik kabi holatlar kuzatilishi mumkin. Ushbu psixologik o‘zgarishlar bemorning davolanishga

munosabati, shifokor tavsiyalariga rioya qilishi, ijtimoiy va oilaviy munosabatlari hamda umumiy hayotdan qoniqish darajasiga bevosita ta’sir ko‘rsatadi.

Shu sababli onkologik bemorlarda hayot sifatini baholashda faqat jismoniy ko‘rsatkichlar bilan cheklanib qolmasdan, ularning psixoemotsional holatini ham kompleks tarzda o‘rganish muhim ahamiyatga ega. Ayniqsa, reproduktiv tizim xavfli o‘smalarida kasallik va davolash jarayoni bemorning tana qiyofasi, reproduktiv salomatligi va shaxsiy hayotiga ta’sir qilishi mumkinligi sababli psixologik omillarning ahamiyati yanada ortadi.

Mazkur tezisning maqsadi kimyoviy terapiya olayotgan reproduktiv tizim xavfli o‘smalari bilan og‘rigan bemorlarda psixoemotsional holatning hayot sifatiga ta’sirini tahlil qilishdan iborat.

ASOSIY QISM

Kimyoviy terapiya olayotgan reproduktiv tizim xavfli o‘smalari bilan og‘rigan bemorlarda psixoemotsional holat hayot sifatini belgilovchi muhim omillardan biri hisoblanadi. Davolash jarayonida kuzatiladigan jismoniy holsizlik, ko‘ngil aynishi, uyqu buzilishi, tashqi ko‘rinishdagi o‘zgarishlar va kundalik faoliyatning cheklanishi bemorlarning ruhiy holatiga salbiy ta’sir ko‘rsatishi mumkin. Natijada xavotir, depressiv kayfiyat, emotsional zo‘riqish va ijtimoiy faollikning pasayishi yuzaga keladi.

Psixoemotsional buzilishlarning kuchayishi bemorlarning hayot sifatining bir necha yo‘nalishlariga ta’sir ko‘rsatadi. Jumladan, jismoniy faollikning pasayishi, oilaviy va ijtimoiy munosabatlardagi qiyinchiliklar, davolash natijalariga nisbatan ishonchsizlik va kelajakdan xavotirlanish bemorning umumiy hayotdan qoniqish darajasini kamaytirishi mumkin. Ayniqsa, reproduktiv tizim bilan bog‘liq kasalliklarda tana qiyofasi, reproduktiv imkoniyatlar va shaxsiy hayotga oid o‘zgarishlar psixologik zo‘riqishni yanada kuchaytiradi.

Bemorlarning psixoemotsional holatini baholashda xavotir va depressiya belgilari bilan bir qatorda emotsional barqarorlik, ijtimoiy moslashuv va kundalik faoliyat darajasiga ham e’tibor qaratish zarur. Psixologik zo‘riqish darajasi yuqori bo‘lgan bemorlarda hayot sifati ko‘rsatkichlari pastroq bo‘lishi mumkin, bu esa davolashga moslashuv va tibbiy tavsiyalarga rioya qilishga ham ta’sir ko‘rsatadi.

Shu sababli kimyoviy terapiya olayotgan bemorlarda psixoemotsional holatni muntazam baholash, xavotir va depressiv belgilarni erta aniqlash hamda zarur psixologik yordamni tashkil etish muhim hisoblanadi. Bunday yondashuv bemorning davolash jarayoniga moslashuvini yaxshilash, ijtimoiy faolligini qo‘llab-quvvatlash va umumiy hayot sifatini oshirishga xizmat qiladi.

XULOSA

Kimyoviy terapiya olayotgan reproduktiv tizim xavfli o‘smalari bilan og‘rigan bemorlarda psixoemotsional holat hayot sifatiga sezilarli ta’sir ko‘rsatadi. Xavotir, depressiv belgilar, emotsional zo‘riqish va ijtimoiy moslashuvdagi qiyinchiliklar bemorlarning jismoniy faolligi, oilaviy munosabatlari, davolanish jarayoniga moslashuvi hamda umumiy hayotdan qoniqish darajasini pasaytirishi mumkin.

Psixoemotsional buzilishlarni erta aniqlash va ularning hayot sifati bilan o‘zaro bog‘liqligini baholash onkologik bemorlarga ko‘rsatiladigan tibbiy yordamning muhim tarkibiy qismi hisoblanadi. Bunda psixologik va psixiatrik yordamni davolash jarayoniga integratsiya qilish bemorning ruhiy holatini barqarorlashtirish, davolanishga moslashuvini yaxshilash va hayot sifatini oshirish imkonini beradi.

Shunday qilib, reproduktiv tizim xavfli o‘smalari bilan kasallangan bemorlarda kimyoviy terapiya davrida psixoemotsional holatni muntazam baholash va zarur psixologik yordam choralarini o‘z vaqtida tashkil etish kompleks davolash samaradorligini oshirishga xizmat qiladi.

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IMPROVING THE QUALITY OF EDUCATION BASED ON ARTIFICIAL INTELLIGENCE AND DIGITAL TECHNOLOGIES

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Abstract

The application of digital technologies and artificial intelligence in the education system plays a crucial role in enhancing the effectiveness of the learning process, personalizing education, and boosting students' motivation to learn. This article analyzes the potential of AI-based educational platforms, adaptive learning systems, and generative AI tools within the educational process, alongside digital educational resources, cloud technologies, mobile learning, and web-quests. Furthermore, the article highlights the advantages, existing challenges, and future prospects of utilizing artificial intelligence.

Keywords

Digital education, artificial intelligence, generative AI, ChatGPT, adaptive learning, cloud technologies, web-quest, educational differentiation, digital competence.

SUN'IY INTELLEKT VA RAQAMLI TEXNOLOGIYALAR ASOSIDA TA'LIM SIFATINI OSHIRISH

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Annotatsiya. Ta'lim tizimida raqamli texnologiyalar va sun'iy intellekt texnologiyalarini qo'llash o'quv jarayonining samaradorligini oshirish, ta'limni individuallashtirish hamda o'quvchilarning bilim olishga bo'lgan motivatsiyasini

kuchaytirishda muhim ahamiyat kasb etadi. Mazkur maqolada raqamli ta'lim vositalari, bulutli texnologiyalar, mobil ta'lim, veb-kvestlar bilan bir qatorda sun'iy intellekt asosidagi ta'lim platformalari, adaptiv o'qitish tizimlari va generativ sun'iy intellekt vositalarining ta'lim jarayonidagi imkoniyatlari tahlil qilingan. Shuningdek, sun'iy intellektdan foydalanishning afzalliklari, mavjud muammolari hamda istiqbollari yoritilgan.

Kalit so'zlar: Raqamli ta'lim, sun'iy intellekt, generativ AI, ChatGPT, adaptiv ta'lim, bulutli texnologiyalar, veb-kvest, ta'limni differensiallashtirish, raqamli kompetensiya.

Hozirgi kunda raqamli transformatsiya jarayonlari sun'iy intellekt texnologiyalarining jadal rivojlanishi bilan yangi bosqichga ko'tarildi. Ta'lim tizimida ChatGPT, Gemini, Microsoft Copilot, Claude kabi generativ sun'iy intellekt vositalari o'qituvchi va o'quvchilarning kundalik faoliyatiga kirib bormoqda. Ushbu texnologiyalar o'quv materiallarini yaratish, murakkab mavzularni sodda tushuntirish, individual topshiriqlar ishlab chiqish, baholash mezonlarini shakllantirish hamda o'quvchilarga tezkor maslahatlar berishda keng qo'llanilmoqda. Bugungi kun pedagogi ta’lim sohasida raqamli texnologiyalarni rivojlantirish kasbiy ta’limning etakchi maqsadi bo‘lib, bu talabalarning yuqori malakali mutaxassis bo‘lish yo‘lida raqobatbardosh fazilatlarini rivojlantirish imkonini beradi. Shu munosabat bilan o‘qituvchining asosiy vazifasi o‘quvchining individual imkoniyatlarini hisobga olgan holda ta’lim jarayonida raqamli texnologiyalardan foydalanish hisoblanadi. Zamonaviy mehnat bozori yuqori malakali kadrlar tayyorlash zaruriyatini yuzaga keltirdi, shu munosabat bilan ta’lim sohasida innovatsion texnologiyalardan foydalanish yangilanmoqda. Hozirda raqamli texnologiyalar bilan ishlash qobiliyatiga ega bitiruvchilar kerak. Ta’lim muassasasining ustuvor vazifalaridan biri o‘quvchining

nafaqat nazariy bilimlarni egallashi, balki axborot texnologiyalaridan foydalanish, axborotni mustaqil ravishda ajratib olish va tahlil qilish qobiliyatini rivojlantirishdir.

Raqamli texnologiyalardan foydalanish ta’lim mazmunini yangilash bilan birgalikda u amalga oshirilishi kerak. Bunday yondashuv ta’lim sifatini keskin oshiradi.

Ta’lim tizimida raqamli texnologiyalarni rivojlantirish sabablari orasida ko‘plab tadqiqotchilar sinf yukining kamayishi va mustaqil ishlar ulushining ko‘payishini bildiradi. Shu bois, ta’lim sifatini saqlab qolish va oshirish maqsadida o‘quvchilarning bilim olishidagi kamchiliklarni o‘z vaqtida bartaraf etish maqsadida o‘qituvchi va talabaning o‘zaro hamkorligini ta’minlaydigan raqamli ta’lim texnologiyalari faol joriy etilmoqda. [1]

So'nggi yillarda sun'iy intellekt ta'lim tizimining ajralmas qismiga aylanmoqda. SI texnologiyalari o'qituvchi faoliyatini almashtirmaydi, balki uni qo'llab-quvvatlaydi va ta'lim sifatini oshirishga xizmat qiladi.

Sun'iy intellektning ta'limdagi asosiy afzalliklari quyidagilar hisoblanadi:

- o'quv materiallarini avtomatik yaratish;
- individual o'quv yo'nalishlarini shakllantirish;
- adaptiv testlar ishlab chiqish;
- topshiriqlarni tezkor tekshirish;
- o'quvchilarning bilim darajasini tahlil qilish;
- o'qituvchining vaqtini tejash;
- virtual yordamchi sifatida 24/7 maslahat berish;
- o'quvchilarning mustaqil ta'lim olish ko'nikmalarini rivojlantirish.

Masalan, ChatGPT yordamida o'qituvchi bir necha daqiqa ichida dars ishlanmasi, test topshiriqlari, amaliy mashqlar, baholash mezonlari hamda turli murakkablikdagi vazifalarni tayyorlashi mumkin. Shuningdek, o'quvchilar mavzuga oid qo'shimcha

izohlar olishlari, misollar yechimini tahlil qilishlari va mustaqil ishlash jarayonida sun'iy intellektdan foydalanishlari mumkin.

Ta’lim tashkilotlari yuqori texnologiyali darsliklar va darsliklar bilan bir qatorda raqamli texnologiyalarni keng yoyishlari kerak. Raqamli ta’lim texnologiyalari - bu ko‘rinishni ta’minlaydigan elektron tizimlardan foydalanishga asoslangan o‘quv jarayonini tashkil etishning innovatsion usulidir. Raqamli texnologiyalardan foydalanishdan maqsad o‘quv jarayonining sifati va samaradorligini oshirish, shuningdek, talabalarni muvaffaqiyatli ijtimoiylashtirishdir [2].

Talabalarni tayyorlashda raqamli texnologiyalarning imkoniyatlari orasida quyidagilarni qayd etish mumkin:

- ✓ topshiriqlarni bajarish va o‘quv materiallarining harakatchanligini oshirish;
- ✓ talabalarning motivatsiyasini oshirish;
- ✓ o‘quv jarayonini individuallashtirish;
- ✓ materiallarning korinishini oshirish;
- ✓ o‘qituvchidan tezkor fikr-mulohazalarni amalga oshirish;
- ✓ talabalarga topshiriqni bajargandan so‘ng darhol natijalarga kirishni ta’minlash.

Bulutli texnologiyalar sun'iy intellekt tizimlarining samarali ishlashini ham ta'minlaydi. AI xizmatlarining aksariyati bulutli platformalarda joylashgan bo'lib, foydalanuvchilarga internet orqali katta hisoblash quvvatidan foydalanish imkonini beradi. Bu esa ta'lim muassasalarida qimmat serverlar xarid qilmasdan zamonaviy sun'iy intellekt vositalaridan foydalanishga sharoit yaratadi.Raqamli texnologiyalar jamiyat hayotining ajralmas qismidir, shuning uchun ularni oquv jarayoniga osongina integratsiya qilish mumkin bo‘ladi, chunki talabalar o‘z hayotlarida turli xil elektron vositalardan foydalanishga odatlangan va bu ularga turli xil texnologiyalar bilan

ishlashni osonlashtiradi, elektron vositalar va ma’lumotlarni osonroq qabul qilish va materiallarni o‘zlashtirish imkoniyatini beradi.

Raqamli texnologiyalarning asosiy turlari orasida quyidagilarni ajratib ko‘rsatish mumkin: mobil ta’lim, bulutli texnologiya, onlayn kurslar, gamifikatsiya va veb-kvest . Mobil ta’lim texnologiyasi ta’lim sohasida eng ko‘p talabga ega. Undan foydalanish tufayli eng qulay va samarali hamkorlik, bilim almashish imkoniyati mavjud. O‘quv jarayoni sub’ektlari simsiz tarmoqlar, cho‘ntak shaxsiy kompyuterining infraqizil funktsiyalaridan foydalangan holda masofadan turib material almashishlar, mobil qurilmalarni talabalar guruhiga o‘tkazishlari mumkin. [2]

Maqolaning maqsadi yuqori malakali mutaxassislarni tayyorlashda raqamli ta’lim texnologiyalarining imkoniyatlarini ochib berishdir.

Ushbu maqsadga erishish uchun quyidagi vazifalarni hal qilish kerak:

- ta’lim sohasida raqamli ta’lim texnologiyalarining rolini aniqlash;
- raqamli ta’lim texnologiyalarining asosiy turlarini va ularni o‘quv jarayoniga qo‘llashni ko‘rib chiqish.
- Olingan ilmiy natijalarni to‘liq asoslagan holda tadqiqotning asosiy materialini taqdim etish.
- ta'limda raqamli texnologiyalarning o'rnini aniqlash;
- sun'iy intellekt texnologiyalarining ta'limdagi imkoniyatlarini tahlil qilish;
- AI vositalarini o'quv jarayoniga integratsiyalash usullarini ko'rib chiqish;
- raqamli va AI texnologiyalarining afzalliklari hamda mavjud muammolarini yoritish.

Raqamli texnologiyalar o‘quv jarayonini differentsiallashtirish, uni har bir o‘quvchining ehtiyojlariga mos ravishda qurish, tayyorgarlik darajasiga mos keladigan vazifalarni berish va shu bilan ta’lim sifatini oshirish imkonini beradi. Raqamli vositalardan foydalanish talabaning o‘quv jarayonining faol sub’ektiga aylanishi uchun

sharoit yaratishga yordam beradi. Passiv idrokdan u faol harakatlarga o‘tadi va vazifalarni bajarishga kirishadi.

Bulutli texnologiyalar tarmoqqa qulay kirish imkoniyatiga ega, foydalanuvchiga katta hajmdagi ma’lumotlarni saqlash imkonini beradi va undan minimal boshqaruv harakatlari bilan foydalanish imkoni mavjud, ya’ni bulut ma’lumotlarni tarqatish, qayta ishlash va saqlash imkoniyatiga ega.

Kelajakda sun'iy intellekt o'qituvchini almashtirmaydi, balki uning kasbiy faoliyatini yanada samarali tashkil etuvchi raqamli yordamchi sifatida xizmat qiladi. Shu sababli pedagoglarning AI bo'yicha kompetensiyalarini rivojlantirish, ularni zamonaviy raqamli vositalardan samarali foydalanishga o'rgatish ta'lim sifatini oshirishning muhim omillaridan biri hisoblanadi.Ta’limda raqamli texnologiyalarni qo‘llash, misol uchun, uy guruhidagi tadqiqot loyihalari, hisobotlar, taqdimotlar yarating, bu erda har bir talaba o‘quv ishlarining o‘z bo‘limi uchun javobgardir, lekin ayni paytda boshqa bloklarni tahrirlashi va o‘zgartirishi mumkin. Har bir talaba tomonidan kiritilgan o‘zgartirishlar umumiy hujjatga sinxronlashtiriladi. Bulutli texnologiya masofaviy ta’lim asosida qo‘llanilishi mumkin. Masalan, o‘qituvchi universitetning elektron tizimiga topshiriqlar, amaliy ishlar va boshqa yozma topshiriqlarni joylashtirsa, bunda talabaning vazifasi o‘qituvchi tomonidan tuzilgan hujjatdagi mashqlarni bajarishdir. Bular quyidagi turdagi vazifalar bo‘lishi mumkin: jadval yoki matndagi bo‘shliqlarni to‘ldirish, savollarga javob berish yoki fikrni davom ettirish. Ish davom etar ekan, o‘qituvchi topshiriqlarni tekshiradi, chunki u hujjatga kirish huquqiga ega.

Ta'lim tizimini raqamlashtirish va sun'iy intellekt texnologiyalarini joriy etish bugungi kunning eng muhim vazifalaridan biridir. Raqamli vositalar ta'lim jarayonini tashkil etishning samaradorligini oshirsa, sun'iy intellekt har bir o'quvchining individual ehtiyojidan kelib chiqib moslashtirilgan ta'limni tashkil etishga xizmat qiladi. Shu bilan birga, AI texnologiyalaridan foydalanishda akademik halollik, axborot xavfsizligi,

shaxsiy ma'lumotlarni himoya qilish hamda o'qituvchining nazorat funksiyasini saqlab qolish muhim hisoblanadi.

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AUTOMATIC LAND COVER CLASSIFICATION FROM SENTINEL-2 IMAGES USING DEEP LEARNING ALGORITHMS

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Abstract

This topic analyzes the application of deep learning algorithms for the automatic classification of land cover types using Sentinel-2 satellite imagery. The study examines the structures of convolutional neural networks (CNNs), encoder-decoder architectures (U-Net, SegNet), densely connected networks (DenseNet), and modern transformer-based models, as well as data preparation stages (atmospheric correction, normalization, spectral index calculation) and evaluation metrics (overall accuracy, Kappa coefficient, F1-score, IoU). Prospects for their application in the context of Uzbekistan—specifically for monitoring agricultural crops, assessing soil salinity levels in irrigated lands, and tracking landscape changes in the Aral Sea basin—are substantiated. The research results demonstrate the superiority of deep learning-based methods over traditional pixel-based classification techniques in terms of accuracy and scalability.

Keywords

deep learning, Sentinel-2, land cover, convolutional neural network, semantic segmentation, U-Net, remote sensing, geographic information systems.

CHUQUR O‘RGANISH ALGORITMLARI YORDAMIDA SENTINEL-2 TASVIRLARIDAN YER QOPLAMINI AVTOMATIK ANIQLASH

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Annotatsiya. Ushbu mavzuda Sentinel-2 sun’iy yo‘ldosh tasvirlari asosida yer qoplami turlarini avtomatik aniqlashda chuqur o‘rganish algoritmlarining qo‘llanilishi tahlil qilingan. Konvolyutsion neyron tarmoqlar (CNN), kodlovchi-dekodlovchi arxitekturalar (U-Net, SegNet), zich bog‘langan tarmoqlar (DenseNet) va zamonaviy transformer asosidagi modellarning tuzilishi, ma’lumotlarni tayyorlash bosqichlari (atmosfera korreksiyasi, normalizatsiya, spektral indekslarni hisoblash) hamda baholash mezonlari (umumiy aniqlik, Kappa koeffitsiyenti, F1-ball, IoU) ko‘rib chiqilgan. O‘zbekiston sharoitida - xususan, qishloq xo‘jaligi ekinlarini monitoring qilish, sug‘oriladigan yerlarning sho‘rlanish darajasini baholash va Orol dengizi havzasidagi landshaft o‘zgarishlarini kuzatishda qo‘llanilish istiqbollari asoslab berilgan. Tadqiqot natijalari chuqur o‘rganishga asoslangan usullarning an’anaviy piksel asosidagi klassifikatsiya usullariga nisbatan aniqlik va masshtablanuvchanlik jihatidan ustunligini ko‘rsatadi.

Kalit so‘zlar: chuqur o‘rganish, Sentinel-2, yer qoplami, konvolyutsion neyron tarmoq, semantik segmentatsiya, U-Net, masofadan zondlash, geoaxborot tizimlari.

АВТОМАТИЧЕСКАЯ КЛАССИФИКАЦИЯ ЗЕМНОГО ПОКРОВА ПО СНИМКАМ SENTINEL-2 С ИСПОЛЬЗОВАНИЕМ АЛГОРИТМОВ ГЛУБОКОГО ОБУЧЕНИЯ

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Аннотация. В данной работе анализируется применение алгоритмов глубокого обучения для автоматической классификации типов земного покрова с использованием спутниковых снимков Sentinel-2. Рассматриваются структуры сверточных нейронных сетей (CNN), архитектуры типа «кодировщик-декодировщик» (U-Net, SegNet), плотно связанные сети (DenseNet) и современные модели на основе трансформеров, а также этапы подготовки данных (атмосферная коррекция, нормализация, расчет спектральных индексов) и метрики оценки качества (общая точность, коэффициент Каппа, F1-мера, IoU). Обосновываются перспективы применения данных методов в условиях Узбекистана, в частности для мониторинга сельскохозяйственных культур, оценки уровня засоления почв на орошаемых землях и отслеживания изменений ландшафта в бассейне Аральского моря. Результаты исследования демонстрируют превосходство методов глубокого обучения над традиционными методами попиксельной классификации с точки зрения точности и масштабируемости.

Ключевые слова: глубокое обучение, Sentinel-2, земной покров, сверточная нейронная сеть, семантическая сегментация, U-Net, дистанционное зондирование, геоинформационные системы.

Kirish

Yer qoplami va undan foydalanish tarzini aniq va tezkor baholash - qishloq xo‘jaligini rejalashtirish, tabiiy resurslarni boshqarish, shaharlarning kengayishini nazorat qilish hamda ekologik monitoring uchun muhim amaliy ahamiyatga ega. Yevropa kosmik agentligining (ESA) Copernicus dasturi doirasida ishga tushirilgan Sentinel-2 sun’iy yo‘ldosh juftligi (Sentinel-2A - 2015-yil, Sentinel-2B - 2017-yilda orbitaga chiqarilgan) 13 ta spektral kanalda, 10, 20 va 60 metrlik fazoviy o‘lchamlarda, 290 km kenglikdagi polosada va o‘rtacha 5 kunlik qayta kuzatish davri bilan Yer yuzasi haqida bepul va ochiq ma’lumotlar taqdim etadi. Bunday hajmdagi va sifatdagi ma’lumotlarni qayta ishlash uchun an’anaviy piksel asosidagi klassifikatsiya usullari (masalan, maksimal ehtimollik yoki tasodifiy o‘rmon algoritmlari) yetarli darajada moslashuvchan emas, chunki ular fazoviy kontekstni to‘liq hisobga olmaydi va murakkab landshaft chegaralarida хатоликка yo‘l qo‘yadi.

So‘nggi o‘n yillikda chuqur o‘rganish (Deep Learning) texnologiyalari, xususan konvolyutsion neyron tarmoqlar (CNN) va ularning semantik segmentatsiya uchun moslashtirilgan kodlovchi-dekodlovchi arxitekturalari (SegNet, U-Net, DenseNet), masofadan zondlash sohasida yuqori natijalarga erishmoqda. Bu arxitekturalar tasvirning nafaqat spektral, balki fazoviy xususiyatlarini ham avtomatik tarzda o‘rganish imkonini beradi, natijada yer qoplami sinflarini ajratish aniqligi sezilarli darajada oshadi. Ushbu maqolaning maqsadi - Sentinel-2 tasvirlaridan yer qoplamini avtomatik aniqlashda qo‘llanilayotgan zamonaviy chuqur o‘rganish algoritmlarini tizimli tahlil qilish, ularning metodologik asoslarini yoritish va O‘zbekiston sharoitida amaliy qo‘llanilish imkoniyatlarini asoslashdan iborat.

ADABIYOTLAR TAHLILI VA TADQIQOT METODOLOGIYASI

Sentinel-2 tasvirlarini dastlabki qayta ishlash

Chuqur o‘rganish modellarini o‘qitishdan oldin Sentinel-2 ma’lumotlari bir qator qayta ishlash bosqichlaridan o‘tkaziladi: atmosfera korreksiyasi (Sen2Cor algoritmi

yordamida L1C darajasidagi tasvirlarni L2A yer yuzasi aks ettirish darajasiga o‘tkazish), bulutlarni va soyalarni niqoblash, kanallarning fazoviy o‘lchamini bir xillashtirish (resampling), radiometrik normalizatsiya hamda NDVI (o‘simlik indeksi), NDWI (suv indeksi), NDBI (qurilgan maydonlar indeksi) kabi spektral indekslarni qo‘shimcha kanal sifatida hisoblash. Ma’lumotlar odatda 128×128 yoki 256×256 piksellik parchalarga (patch) bo‘linadi va o‘qitish, tekshirish hamda test to‘plamlariga ajratiladi.

Konvolyutsion va kodlovchi-dekodlovchi arxitekturalar

Ben Hamida va boshqalar tomonidan o‘tkazilgan tadqiqotda DenseNet va SegNet arxitekturalari Sentinel-2 tasvirlaridan keng maydonli yer qoplamini semantik segmentatsiya qilish uchun qo‘llanilgan; taklif qilingan 3D-DenseNet modeli spektral va fazoviy o‘lchovlarni birgalikda qayta ishlash imkonini bergan, SegNet arxitekturasi esa yirik hajmdagi (27 mln. dan ortiq parametrli) tarmoq sifatida 66,9–83,9 foizgacha umumiy aniqlikka erishgan [8]. Ronneberger va boshqalar tomonidan taklif qilingan U-Net arxitekturasi - qisqartiruvchi (encoder) va kengaytiruvchi (decoder) tarmoqlarni o‘tkazish bog‘lanishlari (skip connections) orqali birlashtiruvchi tuzilma - hozirda yer qoplami segmentatsiyasida eng ko‘p qo‘llaniladigan modellardan biri hisoblanadi [9]. Ulmas va Liiv BigEarthNet ma’lumotlar to‘plami hamda Estoniya hududi uchun tuzilgan Sentinel-2/CORINE juftligidan foydalanib, U-Net asosidagi modelda ko‘p sinfli yer qoplami klassifikatsiyasi bo‘yicha 0,749 darajasidagi umumiy F1-ballga erishgan, shu bilan birga o‘rmon, ichki suv havzalari va haydaladigan yerlar sinflari uchun yuqori IoU ko‘rsatkichlarini qayd etgan [10].

Kroupi va boshqalar chuqur konvolyutsion neyron tarmoq asosida ishlab chiqilgan quvur liniyasi (pipeline) yordamida ilgari ko‘rilmagan xom Sentinel-2 tasvirlarida 86 foizlik klassifikatsiya aniqligiga erishganliklarini ko‘rsatgan [11]. Kotaridis va Lazaridou esa superpiksel segmentatsiyasini chuqur o‘rganish bilan uyg‘unlashtirgan holda, qurilgan maydonlar, o‘simlik qoplami, ochiq yer va suv havzalari kabi asosiy yer

qoplami sinflarini shahar va shahar atrofi landshaftlarida xaritalashtirish uchun UNET arxitekturasidan foydalangan, spektral kanallar va indekslar kombinatsiyasi qurilgan hudud va ochiq yer sinflarini ajratish sifatini oshirishga xizmat qilishini asoslab bergan [12].

Baholash mezonlari

Chuqur o‘rganish modellarining samaradorligini baholashda quyidagi statistik mezonlardan foydalaniladi: umumiy aniqlik (Overall Accuracy, OA) - to‘g‘ri klassifikatsiya qilingan piksellarning umumiy soniga nisbati; Kappa koeffitsiyenti - tasodifiy mos kelishni hisobga olgan holda tuzatilgan aniqlik ko‘rsatkichi; aniqlik (precision) va eslab qolish (recall) ko‘rsatkichlarining garmonik o‘rtachasi bo‘lgan F1-ball; hamda semantik segmentatsiya sifatini baholashda keng qo‘llaniladigan Jaccard indeksi (Intersection over Union, IoU). Ushbu mezonlarning barchasi bo‘yicha yuqori ko‘rsatkichga erishish uchun o‘qitish namunalarining sifati va miqdori, shuningdek sinflar orasidagi muvozanat hal qiluvchi ahamiyatga ega.

Natijalarning qiyosiy tahlili

Quyidagi jadvalda ko‘rib chiqilgan tadqiqotlarda qo‘llanilgan arxitekturalar va ularning asosiy natijalari qiyosiy tarzda keltirilgan.

Tadqiqot	**Qo‘llanilgan arxitektura**	**Ma’lumotlar to‘plami**	**Asosiy natija**
Ben Hamida va b. (2017)	3D-DenseNet, SegNet	Sentinel-2, GlobCover	OA 66,9–83,9% (yirik model)
Kroupi va b. (2019)	CNN (quvur liniyasi)	Xom Sentinel-2 tasvirlari	Aniqlik ~86%
Ulmas, Liiv (2020)	U-Net	BigEarthNet, CORINE	F1 ≈ 0,749
Kotaridis, Lazaridou (2022)	UNET + superpiksel	Sentinel-2, shahar hududi	Sinflar bo‘yicha yuqori IoU

O‘zbekiston sharoitida qo‘llanilish istiqbollari

O‘zbekiston hududi, xususan Orol dengizi havzasi va Farg‘ona vodiysi kabi intensiv sug‘oriladigan agrar mintaqalari uchun Sentinel-2 tasvirlari asosidagi chuqur o‘rganish usullari bir qator amaliy vazifalarni yechishda qo‘llanilishi mumkin: ekin turlarini fasl davomida kuzatish va xaritalashtirish, sug‘oriladigan yerlarning sho‘rlanish va degradatsiya darajasini baholash, yer resurslari kadastri ishlarini yuritishda monitoring kartalaridan foydalanishni takomillashtirish [1] hamda Markaziy Osiyo miqyosida yagona uslubiyot asosida ekin turlarini klassifikatsiya qilish uchun tuzilgan ma’lumotlar to‘plamlaridan foydalanish [7]. Bunday tizimlarni amalga oshirishda sun’iy intellekt texnologiyalari asosida ma’lumotlarni tahlil qilish model va algoritmlaridan foydalanish [2], shuningdek geoaxborot tizimlari (GAT) infratuzilmasini rivojlantirish [4] muhim ahamiyat kasb etadi.

XULOSA

Xulosalar shuni ko‘rsatadiki, chuqur o‘rganish algoritmlari, xususan U-Net, SegNet va DenseNet kabi kodlovchi-dekodlovchi arxitekturalar, Sentinel-2 sun’iy yo‘ldosh tasvirlaridan yer qoplami turlarini avtomatik aniqlashda an’anaviy piksel asosidagi usullarga nisbatan yuqori aniqlik (86 foizgacha) va yaxshi masshtablanuvchanlik ko‘rsatadi. Modelning yakuniy samaradorligi ko‘p jihatdan sifatli va muvozanatlashgan o‘qitish namunalari, to‘g‘ri tanlangan spektral indekslar hamda mos baholash mezonlari (OA, Kappa, F1, IoU) qo‘llanilishiga bog‘liq. O‘zbekiston sharoitida bunday texnologiyalarni joriy etish qishloq xo‘jaligi monitoringi, sug‘oriladigan yerlarning holatini baholash va yer kadastri ishlarini raqamlashtirish samaradorligini sezilarli darajada oshirishga xizmat qiladi. Kelgusi tadqiqotlarda transformer asosidagi arxitekturalar (masalan, Vision Transformer) va ko‘p vaqtli (multi-temporal) Sentinel-2 ma’lumotlarini birgalikda qayta ishlashga asoslangan modellarni O‘zbekiston hududiy sharoitlariga moslashtirish istiqbolli yo‘nalish bo‘lib qolmoqda.

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WATER RESOURCES – AN IMPORTANT FACTOR IN HUMAN LIFE AND SUSTAINABLE DEVELOPMENT

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Abstract

This thesis discusses the importance of water resources for human life, agriculture, industry and environmental sustainability. Today, climate change, population growth, urbanization and increasing water demand in different economic sectors have made the rational and efficient use of water resources an increasingly important issue. In Central Asia, particularly in Uzbekistan, limited water availability requires improving irrigation efficiency, reducing water losses and expanding modern water-saving technologies.

The study examines the main areas of water use, protection of water quality, water conservation in agriculture, wastewater reuse, groundwater protection and the application of digital technologies in water management. Under the conditions of Uzbekistan, drip and sprinkler irrigation, modernization of irrigation canals, automated water accounting, remote sensing and geographic information systems can contribute significantly to improving the efficiency and sustainability of water resources management.

Keywords

water resources, water scarcity, irrigation, water-saving technologies, climate change, water quality, wastewater, digital monitoring, environmental sustainability.

SUV RESURSLARI – INSON HAYOTI VA BARQAROR RIVOJLANISHNING MUHIM OMILI

ERGASHALIYEV MUXAMMADAZIZ AZAMAT O‘G‘LI
G‘ANIYEV SAMANDAR ABDUSAMAT O‘G‘LI
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Annotatsiya

Ushbu tezisda suv resurslarining inson hayoti, qishloq xo‘jaligi, sanoat va ekologik barqarorlikni ta’minlashdagi ahamiyati yoritilgan. Bugungi kunda global iqlim o‘zgarishi, aholi sonining ortishi, urbanizatsiya va iqtisodiyotning turli tarmoqlarida suvga bo‘lgan talabning oshishi suv resurslaridan oqilona foydalanishni dolzarb masalaga aylantirmoqda. Ayniqsa, Markaziy Osiyo, jumladan O‘zbekiston sharoitida suv resurslarining cheklanganligi irrigatsiya samaradorligini oshirish, suv yo‘qotishlarini kamaytirish va zamonaviy suv tejovchi texnologiyalarni keng joriy etishni talab etadi.

Tadqiqotda suv resurslarining asosiy foydalanish yo‘nalishlari, suv sifatini muhofaza qilish, qishloq xo‘jaligida suvni tejash, oqova suvlarni qayta foydalanish, yer osti suvlarini muhofaza qilish hamda raqamli texnologiyalardan foydalanish masalalari tahlil qilindi. O‘zbekiston sharoitida tomchilatib va yomg‘irlatib sug‘orish, kanallarni rekonstruksiya qilish, suv hisobini avtomatlashtirish, masofadan zondlash va geografik axborot tizimlari asosida monitoring olib borish suv resurslaridan foydalanish samaradorligini oshirishning muhim yo‘nalishlari sifatida ko‘rib chiqildi.

Kalit so‘zlar: suv resurslari, suv tanqisligi, irrigatsiya, suv tejovchi texnologiyalar, iqlim o‘zgarishi, suv sifati, oqova suvlar, raqamli monitoring, ekologik barqarorlik.

Kirish

Suv insoniyat hayoti va jamiyat taraqqiyotining eng muhim tabiiy resurslaridan biridir. Inson organizmining normal faoliyati, qishloq xo‘jaligi mahsulotlarini yetishtirish, sanoat korxonalarining ishlashi, energetika, sanitariya va ekotizimlarning barqarorligi suv resurslari bilan bevosita bog‘liq.

Suvning ahamiyati faqat uning biologik zarurat ekanligi bilan chegaralanmaydi. Suv resurslari oziq-ovqat xavfsizligi, iqtisodiy rivojlanish va ekologik muvozanatning muhim omili hisoblanadi. Shu sababli XXI asrda suv resurslarini boshqarish masalasi nafaqat ekologik, balki iqtisodiy va ijtimoiy masala sifatida ham qaralmoqda.

UNESCOning 2025-yilgi BMT Jahon suv rivojlanishi hisobotida tog‘lar va muzliklar dunyo chuchuk suv oqimlarining katta qismini shakllantirishi, iqlim o‘zgarishi esa muzliklarning erishi, qor qoplamining kamayishi va suv oqimlarining yanada o‘zgaruvchan bo‘lishiga olib kelayotgani ta’kidlangan.

O‘zbekiston sharoitida suv resurslarining dolzarbligi

O‘zbekiston qishloq xo‘jaligida sug‘oriladigan dehqonchilik katta ahamiyatga ega bo‘lgan mamlakatlardan biridir. Shu sababli suv resurslarining miqdori va undan foydalanish samaradorligi oziq-ovqat xavfsizligi hamda qishloq xo‘jaligi ishlab chiqarishining barqarorligiga bevosita ta’sir ko‘rsatadi. Suv tanqisligi sharoitida asosiy vazifa mavjud suv resurslarini shunchaki ko‘paytirish emas, balki ulardan foydalanish samaradorligini oshirishdir. Buning uchun suv yo‘qotishlarini kamaytirish, sug‘orish tarmoqlarining texnik holatini yaxshilash, suv hisobini takomillashtirish va suv tejovchi sug‘orish texnologiyalarini keng joriy etish talab etiladi. O‘zbekistonda 2025–2028-yillarga mo‘ljallangan suv resurslarini boshqarish va irrigatsiya sektorini rivojlantirish dasturida irrigatsiya tarmoqlarining ayrim qismlarini rekonstruksiya qilish, suv ta’minoti past bo‘lgan maydonlarni qisqartirish hamda suv resurslarini oqilona boshqarish bo‘yicha aniq vazifalar belgilangan. 2025-yilgi sug‘orish mavsumida mamlakat bo‘yicha qishloq xo‘jaligiga 29,15 mlrd m³ suv yetkazib berilgan va yanvar–sentabr oylarida turli suv tejash tadbirlari orqali 8 mlrd m³ suv iqtisod qilingan. Bu ko‘rsatkichlar suvni tejash texnologiyalarining amaliy ahamiyati tobora ortib borayotganini ko‘rsatadi.

Suvni tejashning zamonaviy texnologiyalari

Qishloq xo‘jaligida suvdan samarali foydalanishning asosiy yo‘nalishlaridan biri suv tejovchi sug‘orish texnologiyalaridan foydalanishdir. Jumladan, tomchilatib sug‘orish, yomg‘irlatib sug‘orish, tuproq ichidan sug‘orish va boshqa zamonaviy texnologiyalar suvni bevosita o‘simlikning ildiz zonasiga yetkazish imkonini beradi. Tomchilatib sug‘orishda suv kichik sarf bilan o‘simlik ildiz zonasiga beriladi. Bu usul suv bilan bir qatorda mineral o‘g‘itlardan foydalanish samaradorligini ham oshirish imkonini beradi. Yomg‘irlatib sug‘orishda esa suv maxsus purkagichlar orqali mayda tomchilar shaklida o‘simliklar va tuproqqa yetkaziladi. Bundan tashqari, suv resurslarini boshqarishda raqamli texnologiyalardan foydalanishning ahamiyati ortmoqda. Masofadan zondlash ma’lumotlari, geografik axborot tizimlari, avtomatlashtirilgan suv o‘lchash qurilmalari, meteorologik ma’lumotlar va sun’iy intellektga asoslangan tahlil vositalari suv taqsimotini optimallashtirish va sug‘orish ehtiyojini aniqlashda qo‘llanishi mumkin.

2026-yilgi rasmiy ma’lumotlarda O‘zbekistonda suv tejovchi texnologiyalar qamrovini kengaytirish, suv yo‘qotishlarini kamaytirish va suv xo‘jaligini modernizatsiya qilishga alohida e’tibor qaratilayotgani qayd etilgan.

Suv sifati va inson salomatligi

Suvning miqdori bilan bir qatorda uning sifati ham muhim ahamiyatga ega. Ichimlik suvida mikrobiologik va kimyoviy ifloslantiruvchi moddalar mavjudligi inson salomatligiga xavf tug‘dirishi mumkin. Jahon sog‘liqni saqlash tashkilotining ichimlik suvi sifati bo‘yicha 2026-yilda yangilangan qo‘llanmasida suv xavfsizligini ta’minlashda manbadan iste’molchigacha bo‘lgan butun jarayonni riskka asoslangan boshqarish, monitoring va nazorat qilishga e’tibor qaratilgan. Ayniqsa, og‘ir metallar, nitratlar, mikrobiologik ifloslanish va boshqa kimyoviy birikmalar suv sifatini nazorat qilishda muhim ko‘rsatkichlardir. Masalan, WHO qo‘llanmalarida qo‘rg‘oshin ichimlik

suvidagi muhim kimyoviy xavflardan biri sifatida ko‘rsatiladi va uning miqdorini muntazam monitoring qilish tavsiya etiladi.

Shu sababli suv sifatini baholashda zamonaviy laboratoriya tahlillari bilan bir qatorda doimiy monitoring tizimlarini rivojlantirish zarur.

Oqova suvlarni qayta foydalanish

Suv resurslarini muhofaza qilishning yana bir muhim yo‘nalishi oqova suvlarni tozalash va qayta foydalanishdir. Sanoat, kommunal xo‘jalik va qishloq xo‘jaligi faoliyati natijasida hosil bo‘ladigan oqova suvlar yetarlicha tozalanmasdan tabiiy suv obyektlariga tushirilsa, suv ekotizimlarining ekologik holatiga salbiy ta’sir ko‘rsatishi mumkin. Oqova suvlarni mexanik, biologik va fizik-kimyoviy usullar yordamida tozalash, keyinchalik ularni texnik ehtiyojlar, sug‘orish yoki boshqa mos yo‘nalishlarda qayta ishlatish chuchuk suvga bo‘lgan talabni kamaytiradi. Sanoat korxonalarida esa yopiq suv aylanish tizimlarini joriy etish, texnologik jarayonlarda suv sarfini optimallashtirish va tozalangan suvni qayta ishlatish suv resurslaridan foydalanish samaradorligini oshiradi.

Yer osti suvlarini muhofaza qilish

Yer osti suvlaridan ichimlik, qishloq xo‘jaligi va sanoat ehtiyojlarida foydalaniladi. Shu sababli ularni ifloslanishdan himoya qilish alohida ahamiyatga ega. Qishloq xo‘jaligida mineral o‘g‘itlardan me’yoridan ortiq foydalanish, chorvachilik chiqindilarining nazoratsiz tashlanishi va sanoat oqovalari yer osti suvlarining sifatiga salbiy ta’sir ko‘rsatishi mumkin. Yer osti suvlarini muhofaza qilish uchun sanitariya-himoya zonalarini tashkil etish, suv sifatini muntazam monitoring qilish, ifloslanish manbalarini aniqlash va GIS asosida xavf xaritalarini ishlab chiqish samarali yondashuvlardan hisoblanadi.

Ekologik madaniyat va suvdan oqilona foydalanish

Suv resurslarini tejash faqat texnik masala emas. Aholi, talabalar, fermerlar va korxona xodimlarining suvdan foydalanish madaniyatini shakllantirish ham muhim ahamiyatga ega. Ayniqsa, yoshlar orasida suvning cheklangan tabiiy resurs ekanligini anglash, suvni behuda sarflamaslik, suv obyektlarini ifloslantirmaslik va suv tejovchi texnologiyalardan foydalanish ko‘nikmalarini shakllantirish zarur. O‘zbekistonning “Uzbekistan–2030” strategiyasida ham suv resurslarini tejash va atrof-muhitni muhofaza qilish ustuvor yo‘nalishlardan biri sifatida belgilangan.

Xulosa

Suv insoniyatning biologik mavjudligi, iqtisodiy rivojlanishi va ekologik barqarorligini ta’minlovchi strategik tabiiy resursdir. Hozirgi davrda iqlim o‘zgarishi, suvga bo‘lgan talabning ortishi va ayrim hududlarda suv resurslarining cheklanishi suvdan oqilona foydalanish masalasini yanada dolzarb qilmoqda.

O‘zbekiston sharoitida suv resurslarini samarali boshqarish uchun irrigatsiya tizimlarini modernizatsiya qilish, suv tejovchi sug‘orish texnologiyalarini keng joriy etish, suv hisobini raqamlashtirish, masofadan zondlash va GIS texnologiyalaridan foydalanish, oqova suvlarni qayta ishlatish hamda yer osti suvlarini muhofaza qilish zarur.Shuningdek, suvni tejash bo‘yicha texnik choralar ekologik ta’lim va aholining suvdan foydalanish madaniyati bilan uyg‘unlashtirilishi kerak. Suv resurslarini asrash bugungi avlodning ehtiyojlarini qondirish bilan birga kelajak avlodlar uchun ham yetarli suv zaxiralarini saqlab qolishning muhim shartidir.

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The Translation of Historical and Archaic Terms Related to Science in Odil Yoqubov's "ULUG'BEK XAZINASI" into English

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Abstract

This article analyzes how scientific terms in Odil Yakubov's novel "The Treasure of Ulugbek " are rendered in English translation, drawing on various translation theories. As a historical novel that illuminates the life and intellectual path of the great scientist Mirzo Ulugbek, the work spans multiple scientific fields, including mathematics, astronomy, and geometry. These terms are discussed extensively in terms of meaning and content throughout the novel. In the course of this research, the translation transformations, methods, and the degree of equivalence used in translating units such as geometry, mathematics, calligraphy, somon yo'li, sitora, mudarris, chambar yo'li, sudsi-faxri, Zuhro, and Mushtariy are examined. A general analysis shows that the translator used modern equivalents for some terms, while others were translated through descriptive translation, transliteration, and functional equivalence, depending on the context of each term.

Keywords

scientific term, historical novel, translation transformations, astronomical units, adequacy, equivalence, alternative.

Odil Yoqubovning "ULUG'BEK XAZINASI" asaridagi ilm-fanga oid tarixiy-arxaik terminlarning inglizcha tarjimada berilishi

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Annotatsiya

Ushbu maqolada Odil Yoqubovning “Ulug‘bek xazinasi” romanida qo‘llangan ilm-fanga oid terminlaning inglizcha tarjimada qanday berilgani turli tarjima nazariyalari aosida tahlil qilinadi. Asar tarixiy roman ekanligi va buyuk olim Mirzo Ulug`bekning hayot va ilm-ma`rifat yo`lini yoritganligi bois, undagi terminlar-matematika, astronomiya, geometriya kabi turli fan sohalarini o‘z ichiga olib, ma`no-mazmun jihatdan keng ko‘lamda yoritilgan va asarni boshidan oxirigacha qamrab olgan. Ushbu tadqiqot davomida handasa, riyoziyot, xattot, somon yo`li, sitora, mudarris, chambar yo`li, sudsi-faxri, Zuhro , Mushtariy kabi birliklarni o‘girishda qanday tarjima transformatsiyalari, usullari qo`llanilganligi va ekvivalentlik darajasi o‘rganiladi. Umumiy tahlil shuni ko`rsatadiki, tarjimon har bir terminning q o‘llanish holati va kontekstdan kelib chiqib, ayrim terminlarni zamonaviy ekvivalentlar orqali bersa, ba`zilarini esa deskriptiv tarjima, transliteratsiya va fuknsional ekvivalentlik orqali tarjima qilgan.

Kalit so`zlar: ilmiy termin, tarixiy roman, tarjima transformatsiyalari, astronomik birliklar, adekvatlik, ekvivalentlik, muqobillik.

Kirish

Milliy adabiyotimiz ulug` allomalar, hukmdorlar va ulamolar hayot yo`li va ilm-ma`rifatga qo`shgan ulkan hissasini yoritib beruvchi ko`plab tarixiy ruhdagi asarlarga boy. Ayniqsa bular orasida shoh va shoir, shoh va olim iboralari ham bizning ajdodlarimizga xos. Shulardan biri Odil Yoqubovning “Ulug‘bek xazinasi” tarixiy romanidir. Asar yaratilganidan buyon nafaqat O‘zbek kitobxonlari, balki xorij adabiyoti ixlosmandlari va tarixchilar tomonidan katta qiziqish va ishtiyoq bilan mutolaa qilinib kelinmoqda. Asarning juda ko`plab xorijiy tillarga tarjima qilingani va bu jarayon uzluksiz davom etib, uning jahon adabiyotida O‘zining beqiyos o`rniga ega bo`lishiga asos bo`lib kelayotgani ma`lum. Joriy yilning birinchi yarmida asarning ingliz tiliga

tarjimasi ham milliy adabiyotimizda ulkan yangilik bo`ldi va asarning makon va zamon tanlamas xuxusiyati O‘z isbotini topmoqda. Uning ingliz kitobxonlari, olimlari va tarixchilari tomonidan katta qiziqish bilan kutib olingani bir katta yutuq bo`lsa, ikkinchi tomondan bu tarjimashunoslar uchun yangi ilmiy tahlil uchun imkoniyat yaratib berdi. Asar XV asr temuriylar davri saroy hayoti, harbiy harakatlar va ilm-ma`rifat dunyosi O‘sha davr muhitini yoritib beradi. Bu esa tarjimon uchun nafaqat tarjimashunoslik, adabiyotshunoslik va tilshunoslik jihatdan balki tarixiy ruhni saqlash jihatidan ham ulkan vazifalarni yuklaydi. Ushbu maqolada ilm-fanga oid terminlarning nafaqat lug`aviy-semantik balki milliy va tarixiy koloritni saqlash vazifasi ham tahlil qilinadi.

Asarda Mirzo Ulug`bek va Ali Qushchi (shogirdi) kabi ko`plab allomalarning temuriylar davridagi faoliyatini yoritib beruvchi matematika va astronomiyaga oid ilmiy terminlar davr muhitini yaratishda va ilm-ma`rifat yo`lidagi ulkan kashfiyotlar, ta`lim jarayonlarini yoritishda alohida O‘rin egallaydi. Ushbu birliklarni inglizchaga O‘girish jarayonida tarjimon qarshisida ikki katta vazifa turadi- birinchidan, terminlarning ilmiy mazmunini to`liq yetkazib berish, ikkinchidan, tarixiy davrga xos birliklarni O‘sha davr ma`rifiy muhitini saqlagan holda O‘girish. Tarixiy-arxaik so`zlarni zamonaviy ekvivalenti bilan berilishi xorij kitobxoni uchun ancha tushunarli bo`lsada, lekin tarixiy koloritni susayishiga ham yo`l qo`yib bo`lmaydi. Maqolada har bir terminning tarixiy va arxaiklik xususiyatlari to`g`ridan-tog`ri emas, balki har bir kontekstdan kelib chiqib, tarixiy davrga munosabati va tarjima funksiyasi asosida ko`rib chiqiladi.

Tahlil

Astronomik terminlarning inglizcha tarjimada berilishi

Romanning ilk sahifasidayoq muhim ilmiy terminga duch kelinadi – bu sudsi faxri so`zidir.

Asarda: *“...pastda o‘rnatilgan sudsi-faxri sathida sayr etayotgan yulduzlar holati kuzatilib borilar edi.”*

Ushbu jumla inglizcha talqinda:

“...the wandering stars of heaven might be observed upon the sextant set into the floor.”

Sudsi-faxri O‘sha davrda qo`llanilgan astronomik uskuna bo`lib, ilmiy termin hisoblanadi. Asarda O‘sha davr muhitini saqlash uchun arxaik shaklda berilgan bo`lsa, tarjimada zamonaviy ekvivalenti-sekstant sifatida O‘girilgan. Tarjimon bu holatda so`zni transliteratsiya orqali berishni emas, balki ilmiy terminologik ekvivalentdan foydalanishni maqul ko`rgan. Shu sababdan denotativ va terminologik ekvivalentlik yuqori darajada saqlangan.

Tarjima usuli jihatidan qaraladigan bo`lsa, ushbu misolni semantik-kommunikativ tarjima deb tahlil qilish mumkin. Bu yerda O‘zbekcha ilmiy birlikning shakli emas, balki uning ilmiy vazifasi-mazmunini o`quvchiga tushunarli yetkazib berish maqsad qilib qo`yilgan. “Set into the floor” birikmasi bu uskunaning joylashuvini yanada aniqroq tushunishga xizmat qilgan kontekstual ifodadir. Umumiy olganda, sudsi-faxri asbobi tarjimada zamonaviy sekstant so`zi bilan almashtirilgani, uning ingliz O‘quvchisiga tushunarliligini ta`minlagan bo`lsa ham, davriy va milliy xususiyatlari ozroq susaygan.

Asarda turli astronomik jismlar nomlari ham tez-tez uchrab turadi. Bularga misol qilib Zuhro va Mushtariy yulduzlarini olish mumkin. Bular ingliz tiliga mos ravishda Venus va Jupiter tarzida o‘girilgan. Bu holatda Sharq astronomiyasidagi an`anaviy nomlar zamonaviy xalqaro astronomik birliklar bilan almashtirilgan. Bunday usul denotativ ekvivalentlikni kuchaytirib, tushunarlilikni yuqori darajada ta`minlaydi. Bu astronomik obyektlar faqatgina yulduz nomlari emas, balki Sharq ilmiy-madaniy an`analari bilan konnotatsiyaga egaligi sabab, tarixiy davr qarashlarini ochib berishga hissa qo`shgan. Tarjimada “falak qozisi” kabi obrazli ifodalar “the mighty Jupiter” va

“the radiant Venus” shaklidagi sifatlar bilan ifodalangan. Bu holatda nafaqat terminologik ekvivalentlik, balki stilistik eksplitatsiya ham qo`llanilgan. Buning natijasida, astronomik mazmun ingliz tilining tabiiy ifoda imkoniyatlari asosida tiklangan va tarixiy nom ma`lum darajada modernizatsiya qilingan.

Matematikaga oid terminlar

Asarda matematikaga oid ilmiy so`z : *“‘Riyoziyot’ni varaqlab uzoq turdi”* uchraydi.

Bu jumla inglizchada quyidagicha berilgan: *“He lingered at length over the pages of his Risola fi’l Hisob.”*

Mazkur holatda arxaik ilmiy nom — riyoziyot — o‘rniga Risola fi’l Hisob nomi ishlatilgan. Bu birliklar semantik jihatdan bir xil tushunchani anglatadi deyishdan oldin kontekstni ko`zdan kechirish zarur. Riyoziyot-umumiy matematika- fan nomini anglatsa, Risola fi’l Hisob matematikaga oid ilmiy asar nomi sifatida ko‘rinadi. Demak, bu tarjimada umumiy matematika tushunchasi yanada aniqlashtirilib, asar nomiga o‘tgan, ya’ni konkretlashtirish amalga oshirilgan. Tarjimon Risola fi’l Hisobni berishda transliteratsiyaga yaqin uslubni qo`llagan va sharq ilmiy an`anasining tarixiy xususiyatini saqlab qolishga erishgan. “Varaqlab uzoq turdi” birikmasini esa “Lingered at length over the pages” tarzida badiiy va tabiiy ifodalagan. Mazkur tarjimada stilistik va pragmatik ekvivalentlik yaxshi saqlansada, denotativ ekvivalentlikni ta`minlashda konkretlashtirish tufayli yetarlicha o‘zgarish bo`lgan.

Asarda handasa termini ham uchraydi: *“Mirzo Ulug‘bek esa ilmi riyoziyot va handasa borasida ust-ustiga savollar berdi.”*

Tarjimada: *“At once Mirzo Ulugbek began to question Ali Qushji on matters of mathematics and geometry.”*

Mazkur holatda tarjimon riyoziyotni mathematics, handasani esa geometry tarzida o‘girib, tarixiy ilmiy terminlarni ilm-fanda keng tanilgan zamonaviy nomlar bilan

almashtirgan. Bu usul xorij kitobxoni uchun ancha tushunarliroq bo`ladi. Biroq handasa so‘zining tarixiy ilmiy muhitga xos shakli zamonaviy geometry bilan almashtirilgani sababli uning tarixiy-lisoniy xususiyati zaiflashadi. Tarjimada so`zning ilmiy mazmuni to`liq yetkazilgan, ammo tarixiy-ilmiy terminologiyani saqlashda modernizatsiya qo`llangan. Shu boisdan, pragmatik va denotativ ekvivalentlik yuqori darajada, tarixiy-konnotativ ekvivalentlik esa qisman cheklangan deb baho berilishi mumkin.

Ilmiy-ma`rifiy muhitga oid tarixiy birliklar

Asarda tarixiy ilmiy muhitni ifodalovchi mavlono, mudarris kabi ko`plab birliklar uchraydi. Masalan bir jumlada: *“Mavlono Muhiddin Ulug‘bek madrasasiga mudarris etib tayinlangan yili…”* deb berilgan. Inglizcha tarjimada u *: “in the year when Mawlana Muhiddin had been appointed a teacher at the Ulugbek Madrasah…”* tarzida o‘girilgan.

Tarjimon uni inglizchaga mawlana va teacher shakllarida bergan. Mawlana birligi sharq ilmiy-ma`rifiy hayotining yaqqol konnotatsiyasini namoyon qilib, O‘zga madaniyat vakillariga foreignizatsiya talqinida kirib- tranlisteratsiya orqali berilgan. Bu orqali tarjimon nafaqat shaklni muvaffaqiyatli saqlagan, balki ilmiy madaniy realiyani berish orqali milliy madaniyat belgisini jahon adabiyotiga tanishtira olgan. Ammo, ikkinchi holat bundan tamomila farq qilib, foreignizatsiyadan uzoqlashgan holda-domestikatsiya usuli orqali berilgan, ya`ni mudarris so`zi teacher deb tarjima qilinib, tushuncha aslidan ko`ra umumiyroq ifodalangan va tarixiy jihatdan ham O‘z rangini qisman yo`qotgan.

Biroq mudarris oddiy “teacher” tushunchasidan ko‘ra torroq va tarixiy jihatdan muayyan vazifani anglatadi. U madrasa tizimida dars beruvchi, ilmiy-diniy bilimlarni o‘rgatuvchi shaxsni bildiradi. Teacher esa ushbu ma’noni umumiy tarzda ifodalaydi. Shuning uchun bu yerda funksional almashtirish va qisman umumlashtirish yuzaga kelgan.

Tarjima tushunarlilik jihatdan adekvat bo`lsa-da, tarixiy ilm-fan sohasidagi lavozimning institutsional xususiyati to`liq aks ettirilmagan. O‘z o‘rnida muqobil variantlar beriladigan bo`lsa, tarixiy koloritni kuchliroq saqlash maqsadida yangi birlik hosil qilib- madrasah scholar yoki madrasah teacher kabi variantlar ko`rib chiqilishi mumkin.

Xulosa

“Ulug‘bek xazinasi” tarixiy romanida XV asr temuriylar davri siyosiy, ma`rifiy va ijtimoiy hayotini shoh va olim Mirzo Ulug`bek umrining so`nggi yillari orqali ochib berilgan. Asarda buyuk olimning ilm-ma`rifat yo`lidagi izlanishlari, kashfiyotlari yoritilar ekan, tabiiyki ilm-fanga oid birliklar uning faoliyatini ochib berishda yaqqol qo`llanilgan. Ingliz tiliga qilingan tarjimada ilm-fanga oid tarixiy va an’anaviy terminlar asarni to`g`ri interpretatsiya qilishda ham juda muhim ahamiyat kasb etadi. Tarjimon esa ulug` asar oldidagi katta ma`suliyatni his qilgan holda turli tarjima strategiyalaridan oqilona foydalanishga harakat qilgan. Tahlil qilingan misollar asosida quyidagi xulosalarga kelish mumkin.

Birinchidan, tarjimon ko‘plab astronomik terminlarni ingliz tilida mavjud bo‘lgan zamonaviy ilmiy ekvivalentlar bilan almashtirgan. Masalan, Mushtariy — Jupiter, Zuhro — Venus, handasa — geometry, riyoziyot — mathematics kabi birliklarda ilmiy mazmunning tushunarliligi birinchi o‘ringa qo‘yilgan. Bu strategiya denotativ va pragmatik ekvivalentlikni kuchaytiradi, biroq tarixiy nomlanishning o‘ziga xosligini qisman susaytiradi.

Ikkinchidan, ayrim birliklarda transliteratsiya va deskriptiv tarjima qo‘llangan. Risola fi’l Hisob, Mawlana kabi shakllar Sharq ilmiy-madaniy muhitini saqlashga xizmat qiladi. Shunday qilib, romandagi ilm-fanga oid tarixiy-arxaik birliklar tarjimasini baholashda faqat lug‘aviy moslik emas, balki ilmiy aniqlik, tarixiy kolorit, terminologik izchillik va badiiy uslubning o‘zaro munosabati ham hisobga olinishi lozim.

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BIOLOGICAL EFFECTIVENESS OF STEM INJECTION TECHNOLOGY IN WILLOW TREES (SALIX SPP.) AGAINST THE URBAN LONGHORN BEETLE (AEOLESTHES SARTA SOLSKY.)

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ABSTRACT

The present study evaluates the effectiveness of trunk injection technology against the city longhorn beetle, Aeolesthes sarta Solsky., one of the most destructive xylobiont pests of willow trees (Salix spp.). The research was conducted in Tashkent region during 2022–2025. Systemic insecticides were applied directly into the trunk using infusion systems at 3% and 4% working solution concentrations. The biological efficacy of the treatments was assessed under field conditions. The results demonstrated that Bagira 20% EC, Proclaim 5% WG and Agrofos-D 55% EC exhibited the highest efficacy. Although the 4% concentration provided maximum biological effectiveness, it also increased local damage to xylem tissues around the injection site. Considering both biological efficacy and phytotoxic safety, a 3% working solution was identified as the optimal concentration for trunk injection applications in willow plantations.

Keywords

Salix spp., Aeolesthes sarta, trunk injection, systemic insecticides, biological efficacy, xylobiont pests, xylem tissue, phytotoxicity, integrated pest management.

БИОЛОГИЧЕСКАЯ ЭФФЕКТИВНОСТЬ ТЕХНОЛОГИИ СТВОЛОВОЙ ИНЬЕКЦИИ НА ДЕРЕВЬЯХ ИВА (*SALIX SPP.*) ПРОТИВ ГОРОДСКОГО УСАЧА (AEOLESTHES SARTA SOLSKY.)

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АННОТАЦИЯ. *В данной статье изучается эффективность применения технологии стволовой инъекции против городского усача (Aeolesthes arta Solsky.), являющегося опасным ксилобионтным вредителем деревьев ивы (Salix spp.). Исследования проводились в условиях Ташкентской области в течение 2022-2025 годов. 3 и 4% рабочие растворы инсектицидов системного действия вводили в ствол дерева инфузионным методом и оценивали их биологическую эффективность. Согласно полученным результатам, наибольшую эффективность продемонстрировали препараты Багира 20% к.с.э., Проклейм 5% в.р.г. и Агрофос-Д 55% к.э. Хотя биологическая эффективность достигала максимума при концентрации 4%, наблюдалось расширение местного поражения тканей ксилемы. На основании показателей биологической эффективности и фитотоксической безопасности в качестве оптимальной нормы рекомендован 3% рабочий раствор методом стволовой инъекции.*

Ключевые слова. *Salix spp., Aeolesthes arta, trunk injection, инфузионный метод, системные инсектициды, биологическая эффективность, ксилема, ксилобионтные вредители, фитотоксичность, интегрированная защита.*

ANNOTATSIYA. *Ushbu maqolada tol (Salix spp.) daraxtlarining xavfli ksilobiont zararkunandasi hisoblangan shahar mo‘ylovdori (Aeolesthes sarta Solsky.)ga qarshi trunk injection texnologiyasini qo‘llash samaradorligi o‘rganilgan. Tadqiqotlar Toshkent viloyati sharoitida 2022-2025 yillar davomida olib borildi. Sistemali ta’sir etuvchi insektitsidlarning 3 va 4% li ishchi eritmalari infuzion usulda daraxt tanasiga yuborilib, ularning biologik samaradorligi baholandi. Olingan natijalarga ko‘ra, Bagira 20% s.e.k., Prokleym 5% s.e.g. va Agrofos-D 55% em.k. preparatlari eng yuqori samaradorlikni namoyon qildi.4% konsentratsiyada biologik samaradorlik maksimal darajaga yetgan bo‘lsa-da, ksilema to‘qimalarida mahalliy zararlanish maydoni kengaygani kuzatildi. Biologik samaradorlik va fitotoksik xavfsizlik ko‘rsatkichlari asosida trunk injection usulida 3% ishchi eritma optimal me’yor sifatida tavsiya etildi.*

Kalit so‘zlar. *Salix spp., Aeolesthes sarta, trunk injection, infuzion usul, sistemali insektitsidlar, biologik samaradorlik, ksilema, ksilobiont zararkunandalar, fitotoksiklik, integratsiyalashgan himoya.*

Введение. На территории Узбекистана деревья ива (Salix spp.) являются важной составной частью оросительных сетей, защитных лесных насаждений и системы озеленения. В последние годы среди насекомых-ксилобионтов, наносящих вред этим деревьям, возрастает экономическая значимость городского усача (Aeolesthes arta Solsky.). Личинки вредителя развиваются в древесной части ствола и крупных ветвей деревьев, повреждая проводящие ткани, в результате чего замедляется рост деревьев, снижается их механическая прочность и наблюдаются случаи высыхания.

В связи ведением скрытого образа жизни городского усача (Aeolesthes arta Solsky.), обычный способ опрыскивания контактными препаратами во многих случаях не дает достаточного эффекта. Поэтому использование технологии trunk injection, основанной на непосредственном введении препаратов в проводящую систему дерева, является одним из актуальным в защите от вредителя.

Обзор литературы. В последние годы технология стволовой инъекции стала широко применяться в борьбе с ксилобионтными вредителями. Этот способ отличается непосредственной доставкой препаратов в проводящую систему растения и обеспечивает более высокую эффективность по сравнению с контактному способу.

По данным Doccola и Wild (2012), метод trunk injection является одним из экологически безопасных способов применения инсектицидов на городских деревьях. Авторы отметили, что степень доступа препарата к целевому организму будет высокой.

Смитлей и др. (2010) обнаружили, что системные препараты, введенные в ствол дерева, эффективно распространяются по листьям и древесным тканям. Особенно активные вещества, перемещающиеся через ксилему, дали высокие результаты против вредителей, обитающих внутри древесины.

В исследованиях, проведенных McCullough и Poland (2017), технология trunk injection была рекомендована в качестве важного компонента интегрированной системы защиты от древесных жуков.

В условиях Центральной Азии, описанный Солски *Aeolesthes arta* является одним из вредителей, наносящих серьезный ущерб тутовнику, тополю, иве и другим деревьям. В последующих исследованиях были широко изучены его биология, фенология и особенности нанесения вреда.

В исследованиях, проведенных учеными Узбекистана, отмечено, что эффективность химических средств во многом зависит от степени проникновения препарата во внутренние ткани, так как личинки городского усача развиваются на стволах деревьев и скелетных ветвях.

Поэтому совершенствование технологии стволовой иньекции в местных условиях и определение оптимальных концентраций имеет актуальное научно-практическое значение.

Цель исследования. Разработка теоретических основ применения технологии стволовой инъекции на ивняках против городского усача *(Aeolesthes* arta Solsky.) и оценка биологической эффективности данного способа в защите деревьев.

Материалы и методы исследования. Исследования проводились в течение 2022-2025 годов на ивовых площадях, расположенных в Ташкентской области. В качестве объекта эксперимента были выбраны ивы разного возраста зараженные городским усачом.

Перед обработкой деревьев определяли их дендрометрические показатели, в том числе диаметр на уровне груди (ДУГ). Точки инъекции выбирались исходя из анатомического строения дерева и степени повреждения.

С помощью технологии Trunk injection в активную проводящую часть стволов деревьев просверлены специальные отверстия и с помощью инфузионной системы введены рабочие растворы системно действующих препаратов. Наблюдалось всасывание препаратов деревьями и отмечалось время полного усвоения раствора.

В экспериментах сравнивалась эффективность способа trunk injection, способов обычного опрыскивания и биологических средств (Боверин-зерновой и Боверин-жидкий).

Биологическая эффективность рассчитан по формуле Аббота.

Методика применения технологии Trunk injection. При применении технологии стволовой инъекции против городского усача (*Aeolesthes arta* Solsky.) на ивняках были отобраны деревья, находящиеся в активном физиологическом состоянии в период вегетации. Для эксперимента были отобраны деревья, близкие по диаметру и степени повреждения.

Перед обработкой измеряли диаметр деревьев на высоте груди (ДГГ) и оценивали их фитосанитарное состояние. В качестве основных зон локализации личинок вредителя были отмечены нижняя часть ствола, скелетные ветки и прикрепления ветки к стволу.

Для введения препаратов в проводящие части ствола дерева были просверлены специальные отверстия. Точки инъекции были выбраны исходя из анатомического строения дерева. Для обеспечения более быстрого доступа препарата к целевым зонам у зрелых много стволовых деревьев, точки инъекции располагали вблизи скелетных веток и прикрепленной части к основному стволу.

В отверстия устанавливали инфузионную систему и вводили рабочие растворы препаратов системного действия. Скорость всасывания препаратов деревом регулярно контролировалась, а время полного усвоения раствора фиксировалось. Движение раствора оценивали в зависимости от транспирационной активности дерева, уровня влажности и метеорологических факторов.

После полного всасывания препарата инфузионную систему удаляли и наблюдали за динамикой заживления образовавшихся ран. В ходе экспериментов проводился мониторинг вегетативного развития деревьев, количества новых очагов поражения и частоты встречаемости личинок вредителя (рис. 1).

С целью оценки влияния метода trunk injection на физиологию дерева также наблюдались анатомические изменения, возникающие в тканях вокруг точек инъекции. После полного всасывания препарата измеряли степень заживления образовавшихся ран, формирование ткани каллуса и длину зон некроза, возникших в тканях ксилемы. При этом проводилась сравнительная оценка фитотоксического действия рабочих растворов различной концентрации на ткани деревьев. Наблюдения проводились регулярно в течение всего вегетационного периода и наряду с биологической эффективностью технологии trunk injection были определены показатели физиологической безопасности. Биологическая эффективность рассчитывалась по формуле Хендерсона-Тилтона (1955). Данный метод характеризуется учетом изменения численности вредителей до и после обработки в опытном и контрольном вариантах и широко применяется в энтомологических исследованиях в полевых условиях.



Рисунок 1. Процесс введения системных инсектицидов на ивовое дерево методом trunk injection (инфузионный) (Ташкентская область, 2022–2025 гг.).

Научные основы технологии стволовой иньекции. Технология Trunk injection основана на непосредственном введении препарата в систему ксилемы дерева. Через ксилему вода и растворенные в ней вещества поднимаются из корневой системы в верхние части дерева. В результате

препарат распространяется по дереву и достигает внутренних тканей древесины, где находятся личинки вредителя.

Наблюдения на ивняках показали, что высокая эффективность препарата наблюдается в период активной транспирации дерева. По этой причине целесообразно проводить работы по инъекции ствола в период вегетации.

Размещение точек инъекции на основный ветвях и прикрепленной части к основному стволу у зрелых и многоветвистых ив может обеспечить более быструю доставку препарата в целевые зоны.

Деревья ивы (Salix spp.) по анатомо-физиологическим особенностям относятся к группе слабокомпартаментных деревьев. В связи с этим важно минимизировать объем травм, возникающих в процессе trunk injection, и оптимизировать количество точек введения препарата. Вокруг образовавшихся отверстий в стволе дерева возникают местные защитные реакции тканей ксилемы и камбия, формируются зоны некроза и в дальнейшем каллусной ткани. Повышение концентрации препарата не только повышает биологическую эффективность, но и может привести к увеличению площади поврежденных тканей. Поэтому при оценке практической эффективности технологии trunk injection в качестве важных критериев учитывались не только степень гибели вредителей, но и способность тканей дерева к восстановлению, величина зоны некроза и интенсивность образования каллуса.

Результаты и их обсуждение. В ходе исследований было замечено, что системные препараты, введенные с помощью технологии стволовой инъекции, активно перемещаются через проводящую систему дерева. Всасывание препаратов деревом изменялось в зависимости от физиологического состояния дерева, уровня влажности и стадии вегетации.

Полученные результаты показали, что биологическая эффективность способа

trunk injection выше, чем у обычного способа распыления. Основная причина этого объясняется тем, что препарат непосредственно достигает тканей древесины, где находятся личинки вредителя.

Несмотря на то, что биологические препараты, в том числе Боверин-зерновой и Боверин-жидкий, экологически безопасны, их действие проявлялось медленнее, чем у системных препаратов, применяемых технологией trunk injection.

На следующем этапе исследований были использованы рабочие растворы 3% концентрацией препаратов, отобранных по результатам предыдущих экспериментов. На этом этапе химические вещества также вводились в ствол дерева через специальные инфузионные капсулы. Всасывание активного вещества через капсулы протекало положительно, и препараты в достаточной степени распределялись по тканям ксилемы дерева.

Согласно полученным результатам, среди препаратов, применяемых в высоких концентрациях, Багира 20% в.р.к. показала наибольшую эффективность и биологическая эффективность составила 67,3%. Также один из высоких результатов показал препарат Проклейм 5% в.р.г., показавший эффективность 66,8%. По остальным препаратам были определены следующие показатели: Индокс 15% к.с. - 52,3%, Atilla 5% эм.к. - 50,4%, Матч 5% м.к.сус. - 57,3%, Два-трина 10% к.э. - 53,4% и Агрофос-Д 55% к.э. - 62,2%.

Эти результаты были значительно выше, чем показатели, полученные при концентрации 2%, и показали, что увеличение концентрации препарата повышает эффективность против личинок городского усача. В частности, еще раз подтверждено, что препараты Багира 20% к.э. и Проклейм 5% в.р.г. обладают стабильно высокой эффективностью в различных условиях.

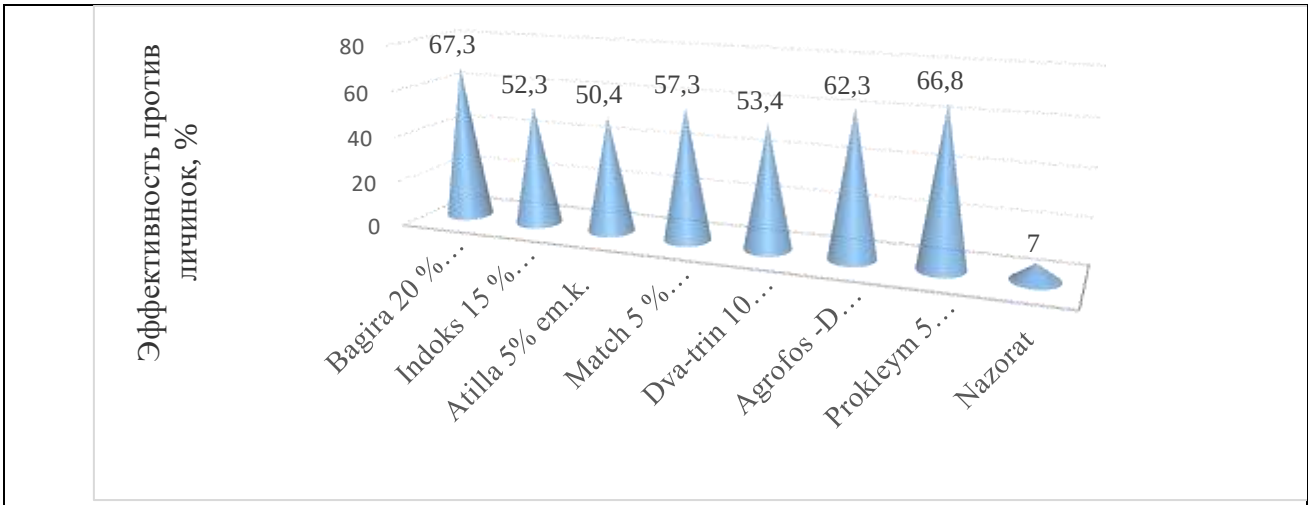


Рисунок 1. *Процесс введения системных инсектицидов в иву методом стволовой инъекции (инфузионно) (Ташкентская область, 2022-2025 гг.)*

В результате химической обработки наблюдалось быстрое закрытие питательных отверстий погибших гусениц. Закрытие отверстий было четко зафиксировано в ходе наблюдений первого и второго года, что указывает на прекращение деятельности вредителей в тканях деревьев.

Напротив, у не погибших гусениц экскременты продолжали выделяться из питательных отверстий на стволе дерева. Наблюдалось, что эти гусеницы в основном располагались на участках ствола дерева, расположенных вблизи кселемной части и ядра, что указывает на их способность сохраняться в защищенных внутренних слоях.

В целом, исследования, проведенные при концентрации 3% рабочего раствора препарата, показали, что он резко снижает жизнедеятельность вредителей, повышает смертность, а также приводит к снижению степени повреждения ствола дерева. Это еще раз доказывает эффективность инфузионного метода и практическую значимость высоких концентраций.

Поэтому на предыдущих этапах отмечалась низкая степень гибели вредителей в низкоконцентрированных рабочих растворах. Кроме того, при

химическом анализе образцов взятых из листьев и стеблей дерева в лабораторных условиях, результаты показали, что через некоторое время после введения препарата концентрация активного вещества снизилась на 55-60% по сравнению с исходным количеством. Это указывает на недостаточное распределение или быстрое расщепление препарата в тканях растений. В результате вещество, воздействующее на вредителей, не достигло достаточного количества к сердцевине дерева и поврежденным слоям.

Исследования были продолжены с целью определения оптимальной нормы расхода для эффективного уничтожения вредителей и концентрация рабочей жидкости, применяемой инфузионным способом, была установлена на уровне 4%. Результаты, полученные на этом этапе, были значительно выше, особенно на деревьях обработанных препаратом Багира 20% в.р.к., биологическая эффективность составила 100%. То есть все молодые личинки городского усача, присутствующие на стволе дерева, полностью погибли.

Это объясняется тем, что препарат в высоких концентрациях лучше распространяется через кселому деревьев, а также оказывает острое токсическое действие на организм вредителя. Кроме того, в процессе распространения 4% рабочего раствора по тканям растений степень естественного расщепления активного вещества значительно снизилась, в результате чего количество, достигаемое вредителями, резко увеличилось.

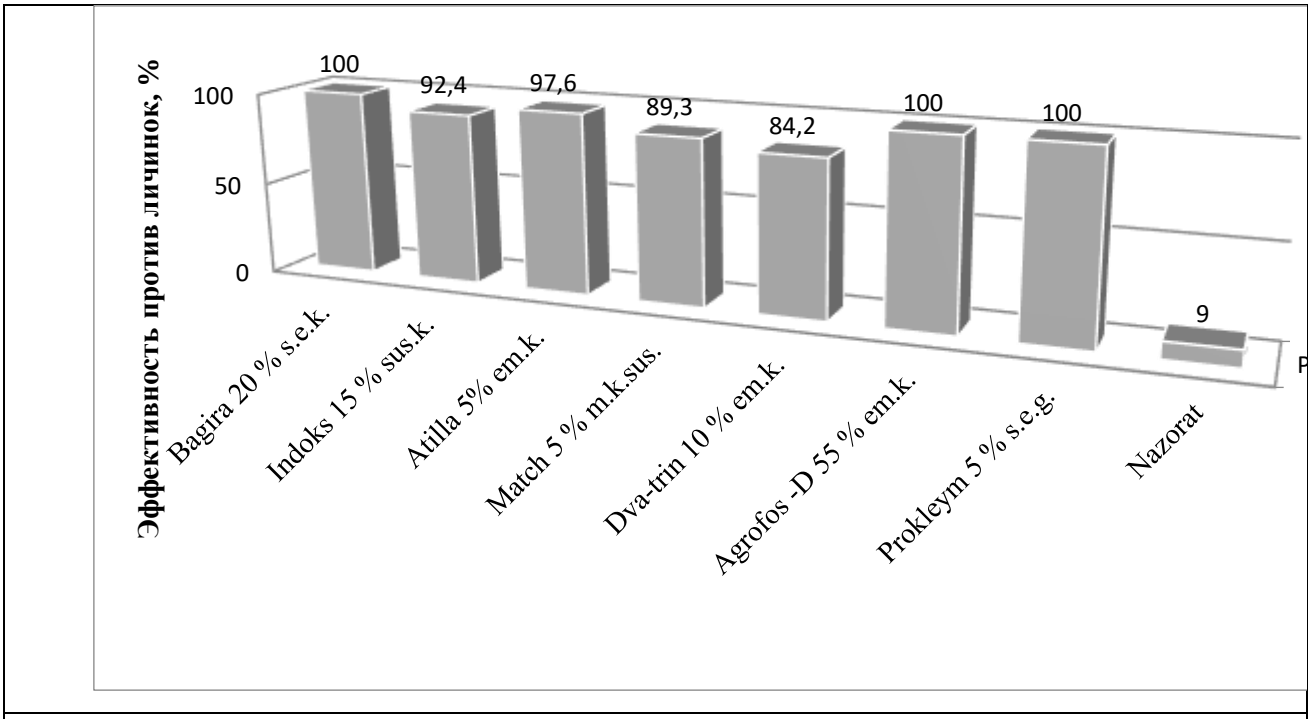


Рис. 2. Биологическая эффективность различных методов защиты от городского усача (Aeolesthes *arta Solsky.). (Ташкентская область, 2022-2025 гг.).*

При применении препарата Индокс 15% к.с. эффективность составила 92,4%, при обработке препаратом Атилла 5% к.э. - 97,6%, а также при применении препарата Матч 5% к.э. к. - 89,3%.

В вариантах с применением препарата Два-трин 10% к.э. средняя эффективность составила 84,2%, а при применении препарата Агрофос-Д 55% к.э. биологическая эффективность составила 100% и в период наблюдения живых личинок не зарегистрировано. Вместе с тем, в вариантах с применением препарата Проклейм 5% в.р.г. также отмечена биологическая эффективность до 100%.

По результатам данного исследования наибольшую эффективность показали препараты Багира 20% в.р.к., Агрофос-Д 55% к.э. и Проклейм 5% в.р.г. при инфузионном методе, биологическая эффективность составила 100%, а живых личинок в период наблюдения не зарегистрировано. Тем не менее, для оценки влияния технологии trunk injection на физиологию дерева были изучены

анатомические изменения в тканях вокруг точек инъекции. В результате исследований с увеличением концентрации препарата наблюдалось расширение зон местного некроза в тканях ксилемы.

При введении химических средств с помощью специальных игл было зафиксировано повреждение тканей кселемы до 3,2 см в 2% рабочем растворе, 5 см в 3% растворе и 7,5 см в 4% растворе. При этом повышение концентрации рабочего раствора приводит к определенной степени повреждения ткани кселемы.

Полученные результаты показали, что существует определенная корреляция между биологической эффективностью и фитотоксическим действием с увеличением концентрации препарата в технологии trunk injection. В частности, хотя при применении 4% рабочего раствора была достигнута максимальная биологическая эффективность против вредителей, наблюдалось расширение зоны некроза вокруг точек инъекции. Это объясняется тем, что высокая концентрация препарата усиливает физиологическое напряжение в тканях ксилемы и камбия. Из-за относительно слабой способности деревьев ивы (Salix spp.) к компартментации процесс разграничения и восстановления поврежденных тканей протекает медленнее. В ходе наблюдений было отмечено, что в вариантах с применением 3% рабочего раствора, наряду с высокой биологической эффективностью зона некроза была относительно малой, а также процесс образования каллуса протекал активно. Данная ситуация показывает, что при применении технологии trunk injection необходимо учитывать физиологическую безопасность дерева наряду с биологической эффективностью.

Инфузионным способом препараты Багира 20% в.р.к., Проклейм 5% в.р.г. и Агрофос-Д 55% к.э. показали 100% биологическую эффективность в 4% рабочем растворе. Однако, поскольку при концентрации 4% зона некроза тканей ксилемы вокруг точек инъекции расширяется до 7,5 см, в качестве оптимальной нормы по

комплексу биологической эффективности и фитотоксической безопасности рекомендован 3% рабочий раствор.

Багира 20% в.р.к. (100%), Проклейм 5% в.р.г. (100%) и Агрофос-Д 55% к.э. (100%) препараты показали наибольшую эффективность. Однако, из-за малого фитотоксического действия и положительного влияния на рост деревьев, Багира 20% в.р.к. был оценен как наиболее перспективный препарат.

В результате исследований было установлено, что повышение концентрации рабочего раствора при методе стволовой иньекции значительно повышает биологическую эффективность. Однако, поскольку при концентрации 4% расширяется область локального поражения тканей ксилемы, по комплексу показателей биологической эффективности и фитотоксической безопасности наилучшую эффективность и фитотоксическую безопасность обеспечивает применение 3% рабочего раствора препарата методом стволовой инъекции.

ВЫВОД

1. Городской усач (Aeolesthes arta Solsky.) является одним из основных вредителей-ксилобионтов деревьев ивы (Salix spp.), и было обнаружено, что эффективность традиционных методов опрыскивания ограничена из-за обитания личинок в древесных тканях.

2. Было отмечено, что технология trunk injection обеспечивает доступ активного вещества к внутренним тканям, где расположены личинки вредителей, путем прямого введения системных инсектицидов в систему ксилемы дерева и повышает биологическую эффективность.

3. В исследованиях установлено, что эффективность препаратов, применяемых способом trunk injection, зависит от концентрации рабочего раствора. Препарат Багира 20% в.р.к. в 3% рабочем растворе 67,3%, Проклейм 5% в.р.г. 66,8% и Агрофос-Д 55% к.э. Биологическая эффективность составила 62,2%.

4. При повышении концентрации рабочего раствора на 4% биологическая эффективность препаратов Багира 20% в.р.к., Проклейм 5% в.р.г. и Агрофос-Д 55% к.э. достигла 100%, в период наблюдения живых личинок не зарегистрировано.

5. Несмотря на то, что с увеличением концентрации препарата биологическая эффективность повышается, наблюдалось также увеличение площади локального некроза тканей ксилемы вокруг точек инъекции. В частности, зона некроза в 2% растворе составила в среднем 3,2 см, в 3% растворе - 5,0 см и в 4% растворе - 7,5 см.

6. Установлено, что в связи с относительно слабой способностью ивовых деревьев к компартментации (CODIT), при применении технологии trunk injection, наряду с биологической эффективностью, необходимо учитывать показатели фитотоксической безопасности.

7. По комплексу показателей биологической эффективности и физиологической безопасности древесных тканей 3% рабочий раствор, примененный способом trunk injection, рекомендован в качестве оптимальной нормы.

8. Полученные результаты показали, что использование технологии trunk injection в интегрированной системе защиты от городского усача является перспективным и практически эффективным направлением.

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ACUTE APPENDICITIS IN CHILDREN: MODERN APPROACHES TO EARLY DIAGNOSIS AND SURGICAL TREATMENT

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Abstract

Acute appendicitis is one of the most common causes of emergency abdominal surgery in children. The clinical presentation may vary significantly depending on the child's age, and atypical symptoms in young children may lead to delayed diagnosis and an increased risk of perforation and peritonitis. This article discusses modern approaches to early diagnosis and surgical treatment of acute appendicitis in children. Particular attention is paid to clinical assessment, laboratory investigations, Pediatric Appendicitis Score (PAS), and ultrasonography. The role of laparoscopic appendectomy as a minimally invasive surgical technique is also discussed. Management of complicated appendicitis, including perforation and periappendiceal abscess, is considered. In selected cases of uncomplicated appendicitis, non-operative treatment with antibiotics may be considered under appropriate clinical supervision. The use of standardized diagnostic algorithms and minimally invasive surgical techniques can contribute to earlier diagnosis, reduction of complications, and improved treatment outcomes in pediatric patients.

Keywords

children, acute appendicitis, appendectomy, laparoscopy, ultrasonography, early diagnosis, Pediatric Appendicitis Score, perforation, peritonitis.

BOLALARDA O‘TKIR APPENDITSIT: ERTA TASHXISLASH VA JARROHLIK DAVOLASHNING ZAMONAVIY YONDASHUVLARI

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Annotatsiya

Ushbu maqolada bolalarda o‘tkir appenditsitning klinik kechishi, erta tashxislash imkoniyatlari va zamonaviy jarrohlik davolash usullari yoritilgan. Bolalarda o‘tkir appenditsit keng tarqalgan shoshilinch jarrohlik kasalliklaridan biri bo‘lib, kasallikning klinik belgilari bolaning yoshiga qarab sezilarli darajada farq qilishi mumkin. Ayniqsa, kichik yoshdagi bolalarda simptomlarning noaniq bo‘lishi tashxisning kechikishiga va perforatsiya hamda peritonit kabi asoratlarning rivojlanishiga olib kelishi mumkin. Maqolada klinik baholash, laborator tekshiruvlar, Pediatric Appendicitis Score (PAS) va ultratovush tekshiruvining diagnostik ahamiyati tahlil qilingan. Shuningdek, laparoskopik appendektomiyaning zamonaviy jarrohlik amaliyotidagi o‘rni, perforatsiyalangan appenditsitda kompleks davolash tamoyillari hamda tanlangan bemorlarda konservativ davolash imkoniyatlari ko‘rib chiqilgan. Zamonaviy diagnostik algoritmlardan foydalanish va minimal invaziv jarrohlik usullarini keng joriy etish bolalarda davolash samaradorligini oshirishga xizmat qiladi.

Kalit so‘zlar: bolalar, o‘tkir appenditsit, appendektomiya, laparoskopiya, ultratovush tekshiruvi, erta tashxis, Pediatric Appendicitis Score, perforatsiya, peritonit.

KIRISH

O‘tkir appenditsit bolalar jarrohligi amaliyotida eng ko‘p uchraydigan shoshilinch kasalliklardan biri hisoblanadi. U ko‘richak chuvalchangsimon o‘simtasining o‘tkir yallig‘lanishi bilan tavsiflanadi va o‘z vaqtida tashxis qo‘yilmagan hollarda perforatsiya, periappendikulyar infiltrat, abscess, peritonit hamda sepsis kabi og‘ir asoratlarga olib kelishi mumkin. Bolalarda appenditsitning diagnostikasi kattalarga nisbatan ayrim o‘ziga xos xususiyatlarga ega. Yosh bolalarda anamnezni to‘liq yig‘ish qiyinligi, simptomlarning noaniq bo‘lishi va boshqa kasalliklar bilan klinik o‘xshashlik tashxis qo‘yishni murakkablashtiradi. Shu sababli kasallikni erta aniqlash pediatr, shoshilinch tibbiy yordam shifokori va bolalar jarrohining hamkorligini talab qiladi.

So‘nggi yillarda bolalarda appenditsitni tashxislashda klinik risk skorlari, ultratovush tekshiruvi va zarurat bo‘lganda magnit-rezonans tomografiyadan foydalanish kengaymoqda. Jarrohlik davolashda esa laparoskopik appendektomiya asosiy minimal invaziv usullardan biriga aylandi.

TADQIQOT MAQSADI

Bolalarda o‘tkir appenditsitni erta tashxislashning zamonaviy usullarini, klinik va instrumental mezonlarini hamda zamonaviy jarrohlik davolash yondashuvlarini tahlil qilish.

MATERIALLAR VA USULLAR

Maqolani tayyorlashda bolalarda o‘tkir appenditsit bo‘yicha zamonaviy ilmiy adabiyotlar, xalqaro klinik tavsiyalar va diagnostika hamda davolashga oid tadqiqotlar tahlil qilindi. Klinik baholash, laborator diagnostika, ultratovush tekshiruvi, klinik risk skorlari, laparoskopik appendektomiya va konservativ davolashga oid ma’lumotlar umumlashtirildi.

ASOSIY QISM

Bolalarda o‘tkir appenditsitning klinik xususiyatlari

O‘tkir appenditsitning klassik klinik ko‘rinishida qorin og‘rig‘i dastlab epigastral yoki kindik atrofida boshlanib, keyinchalik o‘ng yonbosh sohasiga ko‘chishi mumkin. Og‘riqqa ko‘ngil aynishi, qusish, ishtahaning pasayishi va tana haroratining ko‘tarilishi qo‘shiladi.

Bolalarda klinik simptomlar har doim ham klassik ko‘rinishda bo‘lmaydi. Ayniqsa, maktabgacha yoshdagi bolalarda:

- qorin og‘rig‘ining aniq lokalizatsiyasi bo‘lmasligi;
- diareya;
- qusish;
- tana haroratining ko‘tarilishi;

- bola bezovtaligi;
- ovqatlanishdan bosh tortish

kuzatilishi mumkin.

Shuning uchun o‘tkir appenditsitni gastroenterit, mezenterial limfadenit, siydik yo‘llari infeksiyasi, invaginatsiya, Mekkel divertikuliti va boshqa abdominal patologiyalardan farqlash zarur.

Erta tashxislashning zamonaviy usullari

O‘tkir appenditsit diagnostikasining birinchi bosqichi batafsil anamnez yig‘ish va fizik tekshiruv hisoblanadi. Qorin palpatsiyasida o‘ng yonbosh sohasida og‘riqlilik va peritoneal ta’sirlanish belgilari aniqlanishi mumkin.

Klinik baholashni standartlashtirish maqsadida Pediatric Appendicitis Score (PAS) kabi klinik skorlardan foydalaniladi. Bunday tizimlar bemorlarni appenditsit rivojlanish xavfi bo‘yicha guruhlarga ajratishga yordam beradi.

Laborator tekshiruvlarda umumiy qon tahlili muhim ahamiyatga ega. Leykotsitoz va neytrofiliya yallig‘lanish jarayonini ko‘rsatishi mumkin. C-reaktiv oqsil (CRP) esa yallig‘lanish faolligini baholashda yordam beradi. Biroq ushbu ko‘rsatkichlarning normal bo‘lishi appenditsitni to‘liq inkor etmaydi.

Ultrasonografiyaning ahamiyati

Bolalarda ultratovush tekshiruvi o‘tkir appenditsitni aniqlashda asosiy instrumental usullardan biridir. U ionlashtiruvchi nurlanish bilan bog‘liq emasligi sababli pediatrik amaliyotda ayniqsa muhim.

Ultratovush tekshiruvida quyidagi belgilar appenditsit foydasiga baholanadi:

- appendiks diametrining kattalashishi;
- appendiksning kompressiyalanmasligi;
- devorining qalinlashishi;
- appendikolit mavjudligi;

- periappendikulyar suyuqlik;
- atrofdagi yog‘ to‘qimasining yallig‘lanish belgilari;
- Doppler tekshiruvda qon oqimining kuchayishi;
- abscess yoki perforatsiya belgilari.

UTT natijasi noaniq bo‘lgan holatlarda bolaning klinik holatiga qarab takroriy UTT, MRT yoki ayrim vaziyatlarda KT qo‘llanishi mumkin. Bolalarda ionlashtiruvchi nurlanishni kamaytirish maqsadida KTdan foydalanish imkon qadar cheklanishi kerak.

Jarrohlik davolashning zamonaviy tamoyillari

O‘tkir appenditsit tasdiqlangan va jarrohlik ko‘rsatmasi mavjud bo‘lgan bemorlarda appendektomiya asosiy davolash usuli hisoblanadi.

Bugungi kunda laparoskopik appendektomiya bolalar jarrohligida keng qo‘llanadi. Ushbu usulning asosiy afzalliklari quyidagilardan iborat:

1. operatsion jarohat hajmining kichikligi;
2. operatsiyadan keyingi og‘riqning nisbatan kamligi;
3. yara infeksiyasi xavfining kamayishi;
4. bolaning erta faollashishi;
5. ichak faoliyatining tezroq tiklanishi;
6. shifoxonada qolish muddatining qisqarishi;
7. kosmetik natijaning yaxshi bo‘lishi;
8. qorin bo‘shlig‘ining boshqa qismlarini vizual baholash imkoniyati.

Laparoskopik usul ayniqsa tashxis noaniq bo‘lgan yoki boshqa patologiyani istisno qilish zarur bo‘lgan holatlarda qo‘shimcha diagnostik imkoniyat beradi.

Perforatsiyalangan appenditsit

Appenditsitning o‘z vaqtida tashxis qilinmasligi appendiks perforatsiyasiga olib kelishi mumkin. Perforatsiya natijasida mahalliy yoki diffuz peritonit, periappendikulyar abscess va sepsis rivojlanishi ehtimoli ortadi.

Bunday bemorlarda kompleks davolash quyidagilarni o‘z ichiga oladi:

- gemodinamik holatni barqarorlashtirish;
- suyuqlik va elektrolitlar muvozanatini tiklash;
- keng ta’sir doirasiga ega antibiotik terapiyasi;
- zarurat bo‘lganda jarrohlik aralashuvi;
- abscess mavjud bo‘lsa, tegishli drenaj taktikasini tanlash;
- operatsiyadan keyingi monitoring.

Murakkab appenditsitda antibiotiklarning davomiyligi bemorning klinik holati, infeksiya nazorati va jarrohlik natijalariga qarab belgilanadi. Zamonaviy tavsiyalarda adekvat source control amalga oshirilgandan keyin keragidan ortiq uzoq antibiotik terapiyasidan qochish tavsiya qilinadi.

Konservativ davolash imkoniyatlari

So‘nggi yillarda tanlangan asoratsiz appenditsit holatlarida antibiotiklar bilan konservativ davolash masalasi faol o‘rganilmoqda.

Bunday yondashuv barcha bemorlarga bir xil tarzda qo‘llanmaydi. Bemorni tanlashda appendikolit mavjudligi, perforatsiya belgilari, abscess, simptomlarning davomiyligi, bolaning umumiy holati va uzoq muddatli kuzatuv imkoniyati hisobga olinadi.

Konservativ davolash tanlangan bemorlarda muqobil strategiya bo‘lishi mumkin, biroq keyinchalik appenditsit qaytalanishi yoki jarrohlik davolash zarurati paydo bo‘lishi mumkinligi sababli bemor va uning ota-onasiga kuzatuv masalalari tushuntirilishi kerak.

MUHOKAMA

Bolalarda o‘tkir appenditsitni samarali davolashning asosiy sharti — kasallikni imkon qadar erta aniqlashdir. Klinik simptomlarning yoshga bog‘liq o‘zgaruvchanligi sababli faqat bitta diagnostik mezonga tayanish yetarli emas.

Klinik risk skorlari shifokorga xavf guruhini aniqlashda yordam beradi, ultratovush esa tashxisni instrumental tasdiqlash imkonini beradi. Ushbu usullarning kombinatsiyasi keraksiz radiologik tekshiruvlarni kamaytirishga yordam beradi.

Jarrohlik davolashda laparoskopik appendektomiyaning keng qo‘llanilishi bolalar uchun minimal invaziv yondashuv imkoniyatlarini kengaytirdi. Shu bilan birga, perforatsiyalangan va murakkab appenditsitda individual davolash strategiyasini tanlash zarur.

Shunday qilib, zamonaviy yondashuv appenditsitni faqat operatsiya bilan davolash emas, balki **erta diagnostika → xavfni stratifikatsiya qilish → instrumental tasdiqlash → individual davolash strategiyasini tanlash → operatsiyadan keyingi ratsional kuzatuv** tamoyillariga asoslanadi.

XULOSA

Bolalarda o‘tkir appenditsit shoshilinch diagnostika va davolashni talab qiladigan kasallik bo‘lib, uning klinik ko‘rinishi bolaning yoshiga qarab o‘zgarishi mumkin. Erta tashxislashda anamnez va fizik tekshiruv bilan bir qatorda klinik risk skorlari, umumiy qon tahlili, CRP va ultratovush tekshiruvi muhim o‘rin tutadi.

Ultratovush tekshiruvi bolalarda nurlanishsiz va samarali diagnostik usul sifatida keng qo‘llanishi mumkin. Noaniq holatlarda klinik vaziyatga qarab MRT yoki boshqa tasviriy tekshiruvlardan foydalanish mumkin.

Jarrohlik davolash zarur bo‘lgan holatlarda laparoskopik appendektomiya zamonaviy minimal invaziv yondashuv sifatida muhim ahamiyatga ega. Perforatsiyalangan appenditsitda esa jarrohlik, antibakterial terapiya, suyuqlik-elektrolit muvozanatini tiklash va asoratlarni nazorat qilishdan iborat kompleks davolash talab etiladi. Zamonaviy diagnostik algoritmlarni amaliyotga joriy etish, kasallikni erta aniqlash va minimal invaziv jarrohlik usullaridan oqilona foydalanish bolalarda asoratlar xavfini kamaytirish va davolash natijalarini yaxshilashga xizmat qiladi.

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THEORETICAL FOUNDATIONS OF EDUCATIONAL METHODS IN HIGHER EDUCATION INSTITUTIONS

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Abstract

This thesis synthesizes the philosophical-epistemological, psychological, didactic, and organizational foundations of teaching methods in higher education. An integrative review distinguishes a method from a technique, technology, tool, and instructional format. The author proposes an Outcome-Content-Activity-Environment-Evidence model. Method effectiveness is attributed to alignment among the intended outcome, student activity, and assessment evidence rather than to novelty alone.

Keywords

higher education, teaching method, didactics, constructive alignment, active learning, course design.

OLIY TA'LIM TASHKILOTLARIDA TA'LIM METODLARINING NAZARIY ASOSLARI

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Annotatsiya. Tezisda oliy ta'limda ta'lim metodlarining falsafiy-epistemologik, psixologik, didaktik va tashkiliy asoslari umumlashtiriladi. Integrativ adabiyotlar sharhi asosida metod, usul, texnologiya, vosita va ta'lim shakli farqlanadi. Metod tanlash uchun muallifning "Maqsad-mazmun-faoliyat-muhit-dalil" modeli taklif etiladi. Model

samaradorlikni metodning yangiligi bilan emas, kutilayotgan natija, talaba faoliyati va baholash dalilining muvofiqligi bilan bog‘laydi.

Kalit so‘zlar: oliy ta’lim, ta’lim metodi, didaktika, konstruktiv muvofiqlik, faol ta’lim, kurs dizayni.

Аннотация. В тезисе обобщены философско-эпистемологические, психологические, дидактические и организационные основы методов обучения в высшем образовании. На основе интегративного обзора разграничены метод, приём, технология, средство и форма обучения. Предложена авторская модель «Цель-содержание-деятельность-среда-доказательство». Эффективность метода связывается с согласованностью результата, учебной деятельности и доказательств его достижения, а не с новизной метода.

Ключевые слова: высшее образование, метод обучения, дидактика, конструктивное согласование, активное обучение, дизайн курса.

Kirish

Oliy ta’lim sifati o‘quv mazmunining talaba faoliyatiga aylanishi va natijaning qanday dalil bilan tasdiqlanishiga bog‘liq. Shu bois metod faqat axborot uzatish usuli emas, balki maqsad, mazmun, faoliyat va baholashni bog‘lovchi didaktik mexanizmdir. “Zamonaviy metod”, “interfaol usul” va “raqamli vosita”ni tenglashtirish esa metod tanlashda xatoga olib keladi.

O‘zbekiston Respublikasining “Ta’lim to‘g‘risida”gi Qonuni sifatni ta’minlash, ta’lim ustuvorligi va kamsitmaslik prinsiplarini belgilaydi [1]. Oliy ta’limni 2030-yilgacha rivojlantirish konsepsiyasi amaliy ko‘nikmalar, ilg‘or pedagogik va raqamli texnologiyalarni rivojlantirishni ustuvor vazifa sifatida ko‘rsatadi [2].[1]

[1] PF-5847-son Farmon oliy ta’lim mazmunini sifat jihatidan yangi bosqichga ko‘tarish, ilg‘or pedagogik texnologiyalarni joriy etish va nazariy bilimdan amaliy ko‘nikmaga yo‘naltirish vazifalarini belgilaydi. Rasmiy manba: https://lex.uz/docs/-4545884.

Tadqiqot maqsadi ta’lim metodining nazariy asoslarini tizimlashtirish, unga yaqin tushunchalarni chegaralash va o‘quv natijasiga mos metod tanlash modelini ishlab chiqishdan iborat.

Nazariy asos va metodologiya

Biggs va Tangning konstruktiv muvofiqlik nazariyasiga ko‘ra, kutilayotgan o‘quv natijasi, talaba bajaradigan faoliyat va baholash topshirig‘i bir xil kognitiv darajaga xizmat qilishi kerak [3]. Demak, metod mazmunni yetkazish bilan cheklanmay, talabaning o‘zlashtirishini namoyon qiladigan faoliyatni tashkil etadi.[2]

Faol ta’lim bo‘yicha 225 tadqiqotning metatahlili talabani savolga javob berish, muammoni yechish va tushuntirishga jalb etish natijani yaxshilashini ko‘rsatgan [4]. Keyingi metatahlil faol ta’lim kam vakillik qiluvchi guruhlar o‘rtasidagi o‘zlashtirish tafovutini qisqartirishi mumkinligini aniqlagan [5]. Biroq murakkab topshiriq yo‘riqnoma va qayta aloqasiz samarali bo‘lmaydi [6; 7].

Raqamli muhit pedagogik qonuniyatlarni almashtirmaydi. Onlayn ta’limda o‘qituvchi mavjudligi va mazmunli talaba faoliyati muhim [8]; raqamli ta’lim esa infratuzilma, mazmun, boshqaruv va dalillardan foydalanishni birlashtiruvchi ekotizimdir [9]. UNESCO texnologiya inson markazli ta’limga xizmat qilishi kerakligini ta’kidlaydi [10].[3]

Generativ sun’iy intellekt izoh, mashq va tezkor fikr bildirishga ko‘maklashishi mumkin. Ammo uning javobini ishonchlilik, mualliflik, maxfiylik va tarafkashlik nuqtayi nazaridan tekshirish zarur [11; 12]. U mustaqil didaktik metod emas, maqsadga muvofiq tanlangan metod ichidagi vositadir.

[2] Konstruktiv muvofiqlik kutilayotgan natija, talaba bajaradigan o‘quv faoliyati va baholash topshirig‘ining bitta kognitiv yo‘nalishga xizmat qilishini anglatadi. Qarang: Biggs, J.; Tang, C. Teaching for Quality Learning at University, 2011.

[3] UNESCO 2023-yilgi Global Education Monitoring hisobotida texnologiyani ta’lim oluvchi manfaatini markazda saqlagan holda dolzarblik, tenglik, kengaytirish imkoniyati va barqarorlik mezonlari asosida tanlashni tavsiya etadi: https://www.unesco.org/gem-report/en/technology.

Tadqiqot integrativ adabiyotlar sharhi va qiyosiy kontent-tahlil asosida bajarildi. Manbalar mavzuga aloqadorlik, muallif va nashrning tekshirilishi, DOI yoki barqaror URL mavjudligi hamda metod samaradorligiga oid dalil berishi mezonlari bo‘yicha tanlandi. Tahlil konseptual xarakterga ega; yangi ishtirokchilar bilan tajriba o‘tkazilgani da’vo qilinmaydi.

Tahlil korpusiga 18 manba kiritildi: 2 ta normativ-huquqiy hujjat, 7 ta empirik yoki sharh maqolasi, 4 ta xalqaro va professional tashkilot materiali, 3 ta fundamental didaktik manba va 2 ta zamonaviy pedagogik-texnologik tadqiqot. Manbalar tushuncha, nazariy tayanch, talaba faoliyati, o‘qituvchi roli, muhit va baholash dalili bo‘yicha qiyoslandi.[4]

Asosiy natijalar

Tayanch didaktik tushunchalar

Metod – maqsadga eltuvchi o‘qituvchi va talaba faoliyatining umumiy yo‘li; usul – shu yo‘l ichidagi aniq amal. Pedagogik texnologiya bosqich va nazoratni oldindan loyihalaydi, vosita esa faoliyatni qo‘llab-quvvatlaydi. Ta’lim shakli jarayonning tashqi tashkil etilishidir. Bu farqlar 1-jadvalda jamlangan.

1-jadval. Ta’limga oid asosiy didaktik tushunchalarning farqi

Tush uncha	Asosiy savol	Misol	Noto‘g‘ri tenglashtirish xavfi
Metod	Maqsadga qanday faoliyat orqali erishiladi?	Muammoli ta’lim, keys-stadi, loyiha, tushuntirish	Har qanday qiziqarli mashqni alohida metod deb atash

[4] Integrativ tanlov statistik reprezentativlikni da’vo qilmaydi. Uning vazifasi ta’lim metodlariga oid huquqiy, nazariy, empirik va texnologik dalillarni bitta tahliliy ramkada birlashtirishdir.

Tush uncha	Asosiy savol	Misol	Noto‘g‘ri tenglashtirish xavfi
Usul	Metod ichida qaysi aniq amal bajariladi?	Savol, taqqoslash, “bir daqiqalik yozuv”, refleksiya	Usulni butun kurs metodologiyasi o‘rniga qo‘yish
Texnologiya	Jarayon qaysi ketma-ketlik va nazorat bilan takrorlanadi?	Teskari sinf texnologiyasi, modul ta’limi	Faqat raqamli platformani texnologiya deb hisoblash
Vosita	Faoliyat nima yordamida bajariladi?	LMS, simulyator, video, SI yordamchisi	Vosita mavjudligini ta’lim sifati deb qabul qilish
Shakl	Ta’lim qayerda va qanday tashkiliy ko‘rinishda kechadi?	Ma’ruza, seminar, amaliyot, onlayn mashg‘ulot	Shaklni metodning didaktik mazmuni bilan aralashtirish

Manba: muallif tomonidan [3; 6–10; 13] manbalar tahlili asosida tuzilgan.

Jadval tahlili shuni ko‘rsatadiki, raqamli platforma yoki qiziqarli mashqni o‘z-o‘zidan metod deb atash didaktik vazifani xiralashtiradi. Masalan, Moodle faqat maqsad, topshiriq va baholash bilan bog‘langanida metodik qiymat yaratadi.

Ta’lim metodining to‘rt nazariy darajasi

Falsafiy-epistemologik daraja bilimning qanday egallanishini izohlaydi: tayanch tushunchalarda izchil tushuntirish, murakkab kompetensiyalarda faol qo‘llash talab etiladi. Konstruktiv va pragmatik yondashuvlar bilimni avvalgi tajriba hamda amaliy muammo bilan bog‘laydi.

Psixologik daraja idrok, ishchi xotira, motivatsiya va metakognitsiyani hisobga oladi. Yangi boshlovchi talaba uchun namuna va bosqichli yo‘riqnoma zarur; tajriba ortgach, tayanch kamaytirilib, mustaqil muammo yechish kengaytiriladi [6; 7].

Didaktik daraja natija, faoliyat va baholash birligini talab qiladi. “Tahlil qiladi” natijasi belgilangan bo‘lsa, talaba vaziyatni mezon asosida ajratishi va xulosasini asoslab berishi kerak; faqat ma’ruza tinglash bunday dalil bermaydi [3].

Tashkiliy-ijtimoiy daraja guruh hajmi, vaqt, raqamli kirish, akademik halollik va inklyuzivlikni qamrab oladi. Universal Design for Learning yo‘riqnomasi o‘rganishdagi to‘siqlarni kamaytirish va natijani ifodalashning muqobil yo‘llarini tavsiya qiladi [13].

Maqsad mazmun faoliyat muhit dalil modeli

Taklif etilayotgan besh komponentli modelda maqsad – kuzatiladigan o‘quv natijasi; mazmun – zarur tushuncha va tamoyillar; faoliyat – talabaning kognitiv va amaliy harakati; muhit – auditoriya, raqamli vosita, hamkorlik va tayanch; dalil – o‘zlashtirishni tasdiqlovchi mahsulot yoki ijrodir. 2-jadval ushbu bog‘liqlikni metod tanlash qaroriga aylantiradi.

2-jadval. O‘quv natijasiga mos metod tanlash matritsasi

Kutilayotgan natija	Yetakchi faoliyat	Mos metod	Natija dalili
Tushunchani izohlash va farqlash	Taqqoslash, misol va qarshi misol keltirish	Qisqa tushuntirish, konsept savoli, o‘zaro izohlash	Asoslangan javob, konsept xaritasi
Nazariyani vaziyatga qo‘llash	Shartlarni ajratish, mezon asosida qaror qilish	Keys-stadi, muammoli topshiriq, simulyatsiya	Qaror va uning dalillangan asosi
Yangi yechim yoki mahsulot yaratish	Rejalash, sinash, takomil-lashtirish, himoya qilish	Loyiha va tadqiqotga asoslangan ta’lim	Prototip, hisobot, taqdimot, portfel

Kutilayotgan natija	Yetakchi faoliyat	Mos metod	Natija dalili
Hamkorlik va professional muloqot	Rol taqsimlash, muzokara, o‘zaro baholash	Hamkorlikdagi ta’lim, rolli o‘yin	Guruh mahsuloti va individual refleksiya
O‘z o‘rganishini boshqarish	Maqsad qo‘yish, monitoring va refleksiya	Formatif baholash, o‘quv kundaligi, adaptiv mashq	O‘sish dinamikasi va keyingi qadam rejasi

Manba: muallif ishlanmasi; konstruktiv muvofiqlik [3] va faol ta’lim dalillari [4-7] asosida.

Jadval tahlili shuni ko‘rsatadiki, metod tanlash talabaning kutilayotgan natijasidan boshlanadi. Bitta kursdagi tushuntirish, keys, loyiha va formatif baholash bir-birini inkor etmaydi; ular turli natijalarga xizmat qilganda yaxlit kurs dizaynini hosil qiladi.

Muhokama

“An’anaviy” va “zamonaviy” metodlarni mutlaq qarama-qarshi qo‘yish asosli emas: ma’ruza tayanch tushunchani izohlashi, faol topshiriq esa uni qo‘llashni ta’minlashi mumkin. Faoliyat natijaga mos kelmasa yoki qayta aloqa bo‘lmasa, tashqi faollik chuqur o‘rganishga aylanmaydi. Bu xulosa faol ta’lim sharhlari, o‘quv analitikasi va onlayn ta’lim bo‘yicha manbalar bilan hamohang [15-18].

Deslauriers va hammualliflar talabalar faol darsda ko‘proq o‘rgansa-da, o‘zlarini kamroq o‘rgandim deb his qilishi mumkinligini ko‘rsatgan [14]. Shuning uchun metod maqsadini tushuntirish, qiyinchilikni me’yorlash va o‘sish dalillarini ko‘rsatish zarur.[5]

Sun’iy intellekt g‘oya yaratish va tezkor fikr bildirishga yordam beradi, lekin

[5] Faol ta’limda talaba ko‘proq aqliy kuch sarflagani uchun subyektiv o‘rganish hissi pasayishi mumkin. Shu bois o‘qituvchi faol metodning maqsadini tushuntirishi va o‘sish dalillarini ko‘rsatishi muhim. DOI: https://doi.org/10.1073/pnas.1821936116.

talabaning manbani tekshirishi va mualliflik mas'uliyatini almashtirmaydi [11; 12]. Universitet siyosati undan foydalanish maqsadi, oshkor qilish, tekshirish va baholash mezonlarini belgilashi lozim.[6]

Modelning ilmiy yangiligi metodni besh komponent muvofiqligi orqali izohlashidir. U metodni nomi emas, talaba faoliyati va natija dalili bilan baholaydi hamda raqamli muhitni mustaqil maqsad emas, faoliyat sharti sifatida talqin qiladi.

Tadqiqot konseptual va sharh xarakterida. Model samaradorligini aniq fan, guruh hajmi va muhitda talaba mahsulotlari, rubrika natijalari va refleksiya asosida empirik sinash lozim.

Xulosa va takliflar

Ta'lim metodining nazariy asosi bilim haqidagi falsafiy qarash, o‘rganishning psixologik qonuniyatlari, natija-faoliyat-baholash muvofiqligi va tashkiliy shartlarning birligidan iborat. Metodning yangiligi emas, shu tarkibiy qismlar mosligi sifatni belgilaydi.

Birinchi taklif: har bir fan sillabusiga "maqsad-mazmun-faoliyat-muhit-dalil" xaritasini kiritib, har bir natijaga mos topshiriq va baholash dalilini tekshirish.

Ikkinchi taklif: o‘qituvchilar malakasini kurs dizayni ustaxonalari orqali rivojlantirib, real topshiriq, rubrika va qayta aloqa siklini ishlab chiqish.

Uchinchi taklif: monitoringda platformaga kirish soni bilan cheklanmay, talaba mahsuloti, xatoni tuzatish va refleksiyani baholash.

To‘rtinchi taklif: raqamli va SI vositalarini pedagogik qiymat, inklyuziv kirish, akademik halollik hamda ma'lumotlar xavfsizligi bo‘yicha tekshirish.

Beshinchi taklif: metodik yangilikni kichik pilotda sinab, dalil asosida

[6] Generativ sun'iy intellektdan foydalanish natijasida yaratilgan matn, dalil va manbalarni tekshirish, foydalanishni oshkor qilish hamda yakuniy mualliflik mas'uliyatini saqlash zarur. UNESCO yo‘riqnomasi: https://doi.org/10.54675/EWZM9535.

takomillashtirgandan keyin boshqa fanlarga moslashtirib kengaytirish.

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THE SIGNIFICANCE OF COMPLEXES OF SOME 3D METALS WITH THIOACIDS AND AMIDES

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Abstract

Complex compounds of biogenic metals with organic ligands are of great importance in the development of medicinal preparations. Many pharmaceutical preparations are complex compounds.

Keywords

biometals, physiologically active organic components, ligands, hematopoiesis, anemia, donor atoms, therapeutic effect, catalysis, blood plasma.

AYRIM 3D-METALLARNING TIOKISLOTALAR VA AMIDLAR BILAN KOMPLEKSLARINING AHAMIYATI

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Annotatsiya. Biogen metallarning organik ligandlar bilan kompleks birikmalari dorivor preparatlar yaratishda katta ahamiyat kasb etadi. Ko‘pchilik dori preparatlar komrles birikmalardir.

Kalit so‘zlar: *biometallar, fiziologik faol organik komponentlar, ligandlar, gemopoez, anemiya, donor atomlari, terapevtik ta’sir, kataliz, qon plazmasi*.

Bir qator 3d-metall ionlari, endogen jarayonlar kechishida bevosita ishtirok etish bilan nihoyatda dolzarb axamiyatga ega ekanligi sababli, hayotiy muhim, biologik ahamiyatga ega biogen elementlarga kiradi.

Tirik organizmda biometallar asosan endogen - koordinatsion bog‘langan shaklda bo‘ladi, chunki mikroelementlarning fiziologik faol organik komponentlar bilan koordinatsion birikmalari ularning tibbiyotda qo‘llanishi uchun nihoyatda keng

imkoniyatlarni ochib beradi, Ma’lumki qo‘llash uchun ruxsat etilgan organik dori vositalarining asosiy qismi qulay joylashgan donor atomlarni o‘z ichiga oladi, bu esa o‘z navbatida organizmda endogen biokomplekslar shakllanishini asosi xisoblanadi [1].

Biogen metallarning organik dori preparatlari bilan komplekslarini yaratish katta ahamiyatli muammoni xal etishiga yordam beradi. Ma’lumki, dori substansiyalari-ligandlar keltirib chiqaradigan nojo‘ya holatlarining asosiy sabablaridan biri ularning organizmda barqaror endogen metall-organik-dori komplekslarini hosil qilishi bilan izoxlab beriladi. Bu komplekslarning shakllanishi esa o‘z navbatida organizmda mavjud bo‘lgan metalloorganik biologik tizimlarning parchalanishi bilan kechadi. Organizmdan tashqarida sintez qilingan shunga o‘xshash komplekslar esa metalloorganellalarni parchalay olmaydi, chunki ushbu komplekslarni hosil bo‘lishi odatda, bir tomondan, dori preparatlarining toksik darajasi kamayishiga ko‘maklashadi, bu esa dorini ko‘proq dozalarda qo‘llash va samarali davolash ta’siriga erishish imkonini beradi. Bular koordinatsion birikmalarining «tuzilish-toksiklik» bog‘lanishining ichki qonuniyatlarini bilishni talab qiladi [2].

Shunday qilib, mavjud dorilarning zaminida, ularning biometallar bilan endogen komplekslarini hosil qilish yo‘li bilan, terapevtik ta’sirining keng spektriga ega bo‘lgan dori preparatlarining yangi sinfini yaratish mumkin. Bu esa o‘z novbatida keng ko‘lamlik terapevtik ta’sirga ega bo‘lgan koordinatsion birikmalarning molekulyar va kristallik tuzilishining eng murakkab jaryonlariga asoslangan fundamental tadqiqotlarni olib borishni talab qiladi.

Yuqorida bayon etilganlarni hisobga olib, respublikamiz soxa olimlari tomonidan o‘tkaziladigan biometallarining koordinatsion birikmalarini sintez qilishga oid ishlar alohida e’tiborga sazovorligini qayd etish lozim. Oxirgi yillarda ular tomonidan bir qator Kupir, Kobavit, Piratsin, Ferask va Antikovir kabi ko‘pgina koordinatsion birikmalar asosidagi dori preparatlari ishlab chiqilgan va tibbiy amaliyotga joriy qilingan [3, 4, 5].

Biometallar asosida sintez qilingan dastlabki preparatlardan biri – qon yaratuvchi preparatlar Koamid va Feramid hisoblanadi. Koamid va Feramid – kobalt

va temirning nikotinamid bilan kompleks birikmalaridir. Feramid kuchli ifodalangan qon yaratish xususiyatiga ega, organizmning temirni o‘zlashtirishiga ko‘maklashadi va anemiyani davolashga samarali ta’sir qiladi. Ma’lumki, kobalt gemopoezni rag‘batlantiradi, ya’ni peptidni faollashtirish orqali bir qator peptidlar gidrolizini tezlashtiradi va ekstramedullyar qon yaratish o‘choqlarini rag‘batlantirish yo‘li bilan suyak iligi giperplaziyasini xosil qiladi. Bundan tashqari, u temirning ionlashuvini va ekzogen kelib tushishi manbalaridan rezorbsiyasini kuchaytiradi, temirning gemoglobinga kiritilishiga, eritropoetin ishlab chiqarilishiga ko‘maklashadi, retikulotsitlarning miqdorini oshiradi. Kobalt suyak va ichak fosfotazalar, karboksilazalar, arginaza, katalaza va ko‘pgina peptidazalarni faollashtiradi, suksindegidrogenaza va sitoxromoksidaza faolligini kamaytiradi. Kobalt birikmalari tez rivojlanuvchi turdagi allergiya reaksiyalari kelib chiqishining oldini oladi. Masalan, kobalt(II) sulfat biotik dozalarda gistamin, serotonin va atsetilxolin ta’sirini yo‘q qilib, anafilaktik shok rivojlanishini to‘xtatadi [7]. Mis inson hayotiy faoliyatida favqulodda o‘rin tutadi [8]. Uning etishmasligi anemiyaga olib keladi, o‘z navbatida me’yordan o‘ta ko‘p miqdori, nojuya ta’sirlarga masalan, Vilson kasalligida, jigar to‘qimalarining yog‘li o‘zgarishiga olib keladi. Shunisi axamiyatga molikki, inson organizmida misning miqdori uning yoshiga va jinsiga bog‘liq bo‘lishi xam qayd etilgan. Mis red-oksidlanish jarayonlarni faollashtiruvchi va to‘qima nafas olishning yakuniy bosqichini katalizlovchi sitoxromoksidazaning tarkibiga kiradi. Tarkibida mis tutuvchi fermentlarga shuningdek ortodifeniloksidaza, tirozinaza va gidroksidaza kiradi, ular difenillarning oksidlanishini va mono fenollar gidroksillanishini katalizlaydi. Ko‘p hollarda fermentativ mis elektronlarni tashuvchi bo‘lib xizmat qiladi, u o‘z navbatida ferment-substrat komplekslari hosil bo‘lishida ham ishtirok etishi mumkin. Mis tarkibli

oqsillar mitoxondriyalar temir atomlarini me'yorda o'zlashtirish uchun zarur degan fikr mavjud bo'lib, ushbu bosqich mitoxondriyalar membranasining ichki yuzasida o'tuvchi gemo biosintezidan avval o'tishi lozim deb hisoblanadi.

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COMPLEXES OF SOME 3D METALS WITH THIOACIDS AND AMIDES

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Abstract

Coordination compounds of 3d metals with amino acid derivatives are considered one of the most rapidly developing and relevant areas of modern coordination chemistry and bioinorganic chemistry. These compounds attract the attention of researchers worldwide due to their geometric diversity, distinctive electronic structures, high biological activity, and selective catalytic properties.

Keywords

3d metals, complex, chemistry, coordination chemistry, mixed ligand.

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Annotatsiya. 3d-metallarning aminokislota hosilalari bilan koordinatsion birikmalari zamonaviy muvofiqlashuvchi kimyo (koordinatsion kimyo) va bioanorganik kimyoning eng jadal rivojlanayotgan va dolzarb yo‘nalishlaridan biri hisoblanadi. Bu sinf birikmalari o‘zining geometrik xilma-xilligi, o‘ziga xos elektron tuzilishi, yuqori biologik faolligi hamda selektiv katalitik xususiyatlari tufayli butun dunyo tadqiqotchilarining e’tiborini markazida turibdi.

Kalit so‘zlar: 3d-metallar, kompleks, kimyo, koordinatsion kimyo, aralash ligand.

3d-metallarning aminokislota hosilalari bilan koordinatsion birikmalari zamonaviy muvofiqlashuvchi kimyo (koordinatsion kimyo) va bioanorganik kimyoning eng jadal rivojlanayotgan va dolzarb yo‘nalishlaridan biri hisoblanadi. Bu sinf birikmalari

o‘zining geometrik xilma-xilligi, o‘ziga xos elektron tuzilishi, yuqori biologik faolligi hamda selektiv katalitik xususiyatlari tufayli butun dunyo tadqiqotchilarining e’tiborini markazida turibdi. 3d-metallar (\(Fe, Co, Ni, Cu, Zn\)) tirik organizmlardagi ko‘plab hayotiy jarayonlarda, jumladan metallofermentlar tarkibida faol markaz sifatida ishtirok etishi sababli, ularning bio-ligandlar bilan komplekslari tibbiyot, farmatsevtika, biotexnologiya va materialshunoslik sohalarida ulkan amaliy salohiyatga ega. So‘nggi yillarda biologik faol molekulalarni gibridlash orqali yangi avlod dorivor vositalarini yaratishga bo‘lgan qiziqish ortib bormoqda. Xususan, **4-aminobutan kislotasi (GABA)** markaziy asab tizimining asosiy tormozlovchi mediatorlaridan biri bo‘lsa, **4-aminosalitsil kislotasi (PASK)** sil kasalligiga qarshi qo‘llaniladigan samarali kimyoterapevtik vosita hisoblanadi. Ushbu kislotalarning d-metallari bilan hosil qilgan komplekslari nafaqat boshlang‘ich moddalarning terapevtik ta’sirini kuchaytiradi, balki organizmda dori vositasining toksikligini kamaytirib, uning bio-o‘zlashtirilishini (bioavailability) sezilarli darajada oshiradi. Kompleks birikmalarning tuzilishini yanada boyitish va ularga multifunksional xossalar baxsh etish maqsadida tarkibida bir vaqtning o‘zida ham aminokislota, ham amid guruhlari saqlovchi **aralash ligandli (amidli) komplekslar** sinteziga alohida e’tibor qaratilmoqda. Karbamid, nikotinamid yoki boshqa amid hosilalarining ichki koordinatsion sferaga kiritilishi kompleks hosil bo‘lish jarayonida yangi vodorod bog‘lar tizimining shakllanishiga va kristall panjaraning barqarorlashuviga olib keladi. Bu esa o‘z navbatida moddalarning fizik-kimyoviy parametrlarini tubdan o‘zgartiradi.

Ayrim 3d-metallarning tiokislotalar va amidlar bilan hosil qilgan koordinatsion birikmalari (komplekslari) zamonaviy bioanorganik, koordinatsion va dori-darmonlar kimyosining eng jadal o‘rganilayotgan obyektlaridan biridir. Tiokislotalar (tarkibida yumshoq donor markaz — oltingugurt S atomi saqlovchi ligandlar) va amidlar (tarkibida qattiq donor markaz — kislorod O va azot N atomlari saqlovchi ligandlar) bir vaqtning

o‘zida d-metallar bilan ta’sirlashganda, ulkan amaliy ahamiyatga ega bo‘lgan gibrid aralash ligandli tizimlar hosil bo‘ladi.

1. Kimyoviy va Strukturaviy O‘ziga Xosligi (HSAB Prinsipi)

Kimyoda Pearsonning **"Qattiq va yumshoq kislota-asoslar" (HSAB) nazariyasiga** ko‘ra, 3d-metallar (Mn, Fe, Co, Ni, Cu, Zn) oraliq xarakterga ega kislotalardir.

• **Tiokislotalar (R-COSH yoki R-CSSH)** tarkibidagi deprotonlangan oltingugurt (S^-) atomi "yumshoq" asos hisoblanadi.

• **Amidlar ($R-CONH_2$)** tarkibidagi kislorod (O) va azot (N) atomlari esa "qattiq" asoslardir.

Bunday aralash ligandli muhitda 3d-metall ionlari bir vaqtning o‘zida ham "qattiq", ham "yumshoq" donor markazlar bilan koordinatsiyaga kirisha oladi. Bu esa molekulada o‘ziga xos **elektron va zaryad ko‘chish (charge transfer)** jarayonlarini yuzaga keltiradi, kristall panjarada kuchli vodorod bog‘lari tizimini hosil qiladi va kompleksga yuqori termodinamik hamda kinetik barqarorlik baxsh etadi.

2. Tibbiyot va Farmatsevtikadagi Ulkan Ahamiyati

Biogen 3d-metallarning tiokislota va amidli komplekslari dorivor preparatlar yaratishda yangi ufq ochmoqda.

• **Antimikrob va Antifungal faollik:** Erkin tiokislotalar yoki amidlarga qaraganda ularning 3d-metalli komplekslari mikrob hamda zamburug‘ hujayralariga osonroq kirib boradi.

• **O‘smaga qarshi (Antitumor) ta’sir:** Oltingugurt saqlovchi tiokislota hosilalari va amid guruhlari bo‘lgan d-metall komplekslari rak hujayralarining **DNK zanjiri bilan faol reaksiyaga kirishadi**.

• **Toksiklikni kamaytirish va Bio-o‘zlashtirilishni oshirish:** 3d-metallar bilan hosil qilingan bunday gibrid molekulalar dori vositasining nojo‘ya ta’sirini kamaytiradi va qon tizimida so‘rilishini yaxshilaydi.

3. Katalizatorlik Xususiyatlari

Sanoatda va organik sintezda 3d-metallarning tiokislota hamda amid komplekslari ekologik toza va arzon **gomogen hamda geterogen katalizatorlar** sifatida qo‘llaniladi:

• **Oksidlanish-qaytarilish (Redoks) jarayonlari:** Tiokislotalardagi oltingugurt atomi koordinatsion sferada metallning oksidlanish darajasini oson o‘zgarishiga yordam beradi.

• **Asimmetrik kataliz:** Amid va aminokislota qoldiqlari saqlovchi xiral komplekslar farmatsevtik sintezda faqatgina kerakli optik izomerni olishda xizmat qiladi.

4. Materialshunoslik va Sensor Texnologiyalari

Bu sinf birikmalari nafaqat biologiyada, balki aqlli materiallar yaratishda ham muhim:

• **Molekulyar Magnetlar va Optik materiallar:** Fe(II), Co(II), Ni(II) ionlari tiokislota/amid tizimida noodatiy magnit xossalarini va luminessent xususiyatlarni namoyon qiladi.

• **Kimyoviy Sensorlar:** Oltingugurt atomining og‘ir va zaharli metallarga (Hg^{2+}, Pb^{2+}, Cd^{2+}) bo‘lgan yuqori moyilligi tufayli sensorlar tarkibiga kiritiladi.

Xulosa

3d-metallarning tiokislotalar va amidlar bilan komplekslari o‘zining ko‘p funksiyaliligi bilan ajralib turadi. Oltingugurt (S) va azot/kislorod (N, O) donor atomlarining sinergik ta’siri tufayli ushbu birikmalar tibbiyotda kam toksiklikka ega dorilar, kimyo sanoatida yuqori samarali katalizatorlar va texnikada innovatsion materiallar sifatida ulkan istiqbolga egadir.

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Solar energy is a key factor in the economy of the future

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Abstract

This article examines the role of solar energy in the global economy and its impact on the future development of the electric power sector. The author analyzes the transition to renewable energy sources, the advantages of solar energy, and the prevention of environmental damage, using Uzbekistan as a case study. The research findings indicate that solar energy is the most environmentally friendly and cost-effective energy source.

Keywords

solar energy, renewable resources, photovoltaic technologies, green economy, energy sector of Uzbekistan.

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Аннотация: В статье рассматривается роль солнечной энергетики в мировой экономике и ее влияние на перспективы развития электроэнергетики. Автор анализирует вопросы перехода к возобновляемым источникам энергии, преимущества солнечной энергетики и предотвращение ущерба окружающей среде. Данные темы рассматриваются на примере Узбекистана. Результаты исследования свидетельствуют о том, что солнечная энергетика является наиболее экологически чистым и экономически эффективным источником энергии.

Ключевые слова: солнечная энергетика, фотоэлектрические технологии,

возобновляемые ресурсы, «зеленая» экономика, энергетический сектор Узбекистана.

Введение

Одной из главных проблем, стоящих сегодня перед человечеством, является истощение энергетических ресурсов. Традиционные источники энергии — такие как нефть, газ и уголь — ограничены. Например, по оценкам, запасов нефти хватит еще на 47–56 лет, а запасов природного газа — на 49–53 года. Угля, запасы которого относительно велики, хватит на срок от 70 до 140 лет. [1] Использование подобных ресурсов также наносит значительный ущерб окружающей среде. В связи с этим единственным рациональным решением является переход на возобновляемые источники энергии. Одним из таких источников является солнечная энергия. Переход на этот способ выработки электроэнергии имеет ряд преимуществ. Во-первых, это экологически чистый и неисчерпаемый ресурс. Во-вторых, со временем процесс получения энергии таким способом становится все более доступным. В-третьих, такой метод генерации электроэнергии помогает странам снизить энергетическую зависимость. К 2023 году мощность, вырабатываемая фотоэлектрическими солнечными панелями, превысила 1,5 тераватта. [2] Солнечная энергия имеет огромное значение для Узбекистана. Благодаря своему географическому положению страна находится в одном из самых благоприятных регионов мира для использования этого ресурса. Ежегодно территория страны получает в среднем от 2700 до 3000 часов солнечного света. Правительство приняло ряд постановлений, направленных на развитие фотоэлектрических технологий. Цель состоит в том, чтобы к 2030 году доля солнечной энергии в общем объеме электроэнергии, вырабатываемой в Узбекистане, достигла 25%. [3] Данная статья посвящена оценке потенциальных преимуществ солнечной энергии для мировой экономики, изучению

международного опыта и анализу перспектив ее влияния на Узбекистан. Рассматривая эти темы, мы стремимся найти ответы на такие вопросы, как: когда фотоэлектрические технологии вытеснят традиционные источники энергии? Каких результатов может достичь Узбекистан в этой сфере?

Обзор литературы

В данном исследовании используются различные международные и национальные источники для демонстрации экономической и социальной значимости солнечной энергетики, что обогащает содержание статьи. Во-первых, в статье «Когда закончатся запасы ископаемого топлива?» (When will fossil fuels run out?), размещенной на сайте MET Group, подчеркивается исчерпаемость традиционных источников энергии и содержится предупреждение о том, что их дальнейшее использование нынешними темпами в конечном итоге приведет к истощению запасов. Кроме того, в разделе «Фотоэлектрические энергетические системы» (Photovoltaic Power Systems) на сайте Международного энергетического агентства (МЭА) описывается текущий уровень развития фотоэлектрических технологий. Также на этом ресурсе представлена статья «Политика в области солнечной энергетики в Узбекистане: дорожная карта» (Solar Energy Policy in Uzbekistan: A Roadmap), в которой рассматривается внимание правительства Узбекистана к солнечной энергетике и его приверженность развитию данного сектора в будущем. Помимо этого, данные из отчета Международного агентства по возобновляемым источникам энергии (IRENA) «Статистика мощностей возобновляемой энергетики» (Renewable Capacity Statistics) позволяют проанализировать текущие показатели занятости в секторе солнечной энергетики и объемы производства в мировом масштабе. Для обоснования национального правового контекста в исследовании используются сведения о солнечной энергетике и ее использовании, содержащиеся в нормативно-правовых актах,

представленных на сайте Lex.uz. Это помогает понять правовые основы, способствующие развитию солнечной энергетики в Узбекистане.

Глобальное развитие солнечной энергетики

За последнее десятилетие сектор солнечной энергетики продемонстрировал беспрецедентный рост. В результате стоимость солнечных панелей снизилась более чем на 90%. [4] Благодаря этому солнечная энергетика стала доступным источником электроэнергии для многих стран. В данной таблице показан рост использования солнечной энергии в различных странах за трехлетний период. [5]

Mamlakat	**2020 yil (GVt)**	**2023 yil (GVt)**	**O'sish %**
Xitoy	253	430	+70
AQSh	95	178	+87
Hindiston	39	81	+108
O'zbekiston	0.3	4.2	+1300

Как показывает таблица, Узбекистан стремительно развивает этот сектор. Столь резкий рост свидетельствует о заинтересованности правительства в солнечной энергетике.

Социально-экономический эффект и новые рабочие места

По данным IRENA (Международного агентства по возобновляемым источникам энергии), к 2023 году в секторе солнечной энергетики во всем мире было занято 4,9 миллиона человек. Этот показатель вдвое превышает данные 2016 года. Только в Узбекистане по состоянию на 2023 год в данной отрасли работало более 12 000 человек. [5] Солнечная энергетика также играет важную роль для сельских районов. Такие населенные пункты зачастую удалены от основных

электросетей, из-за чего обеспечить их электроснабжение практически невозможно. В подобных условиях фотоэлектрические технологии позволяют сельским районам самостоятельно обеспечивать себя электроэнергией, поскольку для этого требуется лишь попадание солнечного света на солнечные панели.

Правовые основы развития солнечной энергетики в Узбекистане

В Указе Президента Республики Узбекистан № УП-5680 от 1 марта 2019 года «О дополнительных мерах по дальнейшему развитию энергетической отрасли» приоритет был отдан использованию возобновляемых источников энергии. Впоследствии, в 2021 году, вступил в силу Закон «О возобновляемых источниках энергии», закрепивший правовые основы данной сферы. [7] Согласно этому закону, инвесторы, строящие солнечные электростанции, имеют право на получение налоговых льгот сроком на 10 лет. Кроме того, была внедрена система «зеленого тарифа», позволяющая частным электростанциям продавать излишки вырабатываемой энергии государству.

ЗАКЛЮЧЕНИЕ

На основании результатов данного исследования можно сделать следующие ключевые выводы: во-первых, солнечная энергетика не только полезна для окружающей среды, но и обеспечивает экономические преимущества. Значительное снижение стоимости фотоэлектрических технологий за последнее десятилетие делает солнечную энергию дешевле традиционных источников энергии. Во-вторых, Узбекистан обладает отличными географическими и климатическими условиями для развития солнечной энергетики. Если страна достигнет стратегических целей, намеченных на 2030 год, инвестиции в этот сектор начнут приносить экономическую отдачу уже через один-два года. В-третьих, развитие солнечной энергетики не только решает энергетические проблемы, но и способствует социально-экономическому развитию. Создание

новых рабочих мест, обеспечение электроэнергией сельских районов и наращивание экспортного потенциала — все эти факторы содействуют переходу к «зеленой» экономике. Таким образом, являясь важнейшим элементом экономики будущего, солнечная энергетика не только решает актуальные энергетические и экологические задачи, но и открывает новые экономические возможности. Узбекистан обладает огромным потенциалом в этой сфере, и этот потенциал может быть полностью реализован благодаря последовательной государственной политике и привлечению иностранных инвестиций.

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CURRENT ISSUES OF RECOGNIZING THE PRINCIPLE OF FREEDOM FROM COMPELLED SELF-INCRIMINATION AND TESTIMONY AGAINST CLOSE RELATIVES AS AN INDEPENDENT PRINCIPLE OF CRIMINAL PROCEDURE

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ABSTRACT

This article examines the constitutional and international legal foundations of the principle of freedom from compelled self-incrimination and compelled testimony against close relatives, as well as its place within the system of criminal procedural law. The study analyzes the relationship between this principle and the presumption of innocence, the right to a fair trial, human dignity, and the right to defense. Through a comparative analysis of the legislation of the Republic of Uzbekistan, international legal instruments, the case law of the European Court of Human Rights, and the criminal procedure legislation of foreign countries, the article substantiates the necessity of recognizing this guarantee as an independent principle of criminal procedure. Based on the findings', scientifically grounded proposals are developed for introducing a separate provision into the Criminal Procedure Code of the Republic of Uzbekistan.

Keywords

criminal procedure, principles of criminal procedure, privilege against self-incrimination, right to remain silent, witness immunity, presumption of innocence, fair trial, human rights, close relatives, Criminal Procedure Code.

ЖИНОЯТ ПРОЦЕССИДА ЎЗИГА ВА ЯҚИН ҚАРИНДОШЛАРИГА ҚАРШИ ГУВОҲЛИК БЕРИШГА МАЖБУР ЭТИЛМАСЛИК ПРИНЦИПИНИ МУСТАҚИЛ ПРОЦЕССУАЛ ПРИНЦИП СИФАТИДА МУСТАҲКАМЛАШНИНГ ДОЛЗАРБ МАСАЛАЛАРИ

ХИКМАТОВ АЗИЗ БОБОНАРОВИЧ

Ўзбекистон Республикаси Ҳуқуқни муҳофаза қилиш Академияси мустақил изланувчиси

АННОТАЦИЯ. Мазкур мақолада жиноят процессида ҳеч кимнинг ўзига ва яқин қариндошларига қарши гувоҳлик беришга мажбур этилмаслиги ҳуқуқининг конституциявий ва халқаро-ҳуқуқий асослари ҳамда унинг жиноят-процессуал ҳуқуқ тизимидаги ўрни таҳлил қилинган. Мазкур кафолатнинг айбсизлик презумпцияси, адолатли судлов, шахс қадр-қиммати ва ҳимоя ҳуқуқи билан ўзаро боғлиқлиги ёритилган. Шунингдек, миллий қонунчилик, халқаро ҳуқуқ ҳужжатлари, Европа инсон ҳуқуқлари суди амалиёти ҳамда хорижий давлатлар жиноят-процессуал қонунчилиги қиёсий таҳлил қилиниб, мазкур кафолатни Ўзбекистон Республикаси Жиноят-процессуал кодексида мустақил процессуал принцип сифатида мустаҳкамлаш зарурати илмий жиҳатдан асосланган. Шу асосда Жиноят-процессуал кодексга алоҳида принцип киритишга оид таклифлар ишлаб чиқилган.

Калит сўзлар: *жиноят процесси, жиноят-процессуал принциплар, ўзини ўзи фош этмаслик ҳуқуқи, сукут сақлаш ҳуқуқи, гувоҳлик иммунитети, айбсизлик презумпцияси, адолатли судлов, инсон ҳуқуқлари, яқин қариндошлар, Жиноят-процессуал кодекс.*

Янги Ўзбекистонда инсон қадри, шахс эркинлиги ва суд-ҳуқуқ тизимида адолатни таъминлаш давлат сиёсатининг асосий йўналишларидан бирига айланди. Янги Ўзбекистон тараққиёт стратегиясида шахсий ва сиёсий ҳуқуқларни ҳимоя қилиш соҳасида амалга оширилиши лозим бўлган муҳим ислоҳотлар қаторида “жиноят процессида жабрланувчи ва гувоҳларнинг ҳуқуқлари ва хавфсизлигини таъминлаш механизмини такомиллаштириш” масаласига ҳам

алоҳида тўхталиб ўтилган[1]. Шахс ўзига ва ўз яқин қариндошларига қарши гувоҳлик қилишга мажбур этилиши мумкин эмаслиги қоидасини қатъийлаштириш, унинг аҳамиятини ошириш биринчи навбатда, давлат раҳбари томонидан эътироф этилган ана шу масалани таъминлашга қаратилган.

Ўзбекистон Республикаси Президенти Ш.М. Мирзиёев томонидан илгари сурилаётган “Инсон қадри” ғояси нафақат ижтимоий-сиёсий шиор, балки ҳуқуқий тизимни инсон манфаатига хизмат қилдиришга қаратилган концептуал ёндашувдир. Мамлакатимиз раҳбари ўз чиқишларида қонун устуворлиги, инсон ҳуқуқлари ва эркинликларини таъминлаш, тергов ва суд амалиётига илғор инсон ҳуқуқлари стандартларини жорий этиш зарурлигини бир неча бор таъкидлаган.

Жиноят процессида инсон қадрини таъминлашнинг энг муҳим кўринишларидан бири – шахсни ўзига қарши гувоҳлик беришга, айбини тан олишга ёки яқин қариндошларини фош этишга мажбур қилмасликдир. Бу норма оддий процессуал имтиёз эмас. Бу шахснинг ички эркинлиги, виждон дахлсизлиги, оилавий муносабатлар, айбсизлик презумпцияси ва адолатли судлов ҳуқуқи билан бевосита боғлиқ фундаментал кафолатдир.

Бироқ ушбу мавзуда илмий баҳс мавжуд. Бир қарашда, шахсга сукут сақлаш ҳуқуқини бериш жиноятни фош этишни қийинлаштиради, айбдор шахслар жавобгарликдан қочишига имконият яратади. Бошқа ёндашувга кўра, жиноят процессида ҳақиқатни аниқлаш мақсади инсонни ўзини фош этишга мажбурлаш орқали эмас, балки қонуний, холис ва ишончли далиллар йиғиш орқали таъминланиши лозим. Бизнингча, иккинчи ёндашув ҳуқуқий давлат талабларига кўпроқ мос келади. Чунки жиноят процессида давлатнинг кучли процессуал

[1] Қонунчилик маълумотлари миллий базаси, 29.01.2022 й., 06/22/60/0082-сон, 18.03.2022 й., 06/22/89/0227-сон, 21.04.2022 й., 06/22/113/0330-сон; 10.02.2023 й., 06/23/21/0085-сон

аппаратига қарши турган шахсни ўз айбини исботлашга мажбур қилиш адолатли судлов ғоясига зиддир.

Ўзбекистон Республикаси Конституциясининг 28-моддасида “ҳеч ким ўзига ва яқин қариндошларига қарши гувоҳлик беришга мажбур эмас”лиги бевосита мустаҳкамланган. Шунингдек, мазкур моддада гумон қилинувчи, айбланувчи ёки судланувчи ўзининг айбсизлигини исботлаши шарт эмаслиги ва исталган вақтда сукут сақлаш ҳуқуқидан фойдаланиши мумкинлиги белгиланган. Демак, ушбу кафолат конституциявий даражада эътироф этилган.

Таъкидлаш лозимки, Ўзбекистон Республикаси Жиноят-процессуал кодексида ушбу норма жиноят процесси принциплари тизимида мустақил принцип сифатида алоҳида мустаҳкамланмаган.

Ваҳоланки, ҳеч ким ўзига қарши гувоҳлик беришга мажбур эмаслиги халқаро ҳуқуқда адолатли судловнинг муҳим элементи сифатида тан олинади. Фуқаровий ва сиёсий ҳуқуқлар тўғрисидаги халқаро пактнинг 14-моддаси 3-қисми “g” бандида ҳар бир шахс ўзига қарши гувоҳлик беришга ёки айбини тан олишга мажбур этилмаслиги кераклиги белгиланган. Бу қоида жиноят судловида шахсни процессуал объект эмас, балки ҳуқуқ “соҳиби” сифатида кўриш ғоясига асосланади.

Мазкур халқаро стандартнинг мазмуни шундан иборатки, айбловни исботлаш мажбурияти давлат зиммасида бўлиши лозим. Шахснинг сукут сақлаши, саволларга жавоб бермаслиги ёки ўзини фош этувчи маълумотларни тақдим этмаслиги унинг айбдорлигини англатмаслиги керак. Акс ҳолда айбсизлик презумпцияси формал қоидага айланиб қолади.

Европа инсон ҳуқуқлари суди амалиётида ҳам сукут сақлаш ҳуқуқи ва ўзини ўзи фош этишга мажбур этилмаслик адолатли судлов ҳуқуқининг ажралмас қисми сифатида баҳоланади. Гарчи Европа инсон ҳуқуқлари конвенциясида бу ҳуқуқ

алоҳида модда сифатида тўғридан-тўғри кўрсатилмаган бўлса-да, суд амалиётида у Конвенциянинг 6-моддасида назарда тутилган адолатли судлов кафолатларидан келиб чиқарилган.

Бу ерда муҳим фарқ бор: “сукут сақлаш ҳуқуқи” ва “ўзини ўзи фош этишга мажбур этилмаслик” тушунчалари бир-бирига яқин бўлса-да, айнан бир хил эмас. Сукут сақлаш ҳуқуқи асосан оғзаки ёки ёзма кўрсатув бермаслик ҳуқуқини ифодалайди. Ўзини ўзи фош этишга мажбур этилмаслик эса кенгроқ тушунча бўлиб, шахсни ўз айбини тасдиқловчи тушунтириш, маълумот, ҳужжат ёки бошқа ахборотни мажбурий тарзда тақдим этишдан ҳимоя қилади.

Ўзбекистон Республикаси Конституциясининг 28-моддасида мазкур кафолат аниқ ва қатъий ифодаланган. Унга кўра, гумон қилинувчи, айбланувчи ёки судланувчи ўзининг айбсизлигини исботлаши шарт эмас, исталган вақтда сукут сақлаш ҳуқуқидан фойдаланиши мумкин, ҳеч ким ўзига ва яқин қариндошларига қарши гувоҳлик беришга мажбур эмас.

Ўзбекистон Республикаси Жиноят-процессуал кодексида ҳам ушбу кафолатга яқин бир қатор нормалар мавжуд. Масалан, айбсизлик презумпциясига оид моддада шахс ўз айбсизлигини исботлашга мажбур эмаслиги ва сукут сақлаш ҳуқуқидан фойдаланиши мумкинлиги кўрсатилган. Гувоҳнинг ҳуқуқларига оид моддада эса гувоҳ ўзига ва яқин қариндошларига қарши кўрсатув бермаслик ҳуқуқига эгалиги белгиланган. Ушланган шахсга ҳуқуқларини тушунтириш, унинг кўрсатувлари кейинчалик далил сифатида фойдаланилиши мумкинлиги ҳақида огоҳлантириш талаблари ҳам процессуал қонунчиликда акс этган.

Бироқ бу нормалар тарқоқ ҳолда жойлашган. Улар ягона концептуал принцип даражасига кўтарилмаган. Натижада амалиётда ушбу кафолат баъзан фақат гувоҳнинг ҳуқуқи ёки айбланувчининг процессуал имконияти сифатида талқин

қилинади. Аслида эса бу қоида бутун жиноят процессига татбиқ этиладиган умумий принцип бўлиши лозим.

Муаммонинг моҳияти шундаки, ЖПКда мазкур қоида мустақил принцип сифатида белгиланмаса, унинг ҳуқуқий таъсир доираси торайиб кетади. Масалан, тушунтириш олиш, тезкор-қидирув тадбирлари натижаларини процессуаллаштириш, дастлабки сўроқ, ушлаш пайтидаги мулоқот, юзлаштириш ёки бошқа процессуал ҳаракатларда ушбу кафолат бир хил даражада таъминланмаслиги мумкин. Шу сабабли мазкур нормани ЖПКнинг принциплар тизимига киритиш назарий жиҳатдан ҳам, амалий жиҳатдан ҳам долзарбдир.

Жиноят-процессуал ҳуқуқ назариясида ўзини ўзи фош этишга мажбур этилмаслик принципи бир нечта асосий ғоя билан боғланади.

Биринчидан, бу принцип айбсизлик презумпциясининг мантиқий давомидир. Агар шахс айбсиз деб ҳисобланса, у ўз айбсизлигини исботлашга мажбур эмас. Шунинг учун у ўзини оқлаш ёки айбловга ёрдам бериш мажбуриятига эга бўлмаслиги керак.

Иккинчидан, бу принцип шахс эркинлиги ва қадр-қимматини ҳимоя қилади. Инсонни ўз айбини тан олишга ёки яқин қариндошларига қарши гувоҳлик беришга мажбурлаш унинг ички эркинлигига, виждонига ва оилавий муносабатларига оғир таъсир кўрсатади.

Учинчидан, ушбу принцип терговда ноқонуний босим, қийноқ, психологик тазйиқ ва мажбурий иқрорликларнинг олдини олиш воситасидир. Жиноят процессида айбни тан олиш эмас, балки қонуний йўл билан тўпланган далиллар ҳал қилувчи аҳамиятга эга бўлиши лозим.

Миллий олимлар томонидан ҳам гувоҳ иммунитети, шахснинг ўзини фош этмаслик ҳуқуқи ва яқин қариндошларга қарши кўрсатув беришдан бош тортиш масалалари жиноят процессида инсон ҳуқуқларини таъминлашнинг муҳим

кафолати сифатида баҳоланади. Айрим тадқиқотларда гувоҳ иммунитети нафақат гувоҳга, балки жиноят процессида иштирок этувчи бошқа шахсларга ҳам дахлдор экани таъкидланади. Бу ёндашув тўғри, чунки ўзини ўзи фош этмаслик ҳуқуқи шахснинг процессуал мақомига қараб чекланиб қолмаслиги керак.

Хусусан, А.С. Пўлатов гувоҳлик иммунитетини сўроқ қилинувчи шахснинг ўзи ва яқин қариндошларига оид маълумотларни ошкор қилиш мажбуриятидан озод этилиши, шу ҳуқуқни тушунтириш ва расмийлаштириш билан боғлиқ процессуал нормалар йиғиндиси сифатида таърифлайди[2].

Шунингдек, М. Абдуллаева эса гувоҳлик иммунитети институтини Ўзбекистон жиноят-процессуал қонунчилигига киритиш инсон ҳуқуқлари, оилавий қадриятлар ва касбий сирни ҳимоя қилиш нуқтаи назаридан зарурлигини асослайди.

О. Мукимбаев гувоҳнинг ўзига ва яқин қариндошларига қарши гувоҳлик бермаслик ҳуқуқини конституциявий кафолат сифатида таҳлил қилади[3].

Шу билан бирга, А.Т. Алламуратов ва Қ.Қ. Маткаримовнинг гувоҳлик иммунитетига оид илмий қарашлари ушбу институтнинг назарий асосларини шакллантиришда муҳим аҳамият касб этади.

Хорижий олимлар орасида ҳам бу борада турли фикрлар мавжуд. Бир гуруҳ муаллифлар мазкур ҳуқуқни адолатли судловнинг марказий элементи деб ҳисоблайди. Уларга кўра, давлат айбловни шахснинг ўз оғзидан олинган мажбурий маълумотлар орқали эмас, мустақил далиллар орқали исботлаши шарт. Бошқа ёндашув вакиллари эса бу ҳуқуқнинг ҳаддан ташқари кенг талқин қилиниши жиноятларни очишни қийинлаштириши мумкинлигини таъкидлайди.

[2] А.С.Пўлатхонов. Жиноят процессида гувоҳ институтининг генезиси, ҳолати ва унинг ривожлантириш истиқболлари. DSi диссертациясига автореферати - Тошкент. 2026.
[3] Муқимбаев. О. Жиноят-процессидаги гувоҳлик бериш: ҳуқуқ мақомининг баъзи тарихий ривожланиши хусусида/ИИВ Малака ошириш институти Ахборотномаси – 4 (15) 2025. 100-106 б.

Ж.Лангбайн ўзини ўзи фош этмаслик имтиёзининг келиб чиқишини фақат сиёсий-тарихий воқеалар, масалан Star Chamber ёки диний таъқиблар билан эмас, балки XVIII аср охирида адвокат ҳимоясининг кучайиши ва тортишувли жиноят процесси шаклланиши билан боғлайди. Унинг фикрича, бу имтиёз умумий ҳуқуқ тизимида ҳимоя институти ривожланиши натижасида шаклланган.[4]

Э.Эшворт ушбу масалани Европа инсон ҳуқуқлари ҳуқуқи нуқтаи назаридан таҳлил қилган. Унинг “Self-Incrimination in European Human Rights Law – A Pregnant Pragmatism?” мақоласи ўзини ўзи фош этмаслик ҳуқуқи ва сукут сақлаш ҳуқуқининг Европа инсон ҳуқуқлари суди амалиётида қандай шаклланганини ўрганади. Унинг фикрича, ўзини ўзи фош этмаслик ҳуқуқи фақат процессуал техника эмас, балки адолатли судлов ва инсон ҳуқуқларининг бир қисми ҳисобланади.[5]

Ж.Жексон сукут сақлаш ҳуқуқини ўзини ўзи фош этмаслик имтиёзидан фарқлаш кераклигини таъкидлайди. Унингча, жиноят процессида сукут сақлаш ҳуқуқи **ҳимоянинг фаол ва самарали иштирокини таъминлайдиган адолатли судлов стандарти** сифатида кучайтирилиши лозим. Жексон фикрича, сукут сақлаш ҳуқуқини тор маънодаги “жавоб бермаслик” эмас, балки бутун ҳимоя ҳуқуқини таъминловчи процессуал кафолат сифатида талқин қилади.[6]

Пол Робертс ва Адриан Цукерман ўзини ўзи фош этмаслик имтиёзини тарихан эркинлик ва давлат зўравонлигига қарши конституциявий кафолат сифатида баҳолайди. Бироқ улар ҳозирги ҳуқуқий ҳолатда ушбу имтиёзнинг

[4] Langbein J.H. The Historical Origins of the Privilege Against Self-Incrimination at Common Law // Michigan Law Review. – 1994. – Vol. 92. – P. 1047-1085.
[5] Ashworth A. Self-Incrimination in European Human Rights Law — A Pregnant Pragmatism? // Cardozo Law Review. – 2008. – Vol. 30. – P. 751-774.
[6] Jackson J.D. Re-conceptualizing the Right of Silence as an Effective Fair Trial Standard // International and Comparative Law Quarterly. — 2009. — Vol. 58. — P. 835–861.

назарий асослари баҳсли эканини, айрим давлатларда қонунлар орқали унинг доираси торайтирилаётганини ҳам таъкидлайди.[7]

Рус олими Н.Ю. Волосова гувоҳлик иммунитетини фақат алоҳида ҳуқуқ эмас, балки жиноят процесси принципи ва бир вақтнинг ўзида мустақил ҳуқуқий институт сифатида кўради. Унингча, гувоҳлик иммунитети таркибига: 1) ўзини ўзи фош этмаслик; 2) яқин қариндошлар ва турмуш ўртоғига қарши кўрсатув бермаслик; 3) касбий ёки хизмат вазифаси билан боғлиқ иммунитетлар киради.[8]

Юқорида билдирилган фикрлардан келиб чиқадиган бўлсак, ўзини ўзи фош этишга мажбур этилмаслик принципи мутлақ маънода жиноят процессига тўсқинлик қилувчи восита эмас. У шахсга ёлғон кўрсатув бериш, далилларни йўқ қилиш ёки бошқа шахсларни асоссиз айблаш ҳуқуқини бермайди. Унинг асосий вазифаси – давлат органлари шахсдан мажбурий иқрорлик ёки ўзини айбловчи кўрсатув олишга суянмаслигини таъминлашдир.

Хорижий мамлакатлар қонунчилиги ўрганилиши шуни кўрсатадики, бир қатор давлатлар жиноят-процессуал қонунчилигида мазкур кафолат алоҳида принцип, яъни мустақил модда сифатида алоҳида белгиланган.

Хусусан, Украина Жиноят-процессуал кодексининг 18-моддасида “ўзини фош этишдан эркинлик ва яқин қариндошлар ҳамда оила аъзоларига қарши гувоҳлик бермаслик ҳуқуқи” жиноят процесси принциплари қаторида алоҳида белгиланган. Унга кўра, шахс ўз айбини тан олишга, ўзига қарши кўрсатув беришга ёки яқин қариндошлари ва оила аъзоларини фош этувчи кўрсатувлар беришга мажбур этилиши мумкин эмас.

[7] Roberts P., Zuckerman A. Roberts & Zuckerman’s Criminal Evidence. 3rd ed. – Oxford: Oxford University Press, 2022. Chapter 13: The Accused’s Privilege Against Self-Incrimination.

[8] Волосова Н.Ю. Уголовно-процессуальный институт свидетельского иммунитета: теория, законодательное регулирование и практика: дисс. … докт. юрид. наук. – Москва, 2015.

Ёки, Арманистон Жиноят-процессуал кодексининг 20-моддасида ҳам шахснинг ўзи, турмуш ўртоғи ва яқин қариндошларига қарши кўрсатув бериш мажбуриятидан озодлиги алоҳида модда сифатида мустаҳкамланган. Бу ёндашув ушбу кафолатни фақат гувоҳ мақоми билан чекламай, кенгроқ процессуал принцип сифатида тушунишга имкон беради.

Озарбайжон Жиноят-процессуал кодексининг 20-моддасида “ўзини ва қариндошларини фош этиш эркинлиги” мустақил норма сифатида белгиланган. Бу қоида шахсни ўзига ва яқин қариндошларига қарши гувоҳлик беришга мажбурлашни тақиқлайди ҳамда бундай ҳуқуқдан фойдалангани учун шахсга салбий ҳуқуқий оқибатлар юкланмаслиги кераклигини англатади.

Қозоғистон Жиноят-процессуал кодексининг 28-моддасида шахсни ўзига, турмуш ўртоғига ва яқин қариндошларига қарши гувоҳлик бериш мажбуриятидан озод этишга оид алоҳида модда мавжуд. Бу қоида гувоҳ иммунитети ва шахсий процессуал дахлсизликни таъминлашга қаратилган.

Қиёсий таҳлилдан келиб чиқиб айтиш мумкинки, Ўзбекистон қонунчилигида мазкур кафолат конституциявий даражада тан олинган бўлса-да, унинг жиноят-процессуал принцип сифатида алоҳида мустаҳкамланиши хорижий тажрибага мос бўлади.

Юқоридагилардан келиб чиқиб, Ўзбекистон Республикаси Жиноят-процессуал кодексига “ўзини ва яқин қариндошларини фош этишга мажбур этилмаслик принципи”ни киритиш мақсадга мувофиқ бўлади.

Хусусан, таклиф этилаётган норма қуйидаги мазмунда бўлиши мумкин:

“23¹-модда. Ўзини ва яқин қариндошларини фош этишга мажбур этилмаслик принципи

Ҳеч ким ўзига, оила аъзоларига ва яқин қариндошларига қарши кўрсатувлар беришга мажбур эмас.

Ушбу модданинг биринчи қисмида назарда тутилган ҳолларда шахс кўрсатув беришдан бош тортганлиги учун жавобгарликка тортилиши мумкин эмас”.

Ушбу норманинг миллий қонунчилигимизга ушбу таклифнинг аҳамияти бир неча жиҳатдан намоён бўлади.

Биринчидан, Конституциядаги кафолат ЖПКда тўлиқ ва тизимли тарзда акс эттирилади, конституциявий норма амалиётда бевосита ишлаши учун процессуал механизмлар аниқ белгилаб беради.

Иккинчидан, ушбу принцип тергов ва суд амалиётида мажбурий иқрорлик, босим остида олинган кўрсатувлар, ҳуқуқи тушунтирилмаган ҳолда сўроқ қилиш каби ҳолатларнинг олдини олади.

Учинчидан, шахснинг ушбу ҳуқуқдан фойдаланиши айбдорлик белгиси сифатида баҳоланмаслиги кафолатланади. Амалиётда баъзан “саволларга жавоб бермади”, “иқрор бўлмади”, “тергов билан ҳамкорлик қилмади” каби ҳолатлар шахсга салбий муносабат шакллантириши мумкин.

Тўртинчидан, яқин қариндошларга қарши гувоҳлик беришга мажбурламаслик оилавий муносабатлар ва инсоннинг маънавий-ахлоқий эркинлигини ҳимоя қилади. Давлат жиноятни фош этиш мақсадида шахсни ўз ота-онаси, фарзанди, турмуш ўртоғи, ака-укаси ёки опа-синглисига қарши мажбурий кўрсатув бериш ҳолатига қўймаслиги керак.

Хулоса қилиб айтганда, ҳеч ким ўзига ва яқин қариндошларига қарши гувоҳлик беришга мажбур эмаслиги жиноят процессида инсон ҳуқуқларини таъминлашнинг асосий кафолатларидан биридир. У айбсизлик презумпцияси, адолатли судлов, шахс қадр-қиммати, ҳимоя ҳуқуқи ва қонуний далиллар институти билан узвий боғлиқ.

Ўзбекистон Республикаси Конституциясининг 28-моддаси мазкур кафолатни аниқ белгилаган. Жиноят-процессуал кодексида ҳам ушбу ҳуқуқ айрим

нормаларда акс этган. Бироқ унинг тарқоқ тарзда ифодаланиши етарли эмас. Хорижий давлатлар тажрибаси, халқаро стандартлар ва миллий суд-ҳуқуқ ислоҳотлари мантиғи ушбу кафолатни ЖПКда мустақил принцип сифатида мустаҳкамлашни тақозо этади.

Шу муносабат билан Ўзбекистон Республикаси Жиноят-процессуал кодексининг принциплар тизимига “Ўзини ва яқин қариндошларини фош этишга мажбур этилмаслик принципи”ни киритиш мақсадга мувофиқ. Бу ўзгариш Конституцияда белгиланган инсон ҳуқуқлари кафолатларини жиноят процессида тўлиқ амалга оширишга, тергов ва суд амалиётида ноқонуний босимларнинг олдини олишга, далиллар мақбуллиги институтини кучайтиришга ҳамда инсон қадрини таъминлашга хизмат қилади.

Фойдаланилган адабиётлар ва манбалар

1. Ўзбекистон Республикаси Конституцияси.
2. Ўзбекистон Республикаси Жиноят-процессуал кодекси.
3. Фуқаровий ва сиёсий ҳуқуқлар тўғрисидаги халқаро пакт.
4. БМТ Инсон ҳуқуқлари қўмитасининг Фуқаровий ва сиёсий ҳуқуқлар тўғрисидаги халқаро пактнинг 14-моддаси бўйича умумий шарҳи.
5. Украина Жиноят-процессуал кодекси.
6. Арманистон Жиноят-процессуал кодекси.
7. Озарбайжон Республикаси Жиноят-процессуал кодекси.
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MAHALLA AS A UNIQUE INSTITUTION OF POLITICAL SOCIALIZATION IN CONTEMPORARY UZBEKISTAN

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Annotation: The article analyzes the role of the mahalla as a unique institution of political socialization in contemporary Uzbekistan. Based on an examination of the historical evolution of the mahalla, its traditional functions, and its transformation after independence, it shows how this institution is turning from a neighborhood community into a primary link between citizens and the state. The mechanisms of political socialization are revealed: the formation of civic responsibility, residents' participation in solving local issues, the assimilation of rights and duties, and collective responsibility. Special attention is paid to horizontal and vertical political communication, the institution of the "mahalla seven," the "Digital Mahalla" platform, as well as the socialization of youth and the transmission of social and civic norms between generations. It is substantiated that the mahalla's proximity to everyday life, the combination of social, cultural, and managerial functions, traditional norms, and overcoming passivity make it a special channel for the formation of civic attitudes. In the context of the "Uzbekistan-2030" strategy, the prospects for the development of the institution are considered: increased funding, participatory budgeting, digitalization of local public services, and expanded citizen participation in self-governance.

Keywords: political socialization, mahalla, citizens' self-governance, Uzbekistan, civic attitudes, political communication, "mahalla seven," "Digital Mahalla," youth socialization, participatory budgeting, "Uzbekistan-2030" Strategy.

МАХАЛЛЯ КАК УНИКАЛЬНЫЙ ИНСТИТУТ ПОЛИТИЧЕСКОЙ СОЦИАЛИЗАЦИИ В СОВРЕМЕННОМ УЗБЕКИСТАНЕ

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Аннотация: В статье анализируется роль махалли как уникального института политической социализации в современном Узбекистане. На основе рассмотрения исторической эволюции махалли, её традиционных функций и трансформации после обретения независимости показано, как этот институт превращается из соседского сообщества в первичное звено взаимодействия граждан и государства. Раскрываются механизмы политической социализации: формирование гражданской ответственности, участие жителей в решении местных вопросов, усвоение прав и обязанностей, коллективная ответственность. Отдельное внимание уделено горизонтальной и вертикальной политической коммуникации, институту «махаллинской семёрки», платформе «Цифровая махалля», а также социализации молодёжи и передаче социальных и гражданских норм между поколениями. Обосновывается, что близость махалли к повседневной жизни, сочетание социальных, культурных и управленческих функций, традиционные нормы и преодоление пассивности делают её особым каналом формирования гражданских установок. В контексте стратегии «Узбекистан-2030» рассматриваются перспективы развития института: увеличение финансирования, инициативный бюджет, цифровизация местных госуслуг и расширение участия граждан в самоуправлении.

Ключевые слова: политическая социализация, махалля, самоуправление граждан, Узбекистан, гражданские установки, политическая коммуникация, «махаллинская семёрка», «Цифровая махалля», социализация молодёжи, инициативный бюджет, Стратегия «Узбекистан-2030».

Политическая социализация представляет собой процесс усвоения политических знаний индивидом, ценностей и норм политической культуры. Этот процесс осуществляется при участии целого ряда социальных и политических институтов, среди которых обычно называют школу, СМИ и политические партии.

Однако в Узбекистане существует особый институт, который не вписывается в эту стандартную классификацию, – махалля. Актуальность изучения махалли как института политической социализации обоснована тем, что в Новом Узбекистане по инициативе Президента Шавката Мирзиёева проводятся последовательные и системные реформы, направленные на повышение статуса махалли в обществе, укрепление незыблемости ее роли и расширение полномочий. Махалля сформировалась как исключительный институт гражданского общества, что решает социальные проблемы населения и определяет духовно-правовую атмосферу территории. Почему же махалля важна для изучения политической социализации? Потому что она функционирует как канал коммуникации между обществом и государством, способствуя социализации личности, формированию толерантности. Махалля находится в непосредственной близости к повседневной жизни человека, что делает ее ключевым проводником передачи политических и гражданских установок и выделяет ее от классических институтов. Однако несмотря на значительное внимание к махалле как институту местного самоуправления и социальной поддержки, её роль именно в процессе политической социализации личности остается открытым вопросом. Цель данной статьи – определить роль махалли в формировании политических и гражданских установок населения, а также обозначить вектор развития этого института в контексте стратегии «Узбекистан-2030.»

Махалля представляет собой одну из древнейших форм локальной самоорганизации на территории Узбекистана. Если в крупных городах махаллинское самоуправление окончательно оформилось в VIII–XIII веках, то само слово «махалля» вошло в обиход именно в этот период. Уже в IX веке махалли упоминались в произведениях Наршахи. Традиционно махалля выполняла широкий спектр функций — от организации повседневной жизни населения и поддержания ремесел до регулирования соседских отношений и обеспечения взаимопомощи. Важнейшими механизмами выступали хашар (общественные работы) и коллективная поддержка нуждающихся. Тем самым махалля веками оставалась центром воспитания, сохранения обычаев и ценностей, а также пространством неформального социального контроля. После обретения

независимости Узбекистана начался качественно новый этап в развитии данного института. Если в Конституции 1992 года статус махалли был закреплён лишь в статье 105, то Закон Республики Узбекистан «Об органах самоуправления граждан» 1993 года стал первым документом, упорядочившим её деятельность. В новой редакции Конституции 2023 года статья 127 установила, что органы самоуправления граждан не входят в систему органов государственной власти и вправе самостоятельно решать вопросы местного значения, исходя из интересов жителей, исторических особенностей, национальных ценностей, местных обычаев и традиций. Как следствие, современная махалля перестала быть исключительно соседским сообществом: она превратилась в первичное звено решения проблем населения и канал диалога между гражданами и государством. По данным Ассоциации махаллей Узбекистана, сегодня в стране действует более девяти тысяч махаллей. Реформы последних лет существенно повысили ее роль. Таким образом, махалля постепенно эволюционирует из традиционного института в полноценный элемент гражданского общества, сочетающий самоуправление, социальную поддержку и политическую социализацию.

Политическая социализация в махалле происходит не столько через информирование, сколько через участие. Житель вместо того, чтобы просто узнать о правах и обязанностях включается в обсуждение и решение конкретных местных вопросов. Так формируются гражданская ответственность, понимание границ свободы и необходимости коллективных действий. Если рассматривать махаллю как институт политической социализации, то ее ключевое отличие от формальных структур состоит в том, что обучение гражданским нормам здесь неотделимо от повседневной практики. Формирование гражданской ответственности и участие в решении вопросов местного сообщества обеспечиваются через вовлечение жителей в обсуждение занятости, социальной поддержки, благоустройства,

общественной безопасности, распределения средств инициативного бюджета. Участие в собраниях, комиссиях, хашарах и проектах местного развития учит тому, что решение проблемы конкретной семьи или улицы зависит не только от государства, но и от соседей, от самого человека. Коллективная ответственность здесь не абстрактна: она проявляется в конкретных делах. Понимание прав и обязанностей также формируется практическим путем – через деятельность советов, комиссий и собраний граждан. Жители осваивают процедуры принятия решений, учатся отстаивать свои интересы и учитывать интересы других. Махалля выступает школой практической правовой социализации: здесь нормы права соединяются с повседневным опытом.

Махалля обеспечивает два типа политической коммуникации. Первый – горизонтальный: общение жителей между собой, обсуждение насущных проблем, выработка совместных решений. Второй - вертикальный: взаимодействие населения с представителями государства. Особую роль здесь играет институт «махаллинской семерки», сформированный в 2023 году. В ее состав входят председатель махалли, помощник хокима, лидер молодёжи, женская активистка, инспектор по профилактике, налоговый инспектор и социальный работник. Они работают как единая команда по принципу «единого окна». Это позволяет координировать социальную защиту, сокращение бедности, обеспечение занятости и экономическую активность на местном уровне. Цифровизация усиливает данный механизм: платформа «Цифровая махалля» даёт возможность отправлять обращения онлайн и отслеживать их исполнение. Тем самым государственные услуги становятся ближе к человеку, а махалля переводит государственную политику на язык повседневности, делая ее понятной и ощутимой.

Махалля активно участвует в воспитании молодого поколения. В каждой махалле введена должность лидера молодежи. Проводятся мероприятия, направленные на образование, спорт, чтение, освоение информационных технологий. Старшее поколение передает молодым бытовой опыт, социальные и гражданские нормы: уважение к старшим, взаимопомощь, ответственность за

соседей и за территорию. Для молодежи махалля становится пространством интеграции в жизнь местного сообщества. Здесь формируется чувство принадлежности, привязанности к родному месту, готовность участвовать в его развитии. Семья и махалля образуют двухуровневое воспитательное пространство, в котором правосознание и национальные ценности передаются естественным образом. Это снижает риск аномии и радикализации, предлагая молодым позитивные модели гражданского участия.

Главная особенность махалли – ее близость к повседневной жизни человека. Махалля знает жителей, их проблемы, конфликты, нужды. Она сочетает социальные, культурные и управленческие функции. Это не политическая партия и не государственный орган в чистом виде, а гибридный институт: самоуправление, встроенное в систему государственной поддержки. Взаимодействие граждан и махалли строится на доверии, соседстве и личном знакомстве. Традиционные нормы – хашар, взаимопомощь, уважение к старшим – продолжают работать как ресурс социализации. Однако есть и риск пассивности: часть населения привыкла ждать решения «сверху». Реформы последних лет – инициативный бюджет, цифровизация, отчётность – направлены на преодоление этой пассивности. Махалля учит не только подчиняться, но и участвовать, требовать, контролировать. Махалля – социальный институт и помощник в формировании гражданских установок. Ее уникальность состоит в локальном самоуправлении, постоянной коммуникации с населением и передаче ценностей от поколения к поколению. В Стратегии «Узбекистан-2030» махалля рассматривается как ключевое звено модернизации правового общества. Государство планирует увеличивать финансирование этой сферы, развивать инициативный бюджет, при котором граждане голосуют за направление средств махалли, цифровизировать местные государственные услуги, предоставлять более 100 услуг по принципу «одного

шага», создавать электронные сервисные пункты. Это означает, что политическая социализация через махаллю будет усиливаться: от традиционной соседской взаимопомощи – к современной гражданской активности, от локального самоуправления – к полноценному участию в правовом обществе.

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THE COGNITIVE AND SEMANTIC DIFFERENTIATION OF THE VERB "TOUCH" AND ITS SYNONYMS IN ENGLISH

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Abstract

This article investigates the semantic-pragmatic network and cognitive framing of *touch*, a prototypical contact verb in contemporary English, and its major synonyms (*contact, tap, pat, feel, stroke, press,* and *grasp*). Drawing on the principles of corpus linguistics, cognitive semantics, and systematic lexicology in Uzbek linguistics, the study analyzes the subtle semantic features, argument structures, case-governing patterns, and metaphorical extensions of these lexical units. The findings demonstrate that the verb *touch* functions semantically as a neutral and highly frequent hyperonym, whereas its synonyms specify such parameters as the intensity of the action, its duration, the intention of the subject, and the emotional impact of the contact. Furthermore, the article examines cognitive models of the transfer of physical contact into psychological, communicative, and social domains through a comparative analysis of English and Uzbek.

Keywords

contact verbs, semantic differentiation, cognitive framing, corpus linguistics, verb valency, metaphorical extension, lexical semantics, Uzbek linguistics.

Annotatsiya: Ushbu maqola zamonaviy ingliz tilidagi prototipik kontakt fe'li bo'lmish *touch* hamda uning asosiy sinonimlari (*contact, tap, pat, feel, stroke, press, grasp*) o'rtasidagi semantik-pragmatik tarmoq va kognitiv freymingni tadqiq etadi. Korpus tilshunosligi, kognitiv semantika va o'zbek tilshunosligidagi tizimli leksikologiya tamoyillariga tayangan holda, ushbu leksik birliklarning nozik semantik belgilari, argumentlar strukturasi, kelishiklar boshqaruvi va metaforik ko'chishlari tahlil

qilingan. Tadqiqot natijalari shuni ko‘rsatadiki, *touch* fe’li semantik jihatdan neytral va yuqori chastotali giperonim vazifasini bajarsa, uning sinonimlari harakat kuchi, davomiyligi, subyektning niyati hamda emotsional ta’sir kabi parametrlarni aniqlashtiradi. Shuningdek, maqolada jismoniy kontaktning psixologik, muloqot va ijtimoiy sohalarga kognitiv ko‘chish modellari ingliz va o‘zbek tillari qiyosida yoritilgan.

Kalit so‘zlar: kontakt fe’llari, semantik diferensiasiya, kognitiv freyming, korpus tilshunosligi, fe’l valentligi, metaforik ko‘chish, leksik semantika, o‘zbek tilshunosligi.

KIRISH

Kognitiv tilshunoslik va semantikada jismoniy kontakt fe’llari insonning sensomotor (sezgi-harakat) tajribasini abstraktsion tushunchalar bilan bog‘lovchi eng muhim kategorial qatlamlardan biridir [1]. Ingliz tili leksikasida *touch* fe’li taktil idrok sohasining kognitiv va prototipik markazini tashkil etadi [2]. Biroq, ushbu til tizimida harakatning jismoniy, emotsional hamda niyat (intensional) parametrlariga ko‘ra diferensiallashgan boy sinonimik tarmoq (*contact, tap, pat, feel, stroke, press, grasp*) mavjud. An’anaviy leksikografik manbalarda ushbu birliklar ko‘pincha bir-birining o‘rnini bosuvchi yaqin sinonimlar sifatida berilsa-da, korpusga asoslangan tadqiqotlar har bir fe’l o‘ziga xos kognitiv freymni shakllantirishini ko‘rsatmoqda [3; 4].

O‘zbek tilshunosligida fe’llarning semantik tabaqalanishi, valentlik va birikuvchanlik imkoniyatlari A. Hojiyev, Sh. Rahmatullayev, H. Ne’matov, A. Nurmonov va R. Rasulov tadqiqotlarida atroflicha o‘rganilgan [5; 6; 7; 8]. Akademik A. Hojiyev ta’kidlaganidek, fe’l sinonimiyasida denotativ ma’no bir xil bo‘lsa-da, harakatning bajarilish usuli, jiddiyligi hamda ob’ektga beriladigan dinamik impuls leksik diferensiasiyani yuzaga keltirishi lozim [5]. Professor A. Nurmonov va H. Ne’matovlar tomonidan ilgari surilgan lisoniy tizim va kategorial semantika nazariyasiga ko‘ra, so‘z ma'nosi uning ma'lum bir semantik maydondagi boshqa birliklar

bilan oppositsion (qarama-qarshi) munosabati orqali belgilanadi [7]. R. Rasulov esa fe'llarning ma'no tuzilishida harakatning bajarilish usuli (sposob deystviya) va ob'ektli valentlik hal qiluvchi rol o'ynashini ko'rsatgan [8].

Ushbu tadqiqotning maqsadi ingliz tilidagi kontakt fe'llarining semantik maydonini dekonstruksiya qilish, ularning kognitiv parametrlarini aniqlash va o‘zbek tilshunosligi nazariyalari asosida qiyosiy-tilshunoslik jihatidan tahlil qilishdan iborat.

METODOLOGIYA

Tadqiqotda sifat va miqdoriy metodlar uyg‘unligidan foydalanildi. Empragmatik ma’lumotlar Zamonaviy Amerika Ingliz Tili Korpusi (COCA) hamda Britaniya Milliy Korpusi (BNC) materiallaridan har bir fe’l uchun tasodifiy saralab olingan 1000 ta konkordans qatori asosida yig‘ildi [9]. Tahlil jarayonida Ch. Fillmorning Freym Semantikasi [2] tamoyillari asosida asosiy freym elementlari *Toucher/Aget*, *Target/Patient*, *Instrument* ajratildi. Shuningdek, E. Nida hamda M. Mirtojiyev tadqiqotlarida ko‘rsatilgan komponentli tahlil usuli [10; 11] yordamida fe’llarning kuch,davomiylik,niyat va emotsional ta’sir kabi diferensiya semalari aniqlanadi.

TADQIQOT NATIJALARI VA TAHLIL

Leksik-semantik va komponentli tahlil shuni ko‘rsatdiki, *touch* fe’li taktil sohaning eng semantik jihatdan toraytirilmagan giperonimi bo‘lib xizmat qiladi. Unining sinonimlari esa harakat kinetikasiga qat’iy semantik tadqiqlarni kiritadi. M. Mirtojiyev ta'kidlaganidek, semantik maydondagi har bir giponimik birlik neytral giperonimga nisbatan qo'shimcha diferensial sema kasb etadi [11].

Fe’llarning komponentli tahlili quyidagi parametrlarni namoyon etadi:

• *Touch* fe’li kuch, davomiylik va niyat bo‘yicha neytral joylashuvga ega bo‘lib, uning asosiy harakat vositasi qo‘l, barmoq yoki har qanday obyekt bo‘lishi mumkin. U sohaning prototipik markazida turadi.

• *Contact* fe'li rasmiy va abstrakt xarakterga ega bo'lib, (niyat) semasi hamda kommunikativ yo'nalganlik bilan ajralib turadi.

• *Tap* fe'li quyi va o'rta kuch darajasiga, o'ta qisqa (punktual) davomiylikka hamda barmoq uchi yoki engil obyekt yordamida diqqatni tortish maqsadi (niyat)ga ega.

• *Pat* fe'li ochiq kaft orqali bajariladigan, qisqa va ritmik takrorlanuvchi harakat bo'lib, mehr, tasalli yoki rag'batlantirish kabi emotsional semani tashiydi.

• *Stroke* fe'li uzoq va continuous (davomli) chiziqli harakatni talab etib, muloyimlik hamda tasalli berish emotsiyasiga yo'naltirilgan.

• *Press* fe'li o'rta va yuqori bosim kuchi, uzluksiz davomiylik va obyekt ustidan nazorat o'rnatish semasini ifodalaydi.

• *Feel* fe'li harakatning o'ziga emas, balki taktil kontakt natijasida hosil bo'ladigan sensatsiya va subyektiv idrokka (persepsiyaga) qaratilgan.

• *Grasp* fe'li esa butun kaft yoki barmoqlar bilan obyektni yuqori kuch bilan tutish hamda uni to'liq jismoniy nazorat qilish semasini beradi.

Sintagmatik birikuvchanlik nuqtai nazaridan, korpus tahlili *tap* fe'lining qattiq yoki inanimat (jonsiz) ob'ektlar (*tap the window, tap the microphone*) bilan birikishini, *pat* fe'lining esa jonli va emotsional ob'ektlarni (*pat a dog, pat on the back*) afzal ko'rishini ko'rsatdi. *Stroke* fe'li teri yoki mo'yna ustidagi tekis harakatni talab etsa, *press* fe'li bosim yo'naltirilgan tugma va devor kabi strukturaviy ob'ektlar bilan birikadi [9]. Bu holat R. Rasulov tomonidan asoslangan fe'llarning obyektli birikuvchanlik chegaralari va valentlik imkoniyatlariga to'liq mos keladi [8].

MUHOKAMA VA METAFORIK KO'CHISHLAR

J. Lakoff va M. Jonsonning Kognitiv Metafora Nazariyasiga [3] muvofiq, taktil idrok maydoni abstrakt target (yo'nalish) doiralariga tizimli ravishda ko'chadi:

1. Jismoniy kontakt → emotsional ta'sir: Physical contact hissiyotlar sohasi bilan kognitiv bog'lanadi. Masalan, *touch* fe'li emotsional rezonansni anglatsa (*His*

story deeply touched the audience), *stroke* fe'li me'yoridan ortiq maqtash va psixologik manipulyatsiyani bildiradi (*stroke her ego*).

2. Jismoniy kontakt → aqliy idrok/tushunish: Physical holding harakati intellektual tushunishga ko‘chadi. *Grasp* fe'li fizik tutishdan tushunchani anglashga o‘tadi (*grasp the concept*), *touch upon* birikmasi esa nutqda muayyan mavzuga qisqacha to‘xtalib o‘tishni bildiradi.

3. Jismoniy kontakt → muloqot va ijtimoiy tuzum: Fizik yaqinlik kommunikativ aloqani shakllantiradi (*Please contact our support team*).

Qiyosiy va tarjimashunoslik nuqtai nazaridan, ingliz tilidagi barcha kontakt xatti-harakatlarini jamlagan *touch* umbrella-verb (soyabon fe'li) va uning diferensiallashgan giponimlari o‘zbek tiliga tarjima qilinganda kontekstual hamda sintaktik differensiasiyani talab etadi [5; 12]. Professor J. Eltazarov ta'kidlaganidek, o'zbek va turkiy tillarda fe'llarning ma'noviy tabaqalanishi va sintaktik roli ko'pincha kelishik shakllarining semantik yuklamasi hamda ko'makchi fe'lli birikmalar orqali yuzaga chiqadi [12].O‘zbek tilida *touch* fe'lining umumiy yagona ekvivalenti yo‘q; u ma'no va sintaktik talabga ko‘ra *tegmoq* (tasodifiy/yengil va jo‘nalish kelishigidagi harakat: *devorga tegmoq*) hamda *ushlamoq* (faol nazorat va tushum/chiqish kelishigi: *qo‘lini ushlamoq*) o‘rtasida bo‘linadi [6; 12]. Shuningdek, *pat* (kiftiga urib qo‘ymoq), *stroke* (silamoq/paypaslamoq) hamda *tap* (turtib qo‘ymoq/taqillatmoq) kabi fe'llar harakat kinetikasi hamda fe'lli birikmalar orqali o‘zbek tilida aniq beriladi [5].

XULOSA

O‘tkazilgan tahlillar ingliz tilidagi kontakt fe'llari tizimida *touch* fe'li o‘zining semantik neytralligi sababli prototipik giperonimik maqomga ega ekanligini isbotladi. Ushbu maydonning sinonimik a'zolari kuch, davomiylik, niyat va emotsional ta'sir parametrlariga ko‘ra qat'iy tartiblangan. O‘zbek va ingliz tillari materiali qiyoslanganda, ingliz tili yagona o'tishli fe'l va kontekstga tayansa, o'zbek tili kelishiklar sintaksisi va

leksik-fe'lli birikmalardan foydalanishi aniqlandi. Jismoniy taktil tajriba inson kognitsiyasida abstrakt hissiyotlar, kommunikativ aloqalar va intellektual tushunchalarni ifodalovchi poydevoriy manba hisoblanadi.

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The Conflict Between Party Autonomy and Consumer Protection: Applying the Public Policy Exception to Arbitral Awards in B2C E-Commerce

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Abstract

The enforcement of arbitral awards in business-to-consumer e-commerce creates a difficult conflict between two legal principles. Arbitration depends on party autonomy and the finality of awards, while consumer law proceeds from the assumption that the consumer is normally the weaker contractual party and therefore requires mandatory protection. The conflict becomes particularly visible when courts review arbitral awards against public policy. Article V(2)(b) of the 1958 New York Convention permits refusal of recognition or enforcement where enforcement would be contrary to the public policy of the enforcing State. Although the Convention intended refusal to remain exceptional, consumer protection rules may enter the enforcement process through this exception or through comparable domestic public-policy review. European case law concerning unfair arbitration clauses illustrates how mandatory consumer rules can require judicial intervention even after arbitration has been completed. This thesis examines the relationship between party autonomy, consumer protection and public policy through the New York Convention, Directive 93/13/EEC and the judgments in *Eco Swiss*, *Mostaza Claro* and *Asturcom*. I argue that public policy remains necessary in B2C arbitration, but its application should depend on a serious violation of mandatory consumer protection and a material effect on the consumer's ability to participate in or defend the claim.

Keywords

international arbitration, consumer arbitration, B2C e-commerce, public policy, New York Convention, party autonomy, consumer protection.

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THESIS

Introduction

International arbitration was developed mainly for disputes between commercial actors. Its basic structure assumes that parties are capable of choosing arbitration, selecting applicable rules and accepting that the resulting award will normally be final. The New York Convention of 1958 reflects this approach. Its principal objective is to facilitate recognition and enforcement of foreign and non-domestic arbitral awards and to prevent national courts from conducting a new examination of the merits.

B2C e-commerce does not fit comfortably into this model. A consumer purchasing goods through an online platform may technically accept an arbitration clause, but acceptance often occurs by clicking a button connected with standard terms that were drafted exclusively by the business. There is usually no negotiation. The value of the transaction can be small, while the arbitration clause may refer disputes to an institution or legal system unfamiliar to the consumer. In such conditions, formal consent and meaningful consent may be different things.

Consumer protection law responds to this inequality through mandatory rules. Directive 93/13/EEC on unfair terms in consumer contracts is a clear European example. Its logic is that contractual freedom cannot justify every term imposed by a professional

seller on a consumer. Arbitration law, however, generally begins from another direction: agreements should be respected and awards should not easily be reopened.

The point where these approaches meet is public policy.

Article V(2)(b) of the New York Convention permits a competent authority to refuse recognition and enforcement when recognition or enforcement would be contrary to the public policy of that country. Unlike the grounds under Article V(1), Article V(2) can also raise issues that the enforcing court considers on its own initiative. The provision therefore operates as a final protective mechanism between international arbitration and the fundamental legal values of the enforcing State.

There is no sufficiently reliable global empirical basis for saying that Article V(2)(b) is invariably the most frequently invoked ground specifically in B2C enforcement proceedings. The more defensible proposition is that public policy becomes especially important where enforcement conflicts with mandatory consumer law. In such cases the court faces a difficult question: how far may it protect the consumer without transforming enforcement proceedings into a second examination of the dispute?

The research question of the present thesis is therefore whether public policy in consumer arbitration functions as a legitimate safety valve or risks becoming a form of backdoor appeal. The analysis first considers the doctrinal relationship between party autonomy and mandatory consumer law. It then examines European case law concerning public policy and consumer arbitration. Finally, criteria are proposed for limiting judicial intervention while preserving meaningful consumer protection.

1. Party Autonomy and the Limits Created by Consumer Law

Party autonomy is one of the central foundations of international commercial arbitration. Gary Born describes international arbitration as a system strongly dependent on consent: the jurisdiction of the tribunal exists because the parties have agreed to

submit their dispute to arbitration. Redfern and Hunter similarly connect arbitration with the freedom of parties to choose a private method of dispute resolution.

Such reasoning is convincing in negotiated commercial relationships. It becomes less obvious in mass online contracting.

A consumer purchasing a product through a website normally does not negotiate dispute resolution provisions. The arbitration agreement may form one paragraph among thousands of words contained in general terms and conditions. A consumer can theoretically refuse the contract, but in practical terms this is not equivalent to bargaining over the arbitration clause. The difference between legal consent and economic choice is therefore important.

This does not mean that consumer arbitration should automatically be considered invalid. Such a conclusion would be too broad. Arbitration and ODR can provide consumers with faster and less expensive dispute resolution than traditional litigation. UNCITRAL's work on online dispute resolution itself developed from recognition that conventional court proceedings are often disproportionate for cross-border low-value electronic transactions.

The difficulty lies elsewhere. Consumer arbitration becomes problematic when party autonomy is used to avoid legal protections that the applicable legal order treats as mandatory.

The European approach is particularly instructive. Directive 93/13 requires Member States to ensure that unfair terms used in consumer contracts do not bind consumers. The Directive proceeds from an inequality of bargaining power and information between seller and consumer. An arbitration clause contained in a standard contract can therefore become subject to unfairness review.

A useful doctrinal starting point is *Eco Swiss China Time Ltd v Benetton International NV*, Case C-126/97. The case was not a consumer dispute. It concerned

competition law and an arbitral award. Yet its significance for the present issue is substantial. The Court of Justice accepted that rules sufficiently fundamental to the European legal order could be relevant when a national court reviewed an arbitral award under its public-policy rules.

Eco Swiss therefore illustrates a broader principle. Arbitration finality does not place an award outside the fundamental mandatory norms of the legal order in which judicial recognition or enforcement is requested.

The later consumer cases developed this reasoning in a more sensitive contractual context.

2. From *Eco Swiss* to *Mostaza Claro* and *Asturcom*

In *Elisa María Mostaza Claro v Centro Móvil Milenium SL*, Case C-168/05, a consumer contract contained an arbitration clause. The consumer did not challenge the unfairness of that clause during arbitration but raised the issue when seeking annulment of the award.

A strict understanding of arbitration finality could have produced a simple answer: the objection should have been raised before the arbitrator and was therefore lost.

The Court of Justice took a different position. It held that the national court considering annulment had to examine whether the arbitration agreement was void because it contained an unfair term, even though the consumer had failed to raise the objection during the arbitration.

The reasoning is important because it places substantive consumer protection above a purely procedural understanding of waiver. Directive 93/13 would lose much of its practical effect if an inexperienced consumer could permanently lose mandatory protection simply by failing to understand the legal importance of an arbitration proceeding.

In my view, the result in *Mostaza Claro* is justified. A consumer who does not understand that an arbitration clause may be legally unfair cannot realistically be expected to formulate the relevant objection before an arbitrator. Treating silence as informed waiver in such circumstances would turn formal procedure into a mechanism for avoiding consumer law.

At the same time, the judgment creates a problem for arbitration theory. Once courts may reconsider the validity of the arbitration agreement after an award has been rendered, finality becomes conditional on compliance with external mandatory norms.

That tension became clearer in *Asturcom Telecomunicaciones SL v Cristina Rodríguez Nogueira*, Case C-40/08. An arbitration award against a consumer had become final because the consumer had not participated in the arbitration and had not brought an action to set aside the award within the relevant period. Enforcement was subsequently requested.

The Court of Justice had to reconcile the principle of res judicata with the mandatory character of European consumer protection. It recognized the importance of procedural finality but also treated the protection created by Directive 93/13 as having a status capable of requiring examination by a national enforcement court where domestic procedural rules permitted comparable public-policy review.

The distinction between *Mostaza Claro* and *Asturcom* matters. Consumer protection does not simply erase all procedural rules. Rather, European law requires national procedural systems to give effective protection to mandatory consumer norms within the mechanisms available under domestic law.

Taken together with *Eco Swiss*, the cases demonstrate why public policy is so attractive in consumer arbitration. It creates a legal bridge between the autonomy of arbitration and norms that the State or regional legal order refuses to leave entirely to private agreement.

Yet none of these cases should be inaccurately described as a direct application of Article V(2)(b) of the New York Convention to a foreign B2C award. Their value is doctrinal and comparative. They demonstrate how public-policy reasoning and mandatory EU rules influence judicial control of arbitral awards.

This distinction is especially important in academic writing because otherwise national annulment proceedings, EU consumer law and Convention enforcement risk being mixed into one legal category.

3. Public Policy: Safety Valve or Backdoor Appeal?

Public policy has traditionally been understood narrowly in international arbitration. If every mandatory national rule were automatically part of public policy, the New York Convention's pro-enforcement structure would lose much of its value. An unsuccessful party could simply reformulate an ordinary legal error as a public-policy objection.

The concept should therefore be distinguished from ordinary mandatory law.

A tribunal may incorrectly interpret a contract or even make an error in applying substantive law without necessarily producing an award contrary to public policy. Enforcement review is not an appeal. Albert Jan van den Berg's classic analysis of the New York Convention strongly supports a restrictive understanding of the Convention's refusal mechanisms, while contemporary arbitration scholarship generally accepts that Article V should not become a vehicle for reconsidering the merits.

Consumer disputes complicate this traditional model because some consumer rules are specifically designed to prevent contractual waiver. If an arbitration award gives effect to a contractual arrangement that national law treats as fundamentally unacceptable, refusing all judicial review may undermine the very reason why the consumer rule is mandatory.

Two opposite risks therefore exist.

An excessively narrow approach can make consumer protection ineffective. A company could insert a problematic arbitration clause into standard online terms, obtain an award against a consumer who never meaningfully participated, and then rely on arbitral finality.

An excessively broad approach creates the opposite problem. Courts could re-examine consumer awards whenever they disagree with the tribunal's interpretation of consumer legislation. Public policy would then become a disguised appeal.

I find the second possibility particularly dangerous for international B2C arbitration because unpredictability may be more damaging than strictness. Businesses and consumers can adapt to a clear restrictive rule or a clear protective rule. It is much more difficult to design an arbitration system when an award is formally final but its enforceability depends on an undefined judicial evaluation of consumer fairness in every country.

The answer should therefore lie in the seriousness of the violation rather than merely in the existence of a consumer rule.

A court should distinguish between an incorrect application of consumer law and an outcome that effectively deprives the consumer of a mandatory protection regarded as fundamental by the enforcing legal order.

The reasoning of *Mitsubishi Motors Corp. v Soler Chrysler-Plymouth, Inc.*, 473 U.S. 614 (1985), although arising in a commercial context, is useful by analogy. The U.S. Supreme Court accepted arbitration of statutory claims while emphasizing that arbitration should not operate as a prospective waiver of substantive statutory rights. Similarly, *Vimar Seguros y Reaseguros, S.A. v M/V Sky Reefer*, 515 U.S. 528 (1995), shows judicial willingness to enforce arbitration agreements while leaving open later scrutiny if the substantive statutory protections are actually diminished.

The principle can be transferred cautiously to consumer arbitration: arbitration itself is not the problem. The problem arises where arbitration becomes a mechanism by which mandatory rights disappear in practice.

Two criteria could make public-policy review more predictable.

The first should be a **fundamentality threshold**. Enforcement should be refused only when the violated consumer rule protects a principle regarded as fundamental in the enforcing legal order, rather than whenever a mandatory provision has arguably been misapplied.

The second should be a **material prejudice threshold**. The violation should have had a real effect on the consumer's consent, participation, defence or substantive legal position. A purely technical irregularity without meaningful prejudice should not justify refusal.

These requirements would preserve public policy as a safety valve without making it a general appellate mechanism.

Conclusion

The conflict between arbitration and consumer protection cannot be resolved simply by choosing one principle over another. Party autonomy remains a legitimate basis of arbitration, including arbitration conducted electronically. Consumer status alone should not invalidate an arbitration agreement or make an award unenforceable. Such a rule would ignore the potential advantages of fast and inexpensive dispute resolution for cross-border e-commerce.

At the same time, the traditional model of international commercial arbitration assumes a degree of bargaining equality that is often absent in B2C transactions. Mandatory consumer law exists precisely because formal contractual consent does not always provide sufficient protection.

Public policy therefore has a necessary function.

The experience of *Eco Swiss*, *Mostaza Claro* and *Asturcom* shows that European law is unwilling to treat arbitral finality as completely independent from fundamental mandatory rules. These cases do not constitute direct applications of Article V(2)(b) to foreign B2C awards, but they show the mechanism through which mandatory norms may influence judicial control of arbitration.

The danger begins when public policy loses its exceptional character. If every disagreement about consumer law permits reconsideration of an award, arbitration ceases to provide meaningful finality.

For this reason, I suggest a two-stage test. A court should ask whether the consumer rule allegedly violated represents a fundamental mandatory protection in the enforcing legal order. It should then determine whether the violation materially affected the consumer's consent, participation or substantive rights. Only where both conditions are satisfied should public-policy refusal normally be available.

Such an approach does not eliminate judicial discretion. Public policy cannot be reduced to a mathematical formula. It can, however, make the boundary between consumer protection and appellate review more visible. In the conditions of the digital economy, this predictability is necessary for both sides of the transaction.

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INTEGRATION OF LINGUISTIC FEATURES AND COMPUTATIONAL METHODS IN THE SEMANTIC CLASSIFICATION OF LITERARY METAPHORS

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Abstract

This abstract explores the potential of jointly applying linguistic features and computational methods to the semantic classification of literary metaphors. The objective of the study is to develop a classification framework that helps identify which concept is being depicted in a metaphorical expression, which attribute is mapped from another conceptual domain, and what meaning this transfer creates within the text. To this end, the distinction between literal and contextual meanings of words, semantic relations in word collocations, the source and target domains of the metaphor, and the broader literary context are adopted as key linguistic features. The abstract proposes a procedure for semantically defining metaphors by first extracting metaphorical units from the text and then characterizing the underlying relationship behind the semantic shift. For example, when an individual's emotional state is expressed through words related to temperature, motion, or weight, the depicted state and the transferred attribute are recorded separately. Computational methods can be employed for tokenizing and segmenting text into words and sentences, determining lemmas and grammatical dependencies, comparing similar contexts, and filtering candidate units for classification. In the final semantic interpretation, considering the literary context and the author's individual style remains essential. In the proposed approach, linguistic features define the classification criteria, while computational techniques facilitate the

consistent application of these criteria across large volumes of text. The classification of a metaphor's semantic type must be justified by its contextual usage, with ambiguous cases reserved for expert review. Being methodological in nature, this work does not report a finalized software application or novel experimental accuracy benchmarks. Determining the effectiveness of the proposed approach will require developing an annotated corpus of literary texts and comparing model outputs against expert human annotations in future research.

Keywords

literary metaphor, semantic classification, linguistic features, computational methods, contextual meaning, semantic shift, annotated corpus, computational linguistic analysis.

BADIIY METAFORALARNI SEMANTIK TASNIFLASHDA LINGVISTIK BELGILAR VA KOMPYUTER USULLARINING INTEGRATSIYASI

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Annotatsiya

Ushbu tezisda badiiy metaforalarni semantik tasniflashda lingvistik belgilar va kompyuter usullarini birgalikda qo'llash imkoniyatlari ko'rib chiqiladi. Tadqiqotning maqsadi metaforik ifodada qaysi tushuncha tasvirlanayotgani, unga boshqa tushuncha sohasidan qanday belgi ko'chirilgani va bu ko'chish matnda qanday ma'no hosil qilayotganini aniqlashga xizmat qiladigan tasniflash yondashuvini ishlab chiqishdan iborat. Shu maqsadda so'zning asosiy va kontekstual ma'nosi o'rtasidagi farq, so'zlar birikishidagi semantik munosabat, metaforaning manba va maqsad sohalari hamda kengroq badiiy kontekst asosiy lingvistik belgilar sifatida olinadi.

Tezisda metaforalarni semantik jihatdan belgilash uchun avval matndan metaforik birliklarni ajratish, so‘ng ularning ma’no ko‘chishiga asos bo‘lgan munosabatni tavsiflash tartibi taklif etiladi. Masalan, insonning ruhiy holati harorat, harakat yoki og‘irlikka oid so‘zlar orqali ifodalanganda, tasvirlanayotgan holat bilan unga ko‘chirilgan belgi alohida qayd etiladi. Kompyuter usullari matnni so‘z va gaplarga ajratish, so‘zlarning boshlang‘ich shakli hamda grammatik bog‘lanishini aniqlash, o‘xshash kontekstlarni qiyoslash va tasniflashga nomzod birliklarni saralashda qo‘llanishi mumkin. Yakuniy semantik talqinda esa badiiy kontekst va muallif uslubini hisobga olish zarur.

Taklif etilgan yondashuvda lingvistik belgilar tasnif mezonlarini belgilaydi, kompyuter usullari esa ushbu mezonlarni ko‘p sonli matnlarda izchil qo‘llashga yordam beradi. Metaforaning ma’no turi haqida chiqarilgan qaror uning kontekstdagi qo‘llanishi bilan asoslanishi, bahsli holatlar esa mutaxassis tekshiruviga ajratilishi nazarda tutiladi. Tezis metodologik xarakterga ega bo‘lib, unda sinovdan o‘tgan dastur yoki tasniflash aniqligi bo‘yicha yangi tajriba natijalari keltirilmaydi. Taklif etilgan yondashuvning samaradorligini aniqlash uchun kelgusida badiiy matnlardan annotatsiyalangan korpus tuzish va model natijalarini mutaxassislar tasnifi bilan qiyoslash talab etiladi.

Kalit so‘zlar: badiiy metafora, semantik tasnif, lingvistik belgilar, kompyuter usullari, kontekstual ma’no, ma’no ko‘chishi, annotatsiyalangan korpus, lingvokompyuter tahlil.

KIRISH

Metafora badiiy matnda bir predmet, hodisa yoki holatni boshqa bir tushuncha orqali tasvirlashga xizmat qiladi. Uning yordamida yozuvchi mavhum kechinmani aniq sezgi bilan bog‘lashi, odatiy hodisaga yangi ma’no berishi yoki qahramonning ichki dunyosini obrazli ifodalashi mumkin. Masalan, “ko‘ngli muzladi” birikmasida sovuqlikning jismoniy belgisi insonning ruhiy holatini tasvirlashga ko‘chiriladi. Bu

ifodani tushunish uchun muzlamoq fe’lining lug‘aviy ma’nosini bilishning o‘zi yetarli emas; u qaysi tushunchaga nisbatan qo‘llangani ham aniqlanishi kerak.

Badiiy metaforalarni o‘rganishda ularni matndan topish va ma’nosiga ko‘ra tasniflash ikki bog‘liq vazifadir. Birinchi vazifa so‘z yoki birikmaning ko‘chma ma’noda ishlatilganini aniqlashga qaratiladi. Ikkinchi vazifa esa metafora qanday semantik munosabat asosida yuzaga kelganini tushuntiradi. Masalan, “ko‘ngli muzladi” va “xotiralar uyg‘ondi” ifodalarining ikkalasi ham metaforik bo‘lishi mumkin, lekin birinchisida haroratga, ikkinchisida tirik mavjudot harakatiga xos belgi ko‘chirilgan. Ularni bitta umumiy belgi bilan cheklab qo‘yish metaforalarning ma’no tuzilishidagi farqni ko‘rsatmaydi.

Semantik tasnif uchun metaforaning maqsad sohasi, ya’ni tasvirlanayotgan tushuncha va manba sohasi, ya’ni unga belgi berayotgan tushuncha ajratiladi. Yuqoridagi birinchi misolda ruhiy holat maqsad sohasi, sovuqlik esa manba sohasi bo‘lib xizmat qiladi. Biroq badiiy matnda bu munosabat har doim ham birikmaning o‘zidan ravshan bo‘lmaydi. Ayrim obrazlarning ma’nosi avvalgi gaplar, qahramonning holati yoki asar davomida takrorlanadigan tasvirlar orqali ochiladi. Shu sababli metaforaning semantik turini aniqlashda kengroq kontekstni ham hisobga olish zarur.

Kompyuter usullari ko‘p sonli matnlarni izchil ko‘rib chiqish, metaforaga nomzod birliklarni saralash va ularning grammatik hamda kontekstual belgilarini taqqoslash imkonini beradi. Biroq dasturning g‘ayrioddiy so‘z birikmasini topishi uning metaforik ma’nosini to‘liq aniqlaganini bildirmaydi. Noodatiy birikma kinoya, turg‘un ibora, ko‘p ma’noli so‘zning odatiy qo‘llanishi yoki matndan ajratib olingan ifoda bo‘lishi ham mumkin. Shuning uchun kompyuter tahlilida lingvistik mezonlar aniq belgilanishi va natijalar matn konteksti asosida tekshirilishi kerak.

Metaforani aniqlashga oid lingvistik usullarda birlikning kontekstdagi ma’nosi uning asosiy ma’nosi bilan qiyoslanadi. Kompyuter modellarida ham ushbu farq va

so‘zlarning kontekst bilan semantik munosabatidan foydalaniladi. Semantik tasniflashda bu yondashuvni davom ettirib, ma’no ko‘chishi qaysi sohalar o‘rtasida sodir bo‘lgani va qaysi belgi ko‘chirilgani haqidagi ma’lumotlarni qayd etish mumkin.

Mazkur tezisning maqsadi badiiy metaforalarni semantik tasniflash uchun lingvistik belgilar va kompyuter usullarini birlashtirgan yondashuvni asoslashdan iborat. Buning uchun metaforik birlikni ajratish, uning manba va maqsad sohalarini belgilash, ko‘chirilgan semantik belgini tavsiflash hamda olingan tasnifni kontekst asosida tekshirish bosqichlari ko‘rib chiqiladi.

Tadqiqotning ahamiyati metaforalarni faqat matndan topish bilan cheklanmay, ularning qanday ma’no hosil qilayotganini izchil tavsiflashga qaratilganidadir. Bunday tasnif badiiy matnning obrazlar tizimini qiyosiy o‘rganish va keyinchalik annotatsiyalangan korpus yaratish uchun asos bo‘lishi mumkin. Tezisda yangi empirik natijalar yoki tayyor dastur samaradorligi haqida xulosa berilmaydi; taklif etilayotgan yondashuv keyingi korpus tadqiqotida sinab ko‘rilishi lozim.

ASOSIY QISM

Metaforaning semantik tuzilishini belgilash

Badiiy metaforani semantik tasniflashdan oldin uning tarkibida qanday ma’no munosabati yuzaga kelganini aniqlash lozim. Buning uchun uchta savolga javob beriladi: nima tasvirlanmoqda, u nima orqali tasvirlanmoqda va qaysi belgi ko‘chirilmoqda? Birinchi savol metaforaning maqsad sohasini, ikkinchisi manba sohasini, uchinchisi esa ular orasidagi semantik aloqani ko‘rsatadi.

Masalan, “ko‘ngli muzladi” ifodasida insonning ruhiy holati tasvirlanadi. Muzlamoq fe’li dastlab jismning sovuq ta’sirida holati o‘zgarishini bildiradi. Birikmada esa sovuqlik bilan bog‘liq hissiy tasavvur ruhiy holatga ko‘chiriladi. Demak, bu yerda ruhiy holat maqsad sohasi, jismoniy sovuqlik manba sohasi vazifasini bajaradi. Ushbu

misol tasniflash tartibini ko‘rsatish uchun keltirilgan; muayyan badiiy asardan olingan korpus natijasi emas.

Semantik tasnifda manba sohasining nomini qayd etishning o‘zi yetarli bo‘lmaydi. Qaysi belgi ko‘chirilgani ham izohlanishi kerak. Masalan, jismoniy harorat ruhiy holatni, og‘irlik tashvish yoki mas’uliyatni, harakat esa vaqt yoki xotiraning kechishini ifodalashi mumkin. Bir xil manba sohasi ham turli kontekstlarda boshqa vazifani bajaradi. Shu sababli tasnif birlikning matndagi ma’nosiga tayangan holda amalga oshiriladi.

Semantik tasnif mezonlari

Metaforalarni tasniflashda quyidagi lingvistik belgilarni birgalikda qo‘llash taklif etiladi:

Lingvistik belgi	Tekshiriladigan savol	Namunaviy ifoda
Kontekstual ma’no	Birlik ayni matnda nimani bildiradi?	“xotiralar uyg‘ondi”
Asosiy ma’no	Birlikning odatiy lug‘aviy ma’nosi qanday?	Uyg‘onmoq — uyqu holatidan chiqmoq
Maqsad sohasi	Nima tasvirlanmoqda?	Xotiraning qayta jonlanishi
Manba sohasi	Tasvir uchun qaysi soha belgisi olingan?	Tirik mavjudotning uyg‘onishi
Ko‘chirilgan belgi	Ikki sohani nima bog‘laydi?	Faol holatga o‘tish
Keng kontekst	Ushbu talqin matn mazmuniga mosmi?	Oldingi va keyingi gaplar bilan tekshiriladi

Jadvaldagi ifodalar tasnif mezonlarini tushuntiruvchi namunalar hisoblanadi. Haqiqiy badiiy matnda birikma ma’nosi o‘zgarishi yoki umuman metaforik bo‘lmasligi mumkin. Shuning uchun kontekstdan ajratilgan misolga berilgan tasnifni barcha qo‘llanishlarga tatbiq etib bo‘lmaydi.

Kontekstual va asosiy ma’noni qiyoslash metaforik qo‘llanishni aniqlash bosqichiga xizmat qiladi. Manba va maqsad sohalarini belgilash esa keyingi, ya’ni semantik tasniflash bosqichidir. Bu ikki bosqichning vazifasi farqlanadi: dastlab birlikning ko‘chma ma’noda ishlatilgani asoslanadi, so‘ng ma’no ko‘chishining turi tavsiflanadi.

Metaforalarni semantik guruhlarga ajratish

Annotatsiya uchun dastlabki semantik guruhlar manba sohasiga ko‘ra shakllantirilishi mumkin. Masalan, harakat, harorat, og‘irlik, yorug‘lik va tirik mavjudotga xos harakatlar badiiy tasvirda boshqa tushunchalarni ifodalashga xizmat qiladi. Biroq guruhlar ro‘yxati oldindan yopiq deb belgilanmasligi kerak. Korpusdagi matnlar tahlili davomida dastlabki tasnifga sig‘maydigan yangi munosabatlar uchrashi mumkin.

Shuningdek, “jonlantirish” va “harakat sohasiga oid metafora” har doim bir-birini istisno qiladigan guruhlar emas. Masalan, “sukut qichqirdi” ifodasida insonga xos harakat jonsiz yoki mavhum tushunchaga ko‘chiriladi. Bunday birlikda manba sohasi, maqsad sohasi va jonlantirish belgisi alohida qayd etilsa, tasnif aniqroq bo‘ladi. Shu bois barcha ma’lumotni bitta yorliqqa jamlash o‘rniga ko‘p qatlamli annotatsiya qo‘llash maqsadga muvofiq.

Ko‘p qatlamli annotatsiyada birinchi qatlam birlikning metaforik yoki to‘g‘ri ma’noda qo‘llanganini bildiradi. Ikkinchi qatlam manba va maqsad sohalarini, uchinchi qatlam esa odatiylashganlik yoki muallifga xoslik kabi qo‘shimcha xususiyatlarni qayd etadi. Bu tartib bir ifodani turli nuqtayi nazardan qidirish va qiyoslash imkonini beradi.

Kompyuter usullarining vazifasi

Kompyuter tahlili matnni gap va so‘zlarga ajratishdan boshlanadi. Keyingi bosqichda so‘zning boshlang‘ich shakli, so‘z turkumi va gapdagi bog‘lanishlari aniqlanadi. Bu ma’lumotlar metaforaga nomzod birliklarni topishda foydali: masalan,

fe’lning odatdagi ishtirokchisi bilan matndagi ishtirokchisi o‘rtasidagi semantik farq tekshirilishi mumkin. Lingvistik yondashuvlarga tayangan ayrim avtomatik modellar ham kontekstual va asosiy ma’no farqi, hamda birlikning kontekst bilan mosligini hisobga oladi.

Kontekstga sezgir til modellari bir so‘zning turli gaplardagi qo‘llanishlarini qiyoslashga yordam beradi. Biroq dastur tomonidan topilgan semantik o‘xshashlik yoki farqning o‘zi badiiy metaforaning manba va maqsad sohalarini ishonchli belgilash uchun yetarli emas. Masalan, muallif bir obrazni asar davomida rivojlantirsa, alohida gap asosida chiqarilgan xulosa to‘liq bo‘lmaydi. Shuning uchun kompyuter natijasi lingvistik belgilash qoidalari va kengroq matn konteksti bilan tekshiriladi.

Taklif etilayotgan integratsiyalashgan yondashuv quyidagi ketma-ketlikka asoslanadi:

Dastlabki ishlov: matnni gap va so‘zlarga ajratish, grammatik belgilarni aniqlash.

Nomzodlarni saralash: kontekstual ma’no farqi yoki noodatiy semantik bog‘lanish mavjud birliklarni ajratish.

Metaforik qo‘llanishni tekshirish: birlikning asosiy va kontekstual ma’nolarini qiyoslash.

Semantik tasnif: manba sohasi, maqsad sohasi va ko‘chirilgan belgini qayd etish.

Mutaxassis tekshiruvi: bahsli yoki ko‘p talqinli ifodalar bo‘yicha yakuniy qaror chiqarish.

Ushbu ketma-ketlik ishlab turgan dastur tavsifi emas, kelgusida sinab ko‘rish uchun taklif etilgan modeldir. Uning har bir bosqichi alohida baholanishi zarur. Masalan, tizim metaforani to‘g‘ri topib, uning manba sohasini xato belgilashi mumkin. Faqat umumiy natijani hisoblash bunday xatoning qayerda yuzaga kelganini ko‘rsatmaydi.

Badiiy matndagi chegaraviy holatlar

Metaforani semantik tasniflashda eng murakkab holatlardan biri ko‘chma ma’nosi odatiylashgan birikmalardir. Ularning metaforik asosi mavjud bo‘lsa-da, matnda yangicha obraz yaratish vazifasini bajarmasligi mumkin. Shuning uchun metaforik qo‘llanish bilan badiiy yangilik bir xil belgi sifatida olinmaydi.

Yana bir qiyinchilik metafora va unga yaqin tasviriy vositalar chegarasida yuzaga keladi. Ochiq o‘xshatish qiyos vositasi bilan beriladi; metonimiyada esa ma’no ko‘chishi ko‘pincha o‘xshashlikdan ko‘ra yaqinlik munosabatiga tayanadi. Turg‘un iboralarda butun birikmaning ma’nosini uning tarkibidagi har bir so‘zdan alohida chiqarib bo‘lmaydi. Annotatsiya yo‘riqnomasida bunday holatlar uchun misollar va qaror qoidalari berilishi kompyuter modelini o‘qitish hamda baholash uchun muhimdir.

Natijada lingvistik belgilar va kompyuter usullarining integratsiyasi ikki vazifani bajaradi: lingvistik tahlil tasnif qarorining mazmuniy asosini belgilaydi, kompyuter usullari esa ushbu mezonlarni katta hajmdagi matnlarda izchil qo‘llash va tekshirish imkonini beradi. Yondashuvning amaliy samarasi esa faqat mutaxassislar tomonidan belgilangan badiiy matnlar korpusida o‘tkaziladigan sinovdan so‘ng aniqlanishi mumkin.

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DEVELOPING SOCIAL ACTIVITY OF STUDENTS WITH DISABILITIES THROUGH ADAPTIVE SPORTS TOOLS IN INCLUSIVE EDUCATION

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Abstract

This abstract explores the potential of developing the social activity of students with disabilities through adaptive sports tools in inclusive education settings. The objective of the study is to identify the pedagogical conditions that foster peer collaboration, teamwork, and individual initiative during physical activities. Based on an analysis of relevant scientific literature, the paper examines tailoring physical exercises to students' abilities, utilizing accessible equipment, modifying game rules as needed, and assigning meaningful roles to each participant within the team.

In this context, adaptive sports tools encompass not only modified athletic equipment, but also activity organization methods, customized rules, and support mechanisms. It is argued that their effectiveness should be evaluated not merely by attendance or physical participation, but by the student's active communication with peers, involvement in decision-making, and contribution to shared outcomes. Furthermore, the role of the educator in distributing tasks fairly, cultivating mutual respect among peers, and acknowledging individual progress is highlighted. The abstract is grounded in literature review; it does not present novel experimental data regarding the impact of adaptive sports tools on social activity.

Keywords

inclusive education, students with disabilities, adaptive sports, social activity, team activities, peer collaboration, modified sports equipment.

INKLYUZIV TA’LIMDA ADAPTIV SPORT VOSITALARI ORQALI NOGIRONLIGI BO‘LGAN O‘QUVCHILARNING IJTIMOIY FAOLLIGINI RIVOJLANTIRISH

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Annotatsiya

Ushbu tezisda inklyuziv ta’lim sharoitida adaptiv sport vositalari orqali nogironligi bo‘lgan o‘quvchilarning ijtimoiy faolligini rivojlantirish imkoniyatlari yoritiladi. Tezisning maqsadi o‘quvchilarning sport mashg‘ulotlarida tengdoshlari bilan hamkorlik qilishi, jamoaviy vazifalarni bajarishi va o‘z tashabbusini namoyon etishiga yordam beradigan pedagogik shartlarni aniqlashdan iborat. Mavzuga oid ilmiy qarashlarni tahlil qilish asosida mashqlarni o‘quvchilarning imkoniyatlariga moslashtirish, qulay jihozlardan foydalanish, o‘yin qoidalarini zaruratga ko‘ra o‘zgartirish va har bir ishtirokchiga jamoada mazmunli vazifa berish masalalari ko‘rib chiqiladi. Tezisda adaptiv sport vositalari deganda moslashtirilgan sport jihozlari bilan birga mashg‘ulotni tashkil etish usullari, o‘yin qoidalari va yordam shakllari ham nazarda tutiladi. Ularning samarasi o‘quvchining mashg‘ulotda shunchaki qatnashishi bilan emas, balki tengdoshlari bilan muloqotga kirishishi, qaror qabul qilishda ishtirok etishi va umumiy natijaga hissa qo‘shishi bilan baholanishi asoslanadi. Shuningdek, o‘qituvchining vazifalarni adolatli taqsimlashi, tengdoshlar o‘rtasida hurmatga asoslangan munosabatni shakllantirishi va o‘quvchining individual o‘sishini e’tirof etishi muhimligi ta’kidlanadi. Tezis adabiyotlar tahliliga asoslanadi; adaptiv sport vositalarining ijtimoiy faollikka ta’siri bo‘yicha yangi eksperimental natijalar keltirilmaydi.

Kalit so‘zlar: inklyuziv ta’lim, nogironligi bo‘lgan o‘quvchilar, adaptiv sport, ijtimoiy faollik, jamoaviy mashg‘ulot, tengdoshlar bilan hamkorlik, moslashtirilgan sport jihozlari.

Kirish. Inklyuziv ta’limning muhim vazifalaridan biri nogironligi bo‘lgan o‘quvchilarning maktab hayotida faol ishtirok etishi uchun sharoit yaratishdir. Jismoniy tarbiya va sport mashg‘ulotlari bu vazifani amalga oshirishda alohida o‘rin tutadi. Chunki sport o‘quvchiga harakat ko‘nikmalarini rivojlantirish bilan birga tengdoshlari bilan muloqot qilish, kelishilgan qoidalarga amal qilish, jamoaviy qaror qabul qilish va umumiy maqsadga erishishda o‘z hissasini qo‘shish imkonini beradi. Biroq o‘quvchining mashg‘ulotda hozir bo‘lishi uning ijtimoiy jihatdan faol ishtirok etayotganini anglatmaydi. Agar u doim kuzatuvchi rolida qolsa yoki o‘yin natijasiga ta’sir qila olmasa, sportning ijtimoiy imkoniyatlari cheklanadi.

Bu masalani hal qilishda adaptiv sport vositalaridan foydalanish muhim. Mazkur tezisda adaptiv sport vositalari deganda faqat maxsus jihozlar emas, balki o‘quvchining imkoniyatlariga moslashtirilgan mashqlar, o‘yin qoidalari, mashg‘ulot muhiti va pedagogik yordam shakllari tushuniladi. Masalan, to‘pning hajmi yoki og‘irligini o‘zgartirish, harakat masofasini moslashtirish, topshiriqni bajarish uchun ko‘proq vaqt ajratish yoxud jamoa ichidagi rollarni qayta taqsimlash o‘quvchining faol ishtirokiga yordam berishi mumkin. Bunday o‘zgarishlar mashg‘ulotning umumiy maqsadini saqlagan holda har bir o‘quvchiga unda qatnashish imkonini berishi lozim.

Nogironligi bo‘lgan o‘quvchilarning ijtimoiy faolligi ularning tengdoshlari bilan muloqotga kirishishi, hamkorlikdagi vazifalarni bajarishi, o‘z fikrini bildirishi va tashabbus ko‘rsatishida namoyon bo‘ladi. Ushbu ko‘nikmalarni rivojlantirish uchun o‘qituvchi mashg‘ulotni faqat jismoniy natijaga yo‘naltirmasdan, o‘quvchilar o‘rtasidagi o‘zaro munosabatni ham rejalashtirishi zarur. Har bir ishtirokchiga mazmunli vazifa berilishi va uning hissasi jamoa tomonidan e’tirof etilishi ijtimoiy faollik uchun qulay muhit yaratadi. Tezisning maqsadi inklyuziv ta’limda adaptiv sport vositalaridan foydalanish orqali nogironligi bo‘lgan o‘quvchilarning ijtimoiy faolligini rivojlantirishga xizmat qiladigan pedagogik yondashuvlarni tahlil qilishdan iborat. Shu

maqsadda mashg‘ulotlarni moslashtirish, jamoaviy ishtirokni tashkil etish hamda o‘quvchining ijtimoiy faolligini kuzatish mezonlari ko‘rib chiqiladi.

Asosiy qism. Adaptiv sport vositalaridan foydalanishning pedagogik mazmuni o‘quvchiga tayyor mashqni bajarishni talab qilish bilan cheklanmaydi. Mashg‘ulot o‘quvchining imkoniyatlari va ehtiyojlariga mos tashkil etilganda u harakatda, tengdoshlari bilan muloqotda va jamoaviy vazifalarda faol qatnasha oladi. Shu sababli ijtimoiy faollikni rivojlantirishda moslashtirishning uch jihati — sport vazifasi, ishtirok muhiti va o‘quvchining jamoaviy roli — birgalikda hisobga olinishi lozim.

Mashg‘ulot mazmunini moslashtirish. O‘qituvchi sport topshirig‘ining maqsadini belgilagach, uni bajarishning turli usullarini taklif etadi. Masalan, to‘p uzatish mashqida barcha o‘quvchilarning umumiy vazifasi jamoaviy hamkorlik bo‘lishi mumkin. Bunda ayrim o‘quvchilar to‘pni uzoqroq masofadan uzatsa, boshqalari yaqinroq masofada yoki moslashtirilgan to‘p bilan ishlaydi. Topshiriqning masofasi, davomiyligi, harakat tezligi va jihozlari o‘zgartirilsa ham, o‘quvchilarning umumiy faoliyatdagi ishtiroki saqlanadi. Moslashtirish har bir o‘quvchiga faqat oson vazifa berishni emas, uning imkoniyatiga mos rivojlanish bosqichini yaratishni anglatadi.

Qulay va xavfsiz muhit yaratish. Jihozlarning joylashuvi, maydonning harakatlanish uchun qulayligi va ko‘rsatmalarning tushunarliligi o‘quvchining mustaqil qatnashishiga ta’sir qiladi. Zarur hollarda ko‘rsatmalar og‘zaki tushuntirish bilan birga namoyish etilishi, mashg‘ulot bosqichlari oldindan aytilishi yoki o‘quvchiga mos yordam vositalaridan foydalanilishi mumkin. Qulay muhit o‘quvchini ortiqcha cheklamasdan, uning faol harakat qilishi va tengdoshlari bilan bir xil mashg‘ulot jarayonida bo‘lishiga xizmat qiladi. Jamoaviy rollarni taqsimlash. O‘quvchining ijtimoiy faolligi uning jamoa uchun ahamiyatli vazifani bajara olishida yaqqol namoyon bo‘ladi. O‘qituvchi o‘yin davomida ishtirokchilar rollarini shunday belgilashi kerakki, har bir o‘quvchi umumiy natijaga hissa qo‘sha olsin. Masalan, o‘quvchi to‘p uzatishi,

yo‘nalishni tanlashda fikr bildirishi, jamoa harakatini muvofiqlashtirishi yoki kelishilgan qoidalarga rioya etilishini kuzatishi mumkin. Bunda rol o‘quvchining o‘rniga boshqalar harakat qilishini anglatmasligi kerak. Vazifalarni vaqti-vaqti bilan almashtirish esa bir o‘quvchining doim cheklangan rolda qolib ketishining oldini oladi.

Tengdoshlar hamkorligini qo‘llab-quvvatlash. Adaptiv sport mashg‘ulotining ijtimoiy samarasi ko‘p jihatdan o‘quvchilar o‘rtasidagi munosabatga bog‘liq. Juftlikdagi mashqlar, kichik guruhli o‘yinlar va birgalikda hal qilinadigan vazifalar muloqot uchun imkoniyat yaratadi. O‘qituvchi tengdoshlarga qanday yordam kerakligini o‘quvchining o‘zidan so‘rash, uning fikrini tinglash va qarorlarni birgalikda qabul qilish odatini singdirishi muhim. Shunda yordam o‘quvchining mustaqilligini kamaytirmaydi, balki hamkorlikning tabiiy qismiga aylanadi. Ijtimoiy faollikni kuzatish. Mashg‘ulot samaradorligini faqat jismoniy natija bilan baholash yetarli emas. O‘quvchining muloqot boshlashi, guruh vazifasida qatnashishi, o‘z fikrini bildirishi, yordam so‘rashi yoki boshqalarga yordam taklif qilishi ham kuzatilishi mumkin. Bu belgilar o‘quvchining avvalgi ishtiroki bilan qiyoslanishi maqsadga muvofiq. Masalan, dastlab faqat o‘qituvchi murojaat qilganda javob bergan o‘quvchining keyinchalik jamoaviy vazifada o‘zi taklif bildira boshlashi ijtimoiy faollikdagi o‘sishni ko‘rsatadi. Bunday kuzatuvlar keyingi mashg‘ulotlarni rejalashtirishga yordam beradi.

Shunday qilib, adaptiv sport vositalari o‘quvchining ijtimoiy faolligini rivojlantirishga xizmat qilishi uchun jihoz yoki mashqni moslashtirishning o‘zi yetarli emas. O‘quvchiga jamoada faol rol berish, tengdoshlari bilan hamkorlik qilishiga sharoit yaratish va uning ishtirokidagi o‘zgarishlarni izchil kuzatish ham zarur.

Xulosa. Inklyuziv ta’limda adaptiv sport vositalari nogironligi bo‘lgan o‘quvchilarning mashg‘ulotlarda faol ishtirok etishiga sharoit yaratadi. Ularning ijtimoiy faollikka ta’siri o‘quvchi tengdoshlari bilan muloqot qilishi, jamoaviy vazifani bajarishi, o‘z fikrini bildirishi va umumiy natijaga hissa qo‘shishi uchun qanday

imkoniyat yaratilganiga bog‘liq. Shu bois sport mashg‘ulotini tashkil etishda o‘quvchining individual imkoniyatlariga mos jihoz va mashqlarni tanlash, zarur bo‘lsa o‘yin qoidalarini o‘zgartirish hamda har bir ishtirokchiga mazmunli rol berish muhimdir. O‘qituvchi tengdoshlar o‘rtasidagi hamkorlikni qo‘llab-quvvatlashi, o‘quvchining mustaqil qaror qabul qilishiga imkon berishi va uning ijtimoiy ishtirokidagi o‘zgarishlarni kuzatib borishi lozim.

Mazkur tezis adabiyotlar tahliliga asoslangan. Taklif etilgan yondashuvlarning amaliy samaradorligini baholash uchun keyingi tadqiqotlarda o‘quvchilarning mashg‘ulotdagi ishtiroki, tengdoshlari bilan munosabati va o‘z tajribasi haqidagi fikrlarini tizimli o‘rganish maqsadga muvofiq.

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THE ROLE OF FASHION AND 3D FASHION TECHNOLOGIES IN THE DEVELOPMENT OF UZBEKISTAN'S LIGHT INDUSTRY

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Abstract

The development of digital technologies is transforming the fashion industry and creating new opportunities for textile and garment manufacturers. One of the most significant innovations in this field is 3D fashion design, which allows designers to create, visualize, modify, and present garments in a digital environment before producing physical samples. For Uzbekistan, where the textile and garment sector is an important part of the manufacturing industry, the integration of 3D fashion technologies can contribute to improving product quality, reducing material waste, accelerating design processes, and increasing competitiveness in international markets. This thesis examines the relationship between contemporary fashion development, digital design, and the modernization of Uzbekistan's light industry. Particular attention is paid to the potential positive effects of 3D technologies on product development, sustainable production, professional education, export opportunities, and the formation of new creative professions.

Keywords

fashion industry, 3D fashions, digital design, textile industry, light industry, Uzbekistan, digitalization, sustainability, garment production, innovation.

Introduction

Fashion is not limited to the creation of clothing and accessories. It represents a complex creative and economic system that combines design, technology, culture, consumer behavior, manufacturing, marketing, and international trade. Changes in

fashion trends directly influence the development of textile and garment production because manufacturers must continuously respond to changing consumer preferences and market requirements.

In recent years, digitalization has become one of the major directions of transformation in the fashion sector. Traditional garment development usually requires sketches, pattern construction, fabric selection, sewing, fitting, correction, and the production of several physical samples. Although this approach remains important, it can require significant amounts of time, labor, and material resources. Digital technologies provide an alternative by allowing many stages of product development to be performed virtually.

Among these technologies, 3D fashion design has gained particular importance. Three-dimensional garment simulation makes it possible to construct a virtual garment, apply digital fabrics and textures, adjust patterns, visualize the garment on a virtual avatar, and identify potential construction problems before physical production. Consequently, 3D fashion can become not only a design instrument but also an important element of industrial modernization.

For Uzbekistan, the introduction of such technologies is especially relevant because the country's textile and garment industry has considerable potential for value-added production and export-oriented development. Combining Uzbekistan's textile resources, manufacturing capabilities, traditional craftsmanship, and modern digital design can create new opportunities for the development of competitive fashion products.

The Development of Fashion in the Context of Digital Transformation

Contemporary fashion is increasingly influenced by technological development. Digital tools have changed the way designers collect information, develop concepts, communicate with manufacturers, and present collections to consumers. Computer-aided design systems have become an important part of professional design practice,

while digital visualization has expanded the possibilities for experimenting with silhouettes, colors, materials, and proportions.

3D fashion represents a further development of this process. Instead of relying exclusively on two-dimensional sketches or physical prototypes, designers can create a three-dimensional representation of a garment. The virtual environment allows different design alternatives to be tested quickly.

For example, a designer developing a jacket can digitally change the collar, sleeve volume, length, fabric appearance, or decorative elements without immediately sewing a new physical sample. Such flexibility can reduce the number of unnecessary prototypes and provide a more efficient communication process between designers, pattern makers, manufacturers, and clients.

The importance of this technology is not restricted to large international fashion companies. Small and medium-sized enterprises can also benefit from digital product development because virtual samples can support online presentations, preliminary customer feedback, and remote cooperation with potential business partners.

3D Fashion Technology and Its Advantages

One of the principal advantages of 3D fashion is the ability to visualize a garment before physical production. Traditional design processes can involve repeated sampling and correction. Digital simulation makes it possible to detect some problems at an earlier stage. The main advantages of 3D fashion technology include:

– **Reduction of physical sampling.** Virtual prototypes can reduce the need to produce multiple physical samples during the early stages of design development.

– **Reduction of material consumption.** Fewer physical prototypes can contribute to lower consumption of fabric, thread, accessories, and packaging materials.

– **Faster product development.** Changes to garment parameters can be implemented digitally without restarting the entire physical production process.

– **Improved communication.** A three-dimensional model provides designers, manufacturers, clients, and investors with a clearer understanding of the proposed product.

– **Digital product presentation.** 3D garments can be presented through websites, digital showrooms, social media, virtual exhibitions, and other online platforms.

– **Support for sustainable fashion.** By reducing unnecessary samples and improving production planning, digital design can contribute to more responsible resource management.

Thus, 3D fashion should not be considered merely a visual or artistic innovation. It can also function as a production-management instrument capable of influencing several stages of the fashion value chain.

Positive Effects on Uzbekistan's Light Industry

The implementation of 3D fashion technologies can have several positive effects on Uzbekistan's light industry. First, it can support the transition from conventional mass production toward more flexible and design-oriented manufacturing. Instead of competing primarily through production volume and relatively low costs, enterprises can increase the value of their products through original design, branding, quality, and technological innovation.

Uzbekistan has a strong textile heritage and access to locally produced textile materials. This creates an opportunity to combine traditional resources with contemporary digital design. For example, traditional Uzbek patterns, ornamental motifs, and textile techniques can be incorporated into modern garments and visualized through 3D software before manufacturing.

Such an approach could contribute to the creation of products that combine cultural identity with contemporary fashion requirements. The digital environment allows designers to test different interpretations of traditional motifs without immediately

producing physical samples. Another important effect is the possibility of reducing development costs. For manufacturers, every physical prototype represents an expenditure of fabric, labor, electricity, and time. When some design decisions can be evaluated digitally, enterprises may be able to reduce unnecessary sampling and improve the efficiency of product development.

3D technology can also support export-oriented production. International buyers increasingly expect suppliers to communicate efficiently and provide accurate information about products. Digital samples can facilitate communication between Uzbek manufacturers and foreign partners by enabling collections and product concepts to be presented remotely.

This is particularly relevant for companies seeking to participate in international fashion markets. A digital collection can be developed and presented before large-scale physical production begins. Consequently, manufacturers may receive preliminary feedback from potential buyers and adjust products according to market requirements.

Sustainability and Resource Efficiency

Sustainability has become an important issue in contemporary fashion. Conventional clothing production can generate material waste at different stages, including pattern cutting, sampling, defective production, and unsold inventory.

3D fashion cannot eliminate these problems completely, because physical garments will still require materials and manufacturing processes. However, digital product development can contribute to reducing waste during the design and sampling stages.

For Uzbekistan's light industry, this may be particularly valuable because efficient use of textile resources can improve both economic and environmental performance. Digital sampling can help designers determine whether a proposed product is technically and aesthetically appropriate before investing in physical prototypes.

Moreover, virtual collections can be used for marketing purposes. Companies can

display digital versions of products before producing large quantities. If customer or buyer interest is limited, the company can reconsider the design without having produced a large stock of physical garments.

Therefore, 3D fashion can support a transition from production based primarily on forecasts toward more flexible and demand-oriented product development.

Impact on Education and Professional Development

The introduction of 3D fashion technologies also creates new requirements for professional education. Future fashion designers and garment specialists need not only traditional knowledge of composition, textile materials, construction, and technology but also digital competencies.

Universities and vocational institutions in Uzbekistan can incorporate 3D garment simulation, digital pattern development, virtual prototyping, and digital fashion presentation into relevant educational programs. This would allow students to develop skills that correspond to the changing requirements of the international fashion industry.

Digital education can also expand opportunities for cooperation with international institutions. Students can exchange digital projects, participate in online competitions, create virtual collections, and communicate with designers from other countries without the need for physical transportation of garments.

The emergence of 3D fashion may also create new professional roles, including digital fashion designer, 3D garment specialist, virtual stylist, digital pattern developer, and fashion visualization specialist. Consequently, technological development can contribute not only to industrial modernization but also to employment diversification within the creative economy.

Opportunities for Uzbek Fashion Brands

The combination of fashion, textile production, cultural heritage, and digital technologies can strengthen the development of Uzbek fashion brands. Uzbekistan

possesses distinctive decorative traditions, including patterns, embroidery, weaving, and color combinations that can serve as sources of inspiration for contemporary collections.

3D technology provides an opportunity to reinterpret these elements for modern consumers. Designers can create digital collections that preserve recognizable cultural characteristics while using contemporary silhouettes and construction methods.

For example, traditional ornamental elements can be integrated into modern dresses, jackets, shirts, accessories, and sportswear. Before production, designers can evaluate the visual balance of these elements on digital avatars. This can help develop collections that are both culturally distinctive and commercially adaptable.

Digital presentation can also help local brands reach consumers outside Uzbekistan. Social media, virtual showrooms, online fashion presentations, and digital catalogs can reduce some of the geographical barriers traditionally faced by emerging fashion companies.

Challenges and Conditions for Successful Implementation

Despite its potential advantages, the implementation of 3D fashion technology requires appropriate conditions. Software, hardware, training, and qualified specialists represent initial investments for enterprises and educational institutions.

Another challenge is that digital simulation cannot completely replace physical testing. Fabric behavior, texture, elasticity, drape, thickness, and other characteristics may differ from their digital representation. Therefore, the most effective approach is not necessarily the complete replacement of traditional methods but the integration of digital and physical design processes. Successful digital transformation also requires cooperation among universities, textile enterprises, software specialists, designers, and government institutions. Educational programs should be connected with actual industrial requirements, while enterprises should provide opportunities for students and young specialists to work with contemporary technologies.

Conclusion

Fashion and 3D fashion technologies can play an important role in the modernization of Uzbekistan's light industry. The integration of digital garment design into textile and apparel production can improve the efficiency of product development, reduce unnecessary physical sampling, support more responsible use of resources, and facilitate communication with international partners.

For Uzbekistan, the development of 3D fashion also represents an opportunity to connect the country's rich textile and cultural heritage with contemporary technological practices. Traditional Uzbek motifs, fabrics, and design traditions can be transformed into modern fashion products through digital experimentation and visualization.

The long-term development of this direction depends on investment in digital infrastructure, professional education, technological competencies, and cooperation between academia and industry. The combination of creative design, local textile resources, and digital technologies can contribute to the formation of a more innovative, flexible, sustainable, and internationally connected fashion sector in Uzbekistan.

In this context, 3D fashion should be understood not simply as a new method of creating attractive digital garments, but as part of a broader transformation of the fashion production system. Its successful integration can support designers, manufacturers, educational institutions, and emerging Uzbek fashion brands in responding more effectively to the requirements of the contemporary global market.

INVESTIGATION OF THE EFFECT OF PARTICLE SIZE FRACTION ON THE CHEMICAL COMPOSITION OF SERPENTINITE

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Abstract

The aim of this work was to establish the effect of particle-size fractionation on the distribution of the major and associated chemical components of serpentinite from the Karakalpak deposit. The initial material, weighing 550.20 g, was ground in a ball mill for 30, 60, 90, and 120 min, after which the particle-size distribution was determined by sieve analysis. For elemental analysis, the sample ground for 30 min was selected; five particle-size classes were separated from it, and the elemental contents were determined by inductively coupled plasma (ICP) analysis. It was established that changes in grinding duration were accompanied by a non-monotonic redistribution of the material among the fractions. The results show that selection of a particle-size class should take into account simultaneously the concentration of the target component, the mass yield of the fraction, and the distribution of associated elements. The results can be used as an initial characterization of the raw material before further investigation of its thermal and sulfuric-acid processing.

Keywords

serpentinite; particle-size composition; grinding; magnesium; chemical composition; ICP; fractionation

Introduction

Serpentinite is a multicomponent mineral raw material whose chemical composition may vary depending on its mineralogical composition and the distribution of components among particle-size classes. For the technological processing of such raw materials, it is important to establish not only the overall chemical composition but also the distribution of target and associated components after grinding and fractionation. Magnesium is of particular interest as one of the major components of serpentinite, since the results of fractionation analysis can be used to select conditions for subsequent chemical processing. In this study, serpentinite from the Karakalpak deposit was investigated to determine the effect of grinding duration on particle-size distribution and to establish the distribution of major and associated elements among the separated fractions. Previous studies of serpentinites have addressed their mineralogical and thermal transformations, mechanical activation, acid leaching, and production of magnesium compounds [1–4], while data on the composition and chemical processing of raw materials from the Karakalpak deposit have also been published [4,5].

Методы исследований

The initial serpentinite, weighing 550.20 g, was ground in a ball mill for 30, 60, 90, and 120 min. The particle-size distribution was determined by sieve analysis using an electronic sieve. For each grinding regime, the mass of material passing through the sieve, the mass adhering to the sieve, the mass remaining on the sieve, and the yield of the corresponding fraction were determined. For subsequent elemental analysis, the sample after 30 min of grinding was selected. Five particle-size classes were separated: 0.5, 0.3, 0.1, 0.06, and 0.05 mm. The contents of the major and associated chemical elements were determined by inductively coupled plasma (ICP) analysis. In interpreting the results, both the element concentration and the mass yield of the corresponding fraction were taken into account. The average composition was estimated using mass-fraction weighting. The results of the study are presented in Tables 1 and 2.

Results and Discussion

The sieve analysis results demonstrated a substantial effect of grinding duration on the particle-size distribution of serpentinite. After 30 min, the largest proportion of the material was represented by the 0.1 mm fraction—243.26 g, or 81.90%. After 60 min, the yield of the 0.1 mm fraction decreased to 49.39%, while the shares of the 0.5 and 0.3 mm fractions were 22.12% and 25.24%, respectively. After 90 min, the 0.3 mm fraction became predominant, with a yield of 55.84%. With a further increase in grinding duration to 120 min, the proportion of the 0.1 mm fraction increased again to 79.13%. Thus, the redistribution of the material was non-monotonic. The proportion of the finest fractions, 0.05–0.06 mm, remained small under all investigated conditions.

Table 1 – Fractional composition of serpentinite as a function of grinding duration

Grinding time, min	Sieve opening size, mm	Initial mass on sieve, g	Mass passing through sieve, g	Mass adhering to sieve, g	Mass remaining on sieve, g	Fraction yield, %
30	0.5	297.05	284.69		12.36	4.16
	0.3	284.69	273.38	1.2	11.31	3.8
	0.1	273.38	30.12	2.83	243.26	81.9
	0.06	30.12	1.66	0.9	23.53	7.92
	0.05	1.66	-	-	1.66	0.55
60	0.5	300.07	233.71	-	66.36	22.12
	0.3	233.71	157.74	0.55	75.74	25.24
	0.1	157.74	9.56	0.74	148.18	49.39
	0.06	9.36	1.84	0.1	7.72	2.57
	0.05	1.84	0	-	0.61	0.2

90	0.5	300	237.4	-	62.6	20.86
	0.3	237.4	69.88	0.2	167.52	55.84
	0.1	69.88	1.03	0.45	68.85	22.95
	0.06	1.03	0.68	-	0.35	0.11
	0.05	0	0	-	0	0
120	0.5	300.02	286.01	-	14.01	4.67
	0.3	286.01	240.52	0.48	45.49	15.16
	0.1	240.52	3.12	1	237.4	79.13
	0.06	3.12	1.62	-	1.5	0.5
	0.05	1.62	1.5	-	0.12	0.04

For the sample ground for 30 min, elemental analysis revealed a heterogeneous distribution of components among the particle-size classes. The Mg content ranged from 190,500 g/t in the 0.3 mm fraction to 229,600 g/t in the 0.06 mm fraction. However, the increase in Mg content with decreasing particle size was not monotonic: in the 0.05 mm fraction, the concentration decreased to 210,600 g/t. The Si content varied within a relatively narrow range, from 201,000 to 215,000 g/t, whereas Fe ranged from 36,060 to 48,220 g/t. The 0.06 mm fraction was characterized simultaneously by the highest Mg content and a relatively low Fe content (37,960 g/t). The Al content was 5,319–7,074 g/t, Ca—3,646–4,252 g/t, Cr—4,700–6,400 g/t, Ni—1,810–2,550 g/t, and Cu—67.5–82.4 g/t. The 0.1 mm fraction had the highest mass yield, accounting for 76.80%, whereas the 0.06 mm fraction accounted for 20.31%. Therefore, the higher Mg concentration in the latter should not be evaluated independently of its mass yield.

Table 2 – Chemical composition of different serpentinite fractions

No.	Fraction size, mm	Fraction amount, %	Chemical composition, g/t

1	0.5	0.382	Mg	Al	Ca	Cr	Fe	Si	Ni	Cu
			228700	7074	3646	6400	44410	202000	2550	78.1
			Y	Zr	Ag	Sb	Cs	La	Ce	Pr
			0.297	1.12	0.024	1.83	0.156	0.574	1.07	0.130
			Ho	Er	Lu	Re	Au	Pb	Bi	Th
			0.013	0.040	0.01	0.01	0.05	23.1	0.022	0.097
2	0.3	1.150	Mg	Al	Ca	Cr	Fe	Si	Ni	Cu
			190500	5319	4079	6350	48220	215000	2300	82.4
			Y	Zr	Ag	Sb	Cs	La	Ce	Pr
			0.190	0.632	0.040	1.75	0.038	0.163	0.344	0.038
			Ho	Er	Lu	Re	Au	Pb	Bi	Th
			0.011	0.025	0.01	0.01	0.05	6.64	0.013	0.034
3	0.1	76.80	Mg	Al	Ca	Cr	Fe	Si	Ni	Cu
			201600	5971	3915	4700	45490	201000	1810	72.3
			Y	Zr	Ag	Sb	Cs	La	Ce	Pr
			0.188	0.588	0.027	1.61	0.043	0.169	0.385	0.045
			Ho	Er	Lu	Re	Au	Pb	Bi	Th
			0.010	0.026	0.01	0.01	0.05	6.40	0.020	0.034
4	0.06	20.31	Mg	Al	Ca	Cr	Fe	Si	Ni	Cu
			229600	6178	4252	5200	37960	213000	2200	71.3
			Y	Zr	Ag	Sb	Cs	La	Ce	Pr
			0.185	0.773	0.018	1.52	0.053	0.196	0.406	0.049
			Ho	Er	Lu	Re	Au	Pb	Bi	Th
			0.010	0.024	0.01	0.01	0.05	5.48	0.022	0.044
5	0.05	1.34	Mg	Al	Ca	Cr	Fe	Si	Ni	Cu
			210600	5912	3772	5100	36060	210000	2200	67.5
			Y	Zr	Ag	Sb	Cs	La	Ce	Pr
			0.185	0.740	10.6	1.54	0.069	0.231	0.538	0.054
			Ho	Er	Lu	Re	Au	Pb	Bi	Th
			0.011	0.030	0.01	0.01	0.05	9.63	0.020	0.040

The distribution of trace elements was also heterogeneous. The most pronounced local variations were observed for Zn, As, Sr, and Ba. The Zn content in the 0.5 mm

fraction reached 431 g/t, whereas in the other fractions it ranged from 24.1 to 32.1 g/t. The maximum As content, 35.7 g/t, was observed in the 0.3 mm fraction; Sr reached 65.7 g/t in the 0.1 mm fraction, while Ba reached 121 g/t in the 0.5 mm fraction. No consistent dependence on particle size was established for most of Y, Zr, Nb, Mo, and the rare-earth elements. The Ag result for the 0.05 mm fraction—10.6 g/t—should be noted separately, whereas its content in the other fractions was 0.018–0.040 g/t. Due to the pronounced difference between this value and the other results, it is appropriate to regard it as an initial experimental value requiring repeated analytical confirmation.

Discussion

Taken together, the results show that fractionation does not lead to simple monotonic enrichment of serpentinite in magnesium as particle size decreases. The highest Mg concentration was identified in the 0.06 mm fraction; however, the largest proportion of the material was concentrated in the 0.1 mm fraction. Therefore, when preparing the raw material for subsequent processing, the feasibility of separating a particular fraction should be evaluated based on a combination of parameters: Mg content, mass yield, and distribution of impurity components. Of particular interest is the combination of a high Mg content and a lower Fe concentration in the 0.06 mm fraction. This feature may be relevant to subsequent acid decomposition; however, the final technological preference for this fraction can only be established based on the actual Mg extraction degree and processing performance indicators [2,3,5].

Conclusion

The study established the effect of grinding duration and subsequent fractionation on the distribution of components in serpentinite from the Karakalpak deposit. After 120 min of grinding, the proportion of the 0.10 mm fraction reached 79.13%; however, the overall change in particle-size composition was non-monotonic. The maximum Mg content, 229,600 g/t, was established in the 0.06 mm fraction, with a yield of 20.31%.

The mass-weighted Mg content of the investigated material was 207,384.3 g/t. The distribution of associated elements was characterized by local maxima, particularly for Zn, As, Sr, and Ba. The data confirm the need to consider jointly the concentration of the target component, the mass yield of the fraction, and the impurity content when selecting conditions for preparing serpentinite for further processing. The results may serve as a basis for subsequent studies of the kinetics and degree of magnesium extraction during sulfuric-acid decomposition.

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AGE-ADDRESSIVITY AS A POETIC PRINCIPLE IN CONTEMPORARY ENGLISH AND UZBEK CHILDREN'S LITERATURE

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Abstract

This study examines age-addressivity as a poetic principle in children's literature. Drawing on Uzbek and English-language scholarship, it explores how literary works reflect the developmental characteristics of their implied readers through verbal, narrative, figurative, dialogic and visual-material features.

Keywords

children's literature, age-addressivity, poetics, implied reader, picturebooks, comparative poetics.

Children's literature is distinguished from literature for adults not only by subject matter or educational purpose, but also by its orientation towards a particular readership. In Uzbek children's literary scholarship, this principle is traditionally discussed through orientation towards a particular age group. B. Jamilova[1] states that a writer for children should consider the reader's age, psychological development, level of understanding and interests, and distinguishes preschool readership from primary-school and adolescent readership. M. Jumaboyev[2] likewise defines preschool readership as the period from two to seven years and stresses that literary works should correspond to children's age and level of comprehension. In the present study, age-addressivity is used as a working

1 Jamilova B.S. O'zbek bolalar adabiyoti/O'quv qo'llanma – Toshkent: Noshir, 2019. –10- 11 b.
2 Jumaboyev M. Bolalar adabiyoti va folklor – Toshkent: O'zbekiston Yozuvchilar uyushmasi Adabiyot jamg'armasi nashriyoti, 2006. – 4-5 b.

analytical term for the orientation of a literary work towards an implied child reader at a particular developmental stage and for the manifestation of this orientation in the poetic structure of the work. Age may influence plot organisation, rhythm, repetition, imagery, dialogue, verbal complexity, the relationship between words and pictures and even the material form of the book. Therefore, age-addressivity can be approached as a literary-poetic principle rather than only as a pedagogical or psychological criterion.

Reader-oriented theory provides a basis for this approach. Theresa Rogers,[3] drawing on reader-response traditions, emphasises the transaction between the reader's affective, experiential and cognitive world and the literary text. This is especially important in children's literature because a two-year-old, a four-year-old and a six-year-old reader possess different experiential and interpretive capacities. The implied reader of preschool literature, consequently, cannot be treated as age-neutral.

A methodological contrast becomes visible when Uzbek and English-language classifications are compared. Uzbek sources generally treat preschool childhood as a broad category: approximately two or three to six or seven years. By contrast, Essentials of Children's Literature[4] differentiates age-adressivity between 0–2, 2–4 and 4–7 ages. Books for ages 0–2 typically employ simple content, repetitive language, clearly defined illustrations, durable formats and opportunities for participation. For ages 2–4, picture storybooks increasingly contain simple plots and illustrations that participate in narration. The 4–7 age group is associated with broader social interaction and more developed picture-story structures[5]. This suggests that the preschool period should not automatically be treated as poetically homogeneous.

3 Rogers, T. Literary Theory and Children's Literature: Interpreting Ourselves and Our Worlds. Theory Into Practice, 38(3), 1999, pp. 139–140.

4 Rogers, T. Literary Theory and Children's Literature: Interpreting Ourselves and Our Worlds. Theory Into Practice, 38(3), 1999, pp. 138–146.

5 Short, K. G., Lynch-Brown, C., & Tomlinson, C. M. Essentials of Children's Literature. 8th ed. Pearson, 2014. pp-16-17

Recent scholarship on baby books further supports this view. Clémentine Beauvais[6] argues that cognitive-poetic approaches require scholars to relate textual and pictorial features to the physiological and cognitive development of the implied audience. Research on baby books also foregrounds rhythm, sensory participation, touch and materiality. Lassén-Seger and Österlund[7] describe baby books as a form of 'pre-literature' that may constitute an infant's first encounter with visual and textual art and preliminary narrative relationships. The poetics of literature for the youngest children therefore cannot be reduced to verbal text alone.

Uzbek theoretical sources reveal comparable principles. Jumaboyev[8] notes that works read to preschool children should be short, simple in content, visually attractive and linguistically appropriate to the child's age, psychological state and level of comprehension. Lullabies, songs, fairy tales, riddles, proverbs and tongue twisters are identified among central forms of preschool literary experience. These observations point to the importance of brevity, oral performance, sound patterning, concrete imagery and visuality. Yet the broad 2–7 category does not explain whether these features remain equally dominant throughout the entire preschool period or how their functions change as the intended reader develops.

On the basis of the reviewed sources, age-addressivity may be identified through five interrelated groups of poetic markers: (1) verbal-rhythmic features such as repetition, rhyme and sound play; (2) narrative features such as plot length, causality and predictability; (3) figurative features such as concrete imagery, familiar objects and

6 Beauvais, C. "A is for Aesthetics: The Multisensory Beauty of Baby Books." Children's Literature in Education, 54, 2023, pp. 288–289.

7 Lassén-Seger, M., & Österlund, M. Survival Kits for Babies: Baby Box Books and Infant Temporality in Finnish Maternity Packages. Children's Literature in Education, 54, 2023, pp. 337–338.

8 Jumaboyev, M. Bolalar adabiyoti va folklor. Tashkent: O'zbekiston Yozuvchilar uyushmasi Adabiyot jamg'armasi nashriyoti, 2006. - 4-5 b.

anthropomorphism; (4) dialogic-performative features including call-and-response patterns, oral performance and the adult co-reader; and (5) visual-material features, including word-image interaction, page design, book format and tactile engagement. Their relative dominance may change according to the age of the implied reader.

Thus, age-addressivity should be considered one of the constitutive principles of preschool children's poetics. Uzbek scholarship has long recognised age, psychology and linguistic accessibility, whereas English-language scholarship demonstrates the analytical value of narrower stages within early childhood. The methodological task is not necessarily to replace existing Uzbek classifications, but to investigate their internal poetic differentiation. Using age-addressivity as a comparative criterion may help identify shared typological features, age-specific poetic dominants and nationally distinctive forms of their realisation in contemporary English and Uzbek preschool children's literature.

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MAIN-TRACK PERSISTENCE AND PLATFORM ENGAGEMENT OF INCLUSIVE LEARNERS IN AN INTENSIVE PEER-TO-PEER CODING ENVIRONMENT

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Abstract

This study examines main-track persistence and platform engagement among inclusive learners after entry into the Digital Engineering School (DES), Tashkent main track. The empirical analysis uses six main-track cohort rosters dated 16 May 2026 and platform profile exports for the inclusive learner population. Thirteen inclusive learners appeared in the main-track rosters; three were recorded as deactivated and ten as active, producing a deactivation rate of 23.1%. Among non-inclusive learners in the corresponding cohorts, 195 of 1,184 were deactivated (16.5%). Fisher's exact test showed no statistically significant aggregate difference ($p = 0.46$). Within the inclusive group, learners who passed the pool had a median cumulative XP of 4,162 compared with 0 XP among those who did not; Mann–Whitney $U = 117$, two-sided $p = 0.00009$, with complete rank separation. Completed and failed project counts also differed. The findings show that main-track persistence, platform engagement and administrative exit status represent distinct dimensions of learner trajectory and should not be collapsed into a single indicator of inclusion.

Keywords

inclusive learners; main-track persistence; platform engagement; peer-to-peer education; learning analytics; learning trajectories

Introduction

Educational access, progression and persistence are related but distinct outcomes. A learner who successfully enters a programme may remain active, temporarily disengage or leave for reasons that are not captured by an admission measure. This distinction is particularly important in intensive peer-to-peer coding environments, where learning is represented through project completion, peer review and platform activity rather than conventional classroom attendance and grades.

Recent research on coding bootcamp pedagogy emphasizes the importance of hands-on learning and peer interaction in making coding meaningful to learners (Tarling et al., 2023). Peer feedback research also indicates that the educational value of feedback depends on the nature of learner engagement, including explanation, revision and constructive participation (Wu & Schunn, 2023). A broad synthesis of online peer feedback similarly concludes that learner characteristics, environmental conditions, feedback design and technology jointly shape engagement and learning outcomes (Kerman et al., 2024). These findings make persistence and platform engagement particularly relevant outcomes in a tutor-less learning model.

At the same time, platform-generated indicators require careful interpretation. Learning analytics can help institutions examine retention and inclusion, but data traces do not automatically explain the experience of learners with disabilities or other marginalized groups (Khalil et al., 2024). CAST's UDL Guidelines 3.0 emphasize accessible interaction, multiple forms of communication and learner agency (CAST, 2024), reinforcing the need to distinguish observable platform activity from the broader experience of participation.

The present study therefore addresses two connected questions after learners reach the DES main track: whether inclusive learners show a different aggregate deactivation rate from non-inclusive peers, and how platform engagement differs within the inclusive group according to pool outcome. This focus is intentionally different from the first

thesis on pool-to-main-track transition. Here, the outcome is persistence and engagement after entry rather than selection-stage progression.

Materials and methods

A quantitative observational design was applied. The persistence analysis used six main-track cohort rosters exported on 16 May 2026. Platform profile exports were available for the inclusive learner population. The individual learner was the unit of analysis. One learner had two profile files because of repeated pool attempts; these records were reconciled to a single canonical person-level profile to avoid duplicate representation.

Main-track persistence was operationalized using the administrative status recorded in cohort rosters: active student or deactivated student. The comparison was restricted to cohorts containing at least one inclusive learner. Inclusive and non-inclusive deactivation proportions were compared using Fisher's exact test because inclusive cell counts were small. Cohort-level values were retained descriptively to avoid concealing heterogeneity behind the aggregate rate.

Platform engagement was examined within the inclusive group using cumulative experience points (XP), completed projects and failed projects extracted from profile exports. Learners who passed the pool were compared with those who did not using the Mann–Whitney U test. Rank-biserial correlation was used as an effect-size measure for XP. These variables were interpreted descriptively because XP is accumulated through project activity and is therefore structurally related to progression.

The analysis also treated administrative deactivation cautiously. A deactivated status indicates that a learner is no longer recorded as active at the snapshot date, but it does not by itself identify the reason for departure. Where campus notes documented a voluntary employment-related exit, that information was retained in interpretation. This

distinction is important for avoiding the assumption that every deactivation represents academic failure.

Results

Thirteen inclusive learners appeared in the main-track rosters dated 16 May 2026. Three were recorded as deactivated and ten as active, producing an inclusive deactivation rate of 23.1%. Among non-inclusive learners in the corresponding cohorts, 195 of 1,184 were deactivated, a rate of 16.5%. Fisher's exact test yielded $p = 0.46$. Thus, the available snapshot did not show a statistically significant aggregate difference in main-track deactivation.

Cohort-level patterns were heterogeneous. In cohort 24_12, both inclusive learners remained active. In cohort 25_04, three of four inclusive learners were recorded as deactivated (75.0%), compared with 48.5% among non-inclusive learners. In cohort 25_08, all five inclusive learners represented in the status table remained active, while the non-inclusive deactivation rate was 8.3%. Cohorts 25_12 and 26_03 each contained one inclusive learner and recorded no inclusive deactivation.

Campus notes provided an important qualification: two of the three deactivated inclusive learners in cohort 25_04 had found employment and left voluntarily. The administrative category therefore combined at least one positive post-programme outcome with other forms of departure. This makes deactivation an imperfect proxy for educational failure and illustrates why exit destination should be recorded separately from activity status.

Platform engagement produced a clearer within-inclusive separation. Learners who passed the pool had a median cumulative XP of 4,162, whereas learners who did not pass had a median of 0 XP. The Mann–Whitney U statistic was 117 (two-sided $p = 0.00009$), with rank-biserial $r = -1.00$. Mean completed projects were 2.85 among

passers compared with 0.22 among non-passers (p = 0.00025). Mean failed projects were 0.08 among passers and 3.78 among non-passers (p = 0.00134).

Table 1. Platform engagement indicators within the inclusive group

Indicator	Pool pass group	No-pass group	Statistical result
Cumulative XP (median)	4,162	0	U = 117; p = 0.00009; r = −1.00
Completed projects (mean)	2.85	0.22	p = 0.00025
Failed projects (mean)	0.08	3.78	p = 0.00134

Source: Calculated from the inclusive learner platform-profile dataset used in the study.

Discussion

The persistence results differ from the earlier pool-to-main-track transition pattern. Among learners who had already reached the main track, the aggregate difference in deactivation between inclusive and non-inclusive groups was not statistically significant. This should not be interpreted as proof of equivalence, because the inclusive sample is small. Rather, the result indicates that the available snapshot does not provide statistical evidence of a group difference in main-track deactivation.

The contrast between cohorts 25_04 and 25_08 demonstrates why aggregate statistics require contextual interpretation. Cohort-level variation may reflect differences in learner composition, timing, organizational practice or other unmeasured factors. The administrative data cannot determine which explanation is correct. Prinsloo et al. (2024) describe learning analytics as part of a broader data ecology, a perspective that is relevant here because platform status gains meaning only when combined with contextual information.

The XP and project indicators show strong differences within the inclusive group, but they should not be treated as causal predictors. XP is generated through project activity, and project completion is itself part of progression. Consequently, the observed separation partly reflects the programme's internal logic. The indicators are useful for describing trajectories, not for claiming that XP independently causes successful progression.

Recent peer-feedback research helps explain why engagement should be treated as multidimensional. Wu and Schunn (2023) distinguish passive, active and constructive forms of engagement and show that different feedback activities provide different learning opportunities. Kerman et al. (2024) similarly emphasize the interaction between learner characteristics, environment, feedback design and technology. In a peer-to-peer coding environment, the quantity of platform activity therefore cannot fully represent the quality or accessibility of peer interaction.

For inclusive learners, this distinction is especially relevant. CAST (2024) emphasizes multiple means of interaction, expression and communication, while Khalil et al. (2024) show that learning analytics has potential to support inclusion but remains underdeveloped for disability-focused analysis. The DES data demonstrate why these perspectives matter: an active/deactivated status and an XP total can describe what is recorded on the platform, but they cannot directly measure communication accessibility, belonging, informal accommodation or the reasons behind each learner's decisions.

The study has several limitations. The inclusive population is small, the analysis covers one campus, and main-track status is observed at a single snapshot date. Comparable individual-level XP and project trajectories were not available for non-inclusive learners, preventing a direct cross-group engagement comparison. The platform's deactivation category also conflates different exit pathways. These

limitations support a cautious interpretation and strengthen the case for longitudinal tracking and qualitative interviews.

Conclusion

At the 16 May 2026 snapshot, main-track deactivation among inclusive learners was not statistically different from that of non-inclusive peers, although cohort-level outcomes varied substantially. Within the inclusive group, XP and project indicators clearly differentiated learners who passed the pool from those who did not, but these measures are descriptive and closely tied to the programme's progression structure.

The findings demonstrate the importance of measuring transition, persistence, platform engagement and exit destination separately. More precise exit coding would distinguish voluntary employment-related departure from other forms of deactivation, while longitudinal platform records across learner groups would permit stronger trajectory analysis. Accessible qualitative inquiry is also needed to explain how peer interaction, communication and informal support shape the experiences represented only indirectly in administrative telemetry.

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ARTISTIC INTERPRETATION OF CHILDHOOD TRAUMA IN KOMIL SINDAROV'S "STOLEN CHILDHOOD" AND ITS COMPARATIVE FEATURES WITH GILLIAN FLYNN'S "DARK PLACES"

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Based on the review of M. Umarova, Professor of O'zDJTU, Doctor of Philological Sciences (DSc)

Abstract

This thesis analyzes the artistic interpretation of childhood trauma in Komil Sindarov's "Stolen Childhood," its impact on the psychology of the characters, and its function within the plot and character system. The study focuses on the loss of the natural meaning of childhood under the influence of violence, fear, loss, and complex family and social circumstances. The thesis demonstrates that traumatic experiences are revealed through psychological techniques such as memory, internal conflict, retrospective depiction, dialogue, and the representation of the characters' inner experiences. The work by Komil Sindarov is also compared with Gillian Flynn's "Dark Places," identifying common features such as the impact of difficult childhood experiences on later life, the artistic function of traumatic memory, and the connection between the past and the present. At the same time, the distinctive features of the two works related to plot construction, psychological representation strategies, and national-cultural context are highlighted.

Keywords

psychological thriller, childhood trauma, psychologism, traumatic memory, psyche, internal conflict, retrospective depiction, character, comparative analysis, national-cultural context.

KOMIL SINDAROVNING “O‘G‘IRLANGAN BOLALIK” ASARIDA BOLALIK TRAVMASINING BADIIY TALQINI VA GILLIAN FLYNNNING “DARK PLACES” ROMANI BILAN QIYOSIY XUSUSIYATLARI

Rustamova Nigoraxon Asqar qizi

O’zDJTU professori, fil.f.d (DSc) M. Umarova taqrizi asosida

Annotatsiya. Mazkur tezisda Komil Sindarovning “O‘g‘irlangan bolalik” asarida bolalik travmasining badiiy talqini, uning qahramon ruhiyatiga ta’siri hamda syujet va obrazlar tizimidagi funksiyasi tahlil qilinadi. Tadqiqot markazida bolalikning zo‘ravonlik, qo‘rquv, yo‘qotish va murakkab oilaviy-ijtimoiy sharoitlar ta’sirida o‘zining tabiiy mazmunidan mahrum bo‘lishi masalasi turadi. Asarda travmatik tajriba xotira, ichki konflikt, retrospektiv tasvir, dialog va qahramonning ichki kechinmalarini ifodalash kabi psixologik tasvir vositalari orqali ochib berilishi ko‘rsatiladi. Shuningdek, Komil Sindarov asari Gillian Flynnning “Dark Places” romani bilan qiyoslanib, ikki asarda bolalikdagi og‘ir tajribaning keyingi hayotga ta’siri, travmatik xotiraning badiiy funksiyasi va o‘tmishning hozirgi zamon bilan aloqasi kabi mushtarak jihatlar aniqlanadi. Shu bilan birga, asarlarning syujet qurilishi, psixologik tasvir strategiyasi va milliy-madaniy konteksti bilan bog‘liq o‘ziga xos xususiyatlari ham ajratib ko‘rsatiladi.

Kalit so‘zlar; *psixologik triller, bolalik travmasi, psixologizm, travmatik xotira, ruhiyat, ichki konflikt, retrospektiv tasvir, obraz, qiyosiy tahlil, milliy-madaniy kontekst.*

Kirish. Bolalik inson shaxsining shakllanishi, uning ruhiy dunyosi va keyingi hayotidagi qarorlarini anglashda muhim adabiy-psixologik masalalardan biridir. Badiiy asarda bolalik tasvirining faqat xotira yoki biografik bosqich sifatida emas, balki qahramon xarakteri va ruhiy olamining shakllanishiga ta’sir ko‘rsatuvchi omil sifatida berilishi psixologik tahlil imkoniyatlarini kengaytiradi. Shu nuqtayi nazardan Komil Sindarovning “O‘g‘irlangan bolalik” asari bolalikning murakkab sharoitlar ta’sirida tabiiy mazmunidan mahrum bo‘lishini badiiy ifodalashi bilan e’tiborga loyiqdir.

Asar nomining o‘ziyoq tadqiqotning markaziy konseptini belgilaydi. “O‘g‘irlangan bolalik” birikmasi bolalik davrining beg‘uborlik, xavfsizlik va tabiiy rivojlanish bilan bog‘liq tasavvuriga zid tajribani anglatadi. Zo‘ravonlik, qo‘rquv, yo‘qotish yoki og‘ir oilaviy-ijtimoiy sharoitlar natijasida yuzaga keladigan ruhiy jarohat qahramonning keyingi hayotida ham saqlanib qolishi mumkin. Natijada o‘tmish voqealari oddiy esdalik emas, balki hozirgi ruhiy holatni belgilovchi faol omilga aylanadi.

Mazkur masalani Gillian Flynnning “Dark Places” romani bilan qiyosiy o‘rganish tadqiqotning ilmiy doirasini kengaytiradi. Ikki asarda ham bolalikdagi og‘ir tajribaning inson ruhiyatiga ta’siri, xotiraning o‘tmish va hozirgi zamonni bog‘lovchi vosita sifatidagi vazifasi hamda o‘tmish bilan yuzlashish muammosi muhim o‘rin tutadi. Shu bilan birga, ularning badiiy ifoda usullari, syujet qurilishi va milliy-madaniy konteksti bir-biridan farqlanadi.

Asosiy qism. Komil Sindarovning “O‘g‘irlangan bolalik” asarida bolalik travmasi, avvalo, qahramonning ruhiy dunyosini shakllantiruvchi omil sifatida namoyon bo‘ladi. Bolalikda boshdan kechirilgan og‘ir tajriba insonning o‘ziga, atrofidagi kishilarga va hayotga munosabatini o‘zgartirishi mumkin. Shu sababli travma asarda alohida voqea sifatida chegaralanib qolmay, qahramon xarakterining shakllanishi va uning keyingi ruhiy kechinmalarini tushuntiruvchi badiiy mexanizm vazifasini bajaradi.

Travmatik tajribaning muhim belgilaridan biri uning xotira orqali qayta namoyon bo‘lishidir. Xotira vositasida o‘tmishdagi voqealar hozirgi zamon bilan tutashadi va qahramonning bugungi ruhiy holatiga ta’sir ko‘rsatadi. Bunday usul asarda vaqtning oddiy xronologik ketma-ketligini buzib, real vaqt bilan ruhiy vaqt o‘rtasidagi munosabatni yuzaga keltiradi. O‘tmishning qayta eslanishi qahramon ruhiyatidagi tugunlarni ochishga, uning ichki qarama-qarshiliklarini ko‘rsatishga xizmat qiladi.

Asarning psixologik yo‘nalishini belgilovchi yana bir muhim jihat ichki konfliktdir. Qahramonning o‘tmish bilan munosabatida bir-biriga zid ikki ehtiyoj

yuzaga keladi: bir tomondan, og‘ir xotiralardan uzoqlashish va ularni unutish istagi mavjud bo‘lsa, ikkinchi tomondan, sodir bo‘lgan voqealarni anglash va ular bilan yuzlashish zarurati paydo bo‘ladi. Ana shu ichki qarama-qarshilik psixologik taranglikni kuchaytirib, travmaning inson ongida qanday davom etishini badiiy jihatdan ochib beradi.

Bolalik travmasini ifodalashda psixologizmning turli vositalaridan foydalaniladi. Qahramonning ichki kechinmalarini berish, dialog, retrospektiv tasvir va ruhiy holatga mos vaziyat yaratish kabi usullar travmatik tajribani tashqi hodisa sifatida emas, balki inson ongida kechadigan murakkab jarayon sifatida ko‘rsatish imkonini beradi. Shuningdek, bunday vositalar o‘quvchini voqeaning tashqi rivojidan ko‘ra qahramonning ichki holatiga yaqinlashtiradi.

“O‘g‘irlangan bolalik” konseptining yana bir muhim jihati shundaki, bolalikdagi tajriba shaxsning keyingi hayotini izohlovchi sababiy asos sifatida ishlaydi. Bunda travma faqat qahramonning zaifligi yoki iztirobini ifodalovchi belgi emas, balki uning xotirasi, qarorlari, munosabatlari va o‘zini anglash jarayoniga ta’sir etuvchi badiiy omil sifatida talqin qilinadi. Shu jihatdan asardagi psixologik tasvir travmaning davomiyligini ochishga xizmat qiladi.

Gillian Flynnning “Dark Places” romani bilan qiyoslanganda, ikki asar o‘rtasida bir qator mushtarak poetik xususiyatlar ko‘zga tashlanadi. Avvalo, har ikki asarda bolalikdagi og‘ir tajriba qahramonning keyingi hayotini anglash uchun muhim kalit vazifasini bajaradi. O‘tmish hozirgi zamondan uzilgan alohida davr emas, balki qahramonning bugungi ruhiy holatida qayta namoyon bo‘ladigan tajriba sifatida tasvirlanadi. Shu sababli xotira ikki asarda ham syujet va psixologik tasvirni birlashtiruvchi vositalardan biri hisoblanadi.

Qiyosiy jihatdan yana bir muhim nuqta — travma va ichki konflikt o‘rtasidagi bog‘liqlikdir. O‘tmishdagi voqealar qahramonning ichki dunyosida qarama-qarshi kechinmalarni yuzaga keltiradi. Travmatik xotirani unutish, undan qochish yoki

aksincha, uning mohiyatini anglash va haqiqat bilan yuzlashish ehtiyoji psixologik taranglikni shakllantiradi. Shu ma'noda ikki asarda ham travma syujetning rivojiga bevosita yoki bilvosita ta'sir qiluvchi omil sifatida namoyon bo'ladi.

Xulosa. Komil Sindarovning "O'g'irlangan bolalik" asarida bolalik travmasi qahramon ruhiyatini shakllantiruvchi, uning hayotiy tajribasi va ichki kechinmalarini belgilovchi muhim badiiy omil sifatida namoyon bo'ladi. Travmatik tajriba xotira, ichki konflikt, retrospektiv tasvir va psixologik tasvir vositalari orqali ochib berilib, bolalik davrining inson shaxsiyati rivojidagi ahamiyatini chuqurroq yoritadi.

"Dark Places" bilan qiyosiy tahlil ikki asarda bolalikdagi og'ir tajribaning keyingi hayotga ta'siri, xotiraning badiiy funksiyasi va o'tmishning hozirgi zamon bilan bog'liqligi kabi umumiy jihatlar mavjudligini ko'rsatadi. Shu bilan birga, syujet qurilishi, psixologik tasvir strategiyasi va milliy-madaniy kontekstning farqlanishi travmaning badiiy talqinida o'ziga xoslikni yuzaga keltiradi. Shunday qilib, bolalik travmasi har ikki asarda ham qahramon ruhiyatini ochishning muhim vositasi bo'lsa-da, uning poetik ifodasi muallifning individual badiiy strategiyasi va tegishli adabiy muhit bilan belgilanadi.

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ANALYSIS OF TRADITIONAL TEACHING METHODS FOR CHILDREN WITH DISABILITIES

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Abstract

This paper analyzes traditional forms, methods, and technologies for educating young people with disabilities. It emphasizes the necessity of creating favorable conditions for the development of each child, taking into account their individual educational needs and abilities. An innovative educational approach is proposed—one that requires a specialized approach to the teaching and learning process and is flexibly oriented toward meeting diverse educational needs. Such an approach serves to reduce discrimination by enabling children to interact with one another and learn to understand and accept differences.

Keywords

disability, pedagogical technologies, educational discussion, psychological development, regulation and correction, individual, methodology, intellectual, emotional, and physical development.

IMKONIYATI CHEKLANGAN BOLALARNI O‘QITISHNING AN’ANAVIY METODLARI TAHLILI

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Annotatsiya: Imkoniyati cheklangan yoshlarni o‘qitishning an’anaviy shakllari, metodlari va texnologiyalari tahlil qilinadi. Har bir bolaga uning individual ta’lim ehtiyojlari va qobiliyatlarini hisobga olgan holda rivojlanish uchun qulay shart-sharoit yaratish zarurligi ta’kidlanadi. O‘qitish va ta’lim jarayoniga alohida yondashuvni talab

etadigan, turli ta’lim ehtiyojlarini qondirishga moslashuvchan yo‘naltirilgan innovatsion ta’lim taklif etiladi. Bunday yondashuv bolalarning bir-biri bilan muloqot qilishi, farq-larni anglash va qabul qilishni o‘rganishi orqali kamsitishni kamaytirishga xizmat qiladi.

Kalit so‘zlar: imkoniyati cheklanganlik, pedagogik texnologiyalar, o‘quv munozarasi, psixologik rivojlanish, tartibga solish va korreksiya, individ, metodologiya, intellektual, emotsional va jismoniy rivojlanish.

АНАЛИЗ ТРАДИЦИОННЫХ МЕТОДОВ ОБУЧЕНИЯ ДЕТЕЙ С ОГРАНИЧЕННЫМИ ВОЗМОЖНОСТЯМИ ЗДОРОВЬЯ

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Аннотация. В статье анализируются традиционные формы, методы и технологии обучения детей с ограниченными возможностями здоровья. Подчеркивается необходимость создания благоприятных условий для развития каждого ребенка с учетом его индивидуальных образовательных потребностей и способностей. Предлагается инновационный образовательный подход, требующий специализированной организации процесса обучения и гибкой ориентации на удовлетворение разнообразных образовательных потребностей. Такой подход способствует снижению уровня дискриминации, позволяя детям в-заимодействовать друг с другом, а также учиться понимать и принимать различия.

Ключевые слова: ограниченные возможности здоровья, педагогические технологии, образовательная дискуссия, психологическое развитие, регуляция и коррекция, индивидуальность, методология, интеллектуальное, эмоциональное и физическое развитие.

Kirish. Ta’lim jarayonini shaxsga yo‘naltirishga asoslangan texnologiyalar. Pedagogik texnologiyalarning ushbu guruhi shaxs xususiyatlariga, uni insonning tabiiy

qobiliyatlariga muvofiq shakllantirish va rivojlantirishga, bolalar imkoniyatlarini maksimal darajada ro‘yobga chiqarishga yo‘naltirilganligi bilan tavsiflanadi. U bolaga insonparvar-shaxsiy yondashuvni amalga oshiradigan, faollashtiruvchi va rivojlantiruvchi didaktik majmuani qo‘llaydigan hamda atrof-muhitning pedagogik imkoniyatlaridan foydalanadigan hamkorlik pedagogikasi texnologiyalari bilan ifodalanadi. Mazkur texnologiyalar asosidagi ish o‘quvchilarning pedagogik jarayonga chuqur kirishishini, pedagogik jarayon ishtirokchilari o‘rtasidagi insonparvar-shaxsiy va individual yondashuvga asoslangan o‘zaro munosabat xususiyatlarini bevosita his etishini ta’minlaydi.

O‘quvchilar faoliyatini faollashtirish va jadallashtirishga qaratilgan pedagogik texnologiyalar ta’lim jarayonida bolaning faolligi tamoyilini amalga oshiradi, bilim va ko‘nikmalarni o‘zlashtirishga motivatsiya hamda ongli ehtiyojni shakllantiradi, o‘quvchilar, ularning ota-onalari va ijtimoiy muhit talablariga moslikni ta’minlaydi.

Ushbu texnologiyalar guruhiga maktab pedagoglari amaliyotida qo‘llaydigan o‘yin texnologiyalari, muammoli ta’lim va kommunikativ texnologiya elementlari kiradi.

O‘yin texnologiyalari (asosan bilishga oid va ishbilarmonlik o‘yinlari) ta’limning barcha bosqichlarida keng qo‘llanadi, chunki ular katta avlod tajribasini uzatishning universal vositasi hisoblanadi. O‘yin faoliyati tuzilmasiga maqsad qo‘yish, rejalashtirish, maqsadni amalga oshirish va natijalarni tahlil qilish tabiiy ravishda kiradi hamda shaxs o‘zini faoliyat subyekti sifatida namoyon etadi. Muammoli ta’lim - o‘qituvchi rahbarligida muammoli vaziyatlarni yaratish va ularni hal etishda o‘quvchilarning faol, mustaqil faoliyatini tashkil etishga asoslangan o‘quv mashg‘ulotlaridir. Natijada bilim, ko‘nikma va malakalar ijodiy o‘zlashtiriladi hamda o‘quvchilarning fikrlash qobiliyatlari rivojlanadi. Muammoli ta’lim kompetentlikka erishish, o‘quv va hayotiy vazifalarni hal qilishga tayyorgarlik ko‘rish yo‘lidagi muhim tayyorlov bosqichidir.

Axborot (kompyuter) texnologiyalari axborot bilan ishlash ko‘nikmalarini rivojlantiradi, o‘quvchilarning kommunikativ qobiliyatlarini oshiradi, tadqiqotchilik ko‘nik-

malari va maqbul qarorlar qabul qilish malakasini shakllantiradi, har bir o‘quvchiga o‘zi uchun qulay sur’at va mazmunda ishlash imkonini beradi. Shu orqali o‘quvchilar axborot jamiyatida yashashga va kasbiy ta’lim dasturlarini o‘zlashtirishga tayyorlanadi.

Uyda ta’lim olayotgan imkoniyati cheklangan o‘quvchilar uchun individual o‘quv rejasi tuzilishi mumkin. Individual o‘quv rejasi (IOR) - umumta’lim tashkilotining federal bazaviy o‘quv rejasi asosida tuzilgan o‘quv rejasidan imkoniyati cheklangan o‘quvchi tomonidan o‘zlashtirish uchun tanlangan fanlar (kurslar) majmuasidir. U ta’lim variativligini saqlagan holda standart talablariga erishish imkonini ta’minlaydi.

Imkoniyati cheklangan bolalarni o‘qitishning asosiy bosqichlari:

1. Imkoniyati cheklangan bolalar to‘g‘risidagi ma’lumotlarni yig‘ish va tahlil qilish (psixolog, ijtimoiy pedagog, hamshira va sinf rahbari):

- bolalarning rivojlanishi va ta’lim xususiyatlarini hisobga olish uchun o‘quvchilar kontingentini baholash;

- qobiliyat va ehtiyojlarni aniqlash;

- ta’lim muhitining dasturiy-metodik ta’minot, maktabning moddiy-texnik va kadrlar bazasi talablariga muvofiqligini baholash.

2. Faoliyatni rejalashtirish, tashkil etish va muvofiqlashtirish (ma’muriyat, psixolog, uslubiy birlashma rahbari, fan o‘qituvchilari):

- imkoniyati cheklangan bolalar uchun ta’lim jarayonini tashkil etish;

- imkoniyati cheklangan bolalarni turli mutaxassislar va pedagoglar tomonidan maxsus qo‘llab-quvvatlashni ta’minlash;

- ishchi dasturlarni ishlab chiqish.

3. Qulay va to‘siqsiz muhit yaratish uchun moddiy-texnik bazani tayyorlash (ma’muriyat, xo‘jalik mudiri):

- har bir o‘quv xonasida nogironligi bo‘lgan shaxslar uchun qo‘shimcha yoritish va aloqa-axborot tizimlari bilan jihozlangan 1–2 ta joy tashkil etish;

- maxsus dasturlanadigan klaviatura bilan jihozlangan korreksion-rivojlantiruvchi dasturiy majmuani xarid qilish;

- sport zali va sport maydonchasini nogironligi bo‘lgan shaxslar uchun modulli jihozlar to‘plami bilan ta’minlash;

- kutubxonani nogironligi bo‘lgan shaxslar uchun maxsus adaptiv-texnik vositalar bilan jihozlash;

- imkoniyati cheklangan bolalar uchun qulay shart-sharoit yaratish, dam olish va kutish zonalarini jihozlash.

3. Diagnostika va nazorat (ma’muriyat):

- yaratilgan sharoitlar va tanlangan ta’lim dasturlarining bolaning alohida ta’lim ehtiyojlariga muvofiqligini diagnostika qilish;

- ta’lim dasturlarini o‘zlashtirish natijalarini nazorat qilish;

- o‘quvchilar tayyorgarligini nazorat va diagnostika qilish, uning amaldagi ta’lim standartlari talablariga muvofiqligini baholash.

4. Tartibga solish va tuzatish (ma’muriyat, psixolog, fan o‘qituvchilari):

- ta’lim jarayoni va imkoniyati cheklangan bolalarni qo‘llab-quvvatlash jarayoniga zarur o‘zgartirishlar kiritish;

- ta’lim sharoitlari va shakllarini, ish metodlari va usullarini tuzatish.

Bolalarda tabiiy-ilmiy bilimlar asoslarini shakllantirish dunyoning yaxlit manzarasini tarkib toptirishga yordam beradi. Dialektik tafakkur uchun zarur shart-sharoitlarni rivojlantirish, bolalarda jonli va jonsiz tabiat haqidagi asosiy tabiiy-ilmiy tasavvur va tushunchalarni shakllantirish, atrofdagi obyektlar bilan tanishtirish asosida tabiatga insonparvar va g‘amxo‘r munosabatni tarbiyalash, atrof-muhitga emotsional-axloqiy hamda amaliy munosabatni rivojlantirish lozim.

O‘qitish metodi - o‘qituvchi va o‘quvchilar o‘rtasidagi o‘zaro hamkorlik jarayoni bo‘lib, uning natijasida ta’lim mazmunida nazarda tutilgan bilim, ko‘nikma va malakalar

uzatiladi va o‘zlashtiriladi. O‘qitish usuli - muayyan bilim, ko‘nikma yoki malakani berish va o‘zlashtirishga qaratilgan o‘qituvchi bilan o‘quvchilar o‘rtasidagi qisqa muddatli o‘zaro hamkorlikdir.

An’anaviy metodlarning maqsadi o‘quvchiga yangi bilimlarni yetkazish va muayyan fan bo‘yicha dolzarb axborotni taqdim etishdir. Bunday metodlar o‘qituvchining axborotli-illyustrativ faoliyati hamda o‘quvchining reproduktiv faoliyatiga asoslanadi.

An’anaviy o‘qitish metodlariga ma’ruza, hikoya, tushuntirish, suhbat, munozara, kitob bilan ishlash, namoyish, mashqlar, o‘zaro o‘qitish, laboratoriya ishi, amaliyot va mustaqil ish kiradi.

Ma’ruza o‘quv materialini og‘zaki bayon etish metodi bo‘lib, amaliy yoki nazariy muammolarni keng va izchil tarzda so‘z orqali yoritishni nazarda tutadi.

Ma’ruza o‘qish uchun o‘qituvchi bayon qilayotgan muammoni yaxshi bilishi va yetarli pedagogik tajribaga ega bo‘lishi kerak.

Ma’ruzalar o‘quv jarayonining mazmuni va xarakteriga ko‘ra bir necha turlarga bo‘linadi. Mazmuniga ko‘ra: kirish ma’ruzasi, sharhlovchi ma’ruza, epizodik ma’ruza. O‘quv jarayoni xarakteriga ko‘ra: axborot ma’ruzasi va muammoli ma’ruza.

Hikoya faktik ma’lumotlarni tavsif yoki bayon shaklida yetkazishning alohida ko‘rinishidir. Hikoyada mavzu va taqdim etilayotgan faktlarni bayon qilishga, ko‘rgazmali ta’lim vositalaridan foydalanishga hamda o‘quvchilarni mustaqil umumlashtirish va xulosalar chiqarishga yo‘naltirishga alohida e’tibor qaratish lozim [1].

Hikoya metodidan barcha yoshdagi o‘quvchilar bilan ishlashda foydalanish mumkin, biroq u boshlang‘ich maktab yoshidagi bolalarni o‘qitish va rivojlantirishda ayniqsa samarali bo‘ladi. Chunki bu davrda bolalar ko‘plab faktik ma’lumotlarni to‘playdi va obrazli-abstrakt tafakkurga ko‘proq moyil bo‘ladi.

Hikoya metodini illyustratsiyalar bilan birgalikda qo‘llash uning samaradorligini oshiradi. Bu ayniqsa maktabgacha yoshdagi bolalarda mashg‘ulot mavzusiga e’tiborni

maksimal darajada jamlash uchun muhimdir. Hikoya og‘zaki ta’limning eng emotsional metodlaridan biri hisoblanadi. Odatda u bolaga kuchli ta’sir ko‘rsatadi, chunki pedagog hikoya qilayotgan voqealarga o‘z munosabatini ham singdiradi. Masalan, o‘qituvchi ushbu metoddan xona o‘simliklarining yovvoyi o‘simliklardan farqlanish sabablari, uzoq geografik hududlardagi tabiat tafovutlari va boshqa mavzularni tushuntirishda foydalanadi. Suhbat eng qadimgi o‘qitish metodlaridan biri bo‘lib, undan qadimgi yunon faylasuflari ham foydalangan.

Ushbu metodning ijobiy jihatlari quyidagilardan iborat:

o‘quvchi fikrini yo‘naltiradi va uni o‘qituvchining fikrlash yo‘nalishini kuzatishga undaydi;

fikrlash jarayonini faollashtiradi;

bilim yoki ko‘nikmalar qay darajada sifatli o‘zlashtirilganini tekshirishning samarali vositasi bo‘lib xizmat qiladi;

o‘quvchilarning bilish qobiliyatini rivojlantiradi.

Suhbatlar maqsadiga ko‘ra turlicha bo‘lishi mumkin. Suhbatning bir necha turi mavjud. Kirish suhbati mashg‘ulot boshlanishidan oldin o‘tkazilib, bolalarning avvalgi bilim darajasi va kelgusi mashg‘ulot vazifasini qanday tushunayotganini aniqlash imkonini beradi. Axborot beruvchi suhbat bolalarga yangi bilimlarni yetkazishda qo‘llanadi. Nazorat-korreksion suhbat bilimlarni diagnostika qilish yoki ularni to‘ldirish, aniqlashtirish va rivojlantirish zarur bo‘lganda ishlatiladi.

Suhbat jarayonida o‘qituvchi suhbat mazmuni va maqsadini puxta o‘ylab chiqishi, shuningdek, savollar tizimini tuza olishi va ularni to‘g‘ri shakllantirishi kerak. Amaliyot shuni ko‘rsatadiki, o‘qituvchi bergan savollar o‘quvchilarni fikrlash, taqqoslash va qiyoslashga undasa, suhbat jarayoni eng faol va qiziqarli kechadi.

Maktabgacha va maktab yoshidagi bolalar bilan suhbatni rivojlantirishda yo‘naltiruvchi savollardan foydalanish lozim. Bolalarning oldindan egallagan bilim

darajasi turlicha bo‘ladi, ammo pedagogning vazifasi suhbatni shunday tashkil etishdan iboratki, har bir bolaning fikri inobatga olinsin va mashg‘ulot mohiyati tushunarli yetkazilsin. Masalan, «Tabiatdagi qishki o‘zgarishlar» mavzusini o‘rganishda quyidagi savollar berilishi mumkin: qish kelganining qanday belgilarini bilasiz? Qishning qanday asosiy belgilarini kuzatgansiz? Qishning kuzdan asosiy farqi nimada?

Tushuntirish - muayyan hodisa, jarayon yoki faktning mazmunini ochib berishdan iborat. Tushuntirish, asosan, muayyan fanlarning nazariy asoslari o‘rganilganda, tabiiy hodisalar hamda insonning ijtimoiy-madaniy faoliyatidagi asosiy sabab va oqibatlar ochib berilganda qo‘llanadi.

Tushuntirishda mulohaza yuritish va dalillash usullari asosiy o‘rin tutadi, chunki u faqat «Bu nima?» degan savolga javob berish bilan cheklanmay, «Nima uchun?», «Qanday?», «Nega?» kabi savollarni ham izohlashni nazarda tutadi. Shu bilan birga, o‘qituvchi mantiqiylik, aniqlik, qisqalik hamda tushuncha va xulosalarni ravshan ifodalash tamoyillariga rioya qilishi kerak [1,5].

Tushuntirish metodi barcha yosh guruhidagi o‘quvchilar bilan ishlashda qo‘llanadi. Maktabgacha yoshdagi bolalarga bu metod imkon qadar sodda va bosqichma-bosqich taqdim etilishi lozim. Mashg‘ulot materiali aniq va ravshan bayon qilinib, har bir mayda jihat yetarli darajada tushuntirilishi kerak, shunda bolada to‘g‘ri tasavvur shakllanadi.

O‘quv munozarasi bilishga bo‘lgan qiziqishni rag‘batlantirish maqsadida muayyan ekologik muammo yuzasidan fikr almashishdir. Samarali o‘quv munozarasining asosiy sharti - o‘quvchilarni mazmuniy va tashkiliy jihatdan oldindan tayyorlashdir. Mazmuniy tayyorgarlik munozara mavzusi bo‘yicha zarur axborotni to‘plashga, tashkiliy tayyorgarlik esa ushbu axborotni qanday shaklda bayon qilishni belgilashga asoslanadi.

O‘quv munozarasi metodidan foydalanish o‘quvchilarda fikrlarni aniq va ravshan bayon etish, savollarni to‘g‘ri shakllantirish va obyektiv dalillar keltirish qobiliyatini rivojlantiradi.

Kitob bilan ishlash ta’lim metodi sifatida o‘quvchilarni darslik tuzilmasi bilan tanishtirish, uni ko‘zdan kechirish, ayrim qismlarini o‘qish, axborotni o‘rganish, savollarga javob izlash, topshiriq va testlarni bajarish, masala va misollarni yechish hamda o‘quv materialini yod olish uchun qo‘llanadi.

Kitob bilan ishlash samaradorligiga ta’sir etuvchi omillar qatorida ravon o‘qish ko‘nikmasi, o‘qilgan ma’lumotni tushunish, asosiy va ikkilamchi jihatlarni ajrata olish, konspekt tuzish, mantiqiy va tarkibiy sxemalar yaratish hamda mavzu bo‘yicha adabiyotlarni tanlash qobiliyati alohida ahamiyatga ega [5].

Namoyish juda muhim metod hisoblanadi. U ko‘rsatish metodi deb ham ataladi. Ushbu metod o‘rganilayotgan ekologik obyekt, tabiiy jarayon yoki hodisalar haqida o‘quvchilarda ko‘rgazmali tasavvur hosil qilishga mo‘ljallangan. U turli yoshdagi bolalarni o‘qitishda qo‘llanishi mumkin.

O‘rganilayotgan mavzu mazmuni va o‘quvchilar faoliyati usullariga qarab namoyishning turli ko‘rinishlaridan foydalaniladi:

o‘rganilayotgan harakat yoki usulni shaxsan ko‘rsatish;

real obyektlar: asboblar, materiallar, jihozlar va boshqalarni ko‘rsatish;

tasviriy namoyish vositalarini ko‘rsatish;

videomateriallarni namoyish etish.

Bunda quyidagi didaktik tamoyil doimo hisobga olinishi kerak: namoyish me’yorida qo‘llanishi lozim. Ko‘rsatish jarayonining samaradorligi obyektlarni to‘g‘ri tanlashga hamda o‘qituvchining o‘quvchilar e’tiborini namoyish etilayotgan narsaning asosiy jihatlariga yo‘naltira olishiga bog‘liq. Namoyish illyustratsiya metodi bilan chambarchas bog‘liq. Illyustratsiya - hodisa, jarayon va obyektlarni, shuningdek, ularning ramziy shakldagi tasvirini ko‘rsatishdir. Bu rasmlar, sxemalar, grafiklar, chizmalar, fotosuratlar, xaritalar va boshqalar orqali amalga oshiriladi [1,6]. Ushbu ikki metod o‘zaro bog‘liq holda qo‘llanib, bir-birining ta’sirini to‘ldiradi va kuchaytiradi.

Pedagogik faoliyatga kompyuterlar, videotexnika, proyektorlar va boshqa vizual axborot vositalari kirib kelishi natijasida videometod deb ataladigan alohida o‘qitish metodini ajratish imkoniyati paydo bo‘ldi. U axborotni taqdim etish bilan birga uni nazorat qilish, tizimlashtirish, umumlashtirish, takrorlash va mustahkamlash uchun ham mo‘ljallangan [2,8].

Videometod boshqa metodlarga nisbatan pedagogik faoliyatni tashkil etishga yuqoriroq talab qo‘yadi: u yanada maqsadga muvofiq, puxta o‘ylangan va aniq bo‘lishi kerak.

Mashq - zarur ko‘nikma va malakalarni shakllantirishga qaratilgan amaliy yoki aqliy harakatlarni takrorlashdir.

Mashqlarni didaktik vazifasiga ko‘ra tasniflash:

kirish mashqlari - amaliy namoyishdan keyin bajarilib, ko‘rsatilgan harakatlarning ayrim qismlarini to‘g‘ri bajarishga erishishga qaratiladi;

asosiy mashqlar - muayyan harakatlarni talab etilgan darajaga yetkazish va tegishli ko‘nikmalarni shakllantirish uchun qo‘llanadi;

mashq qildirish mashqlari - mavjud ko‘nikmalarni saqlab turish va malakalarni yuqori darajada ushlab turishga qaratiladi.

Shuningdek, mashqlar maxsus (ko‘p marotaba takrorlanib, ko‘nikma va malakalarni shakllantirishga qaratilgan), hosilaviy (ilgari shakllangan ko‘nikma va malakalarni takrorlash hamda mustahkamlashga yordam beradigan maxsus mashqlar) va izohli (o‘quv jarayonini faollashtirish hamda o‘quvchilarning topshiriqlarni ongli bajarishini ta’minlashda qo‘llanadigan) turlarga bo‘linadi [3].

Mashqlar quyidagilarga bo‘linadi:

og‘zaki mashqlar;

yozma mashqlar;

grafik mashqlar;

laboratoriya-amaliy mashqlar;

ishlab chiqarish-mehnat mashqlari.

Mashqlarning samaradorligi ularning muayyan talablarga javob berishiga bog‘liq: o‘quvchilar o‘z faoliyati sifatini ongli ravishda yaxshilashga yo‘naltirilganmi, zarur harakatlarni bajarish qoidalarini biladimi, mashqlarni bajarish sharoitlari nazorat qilinadimi, o‘quvchilar yutuqlari hisobga olinadimi, takrorlashlar amalga oshiriladimi va ular orasidagi vaqt oralig‘i qanday? O‘zaro o‘qitish - o‘quvchilarning o‘zaro hamkorligiga asoslangan o‘ziga xos ta’lim metodidir. Bunda ularning nazariy bilimlari, amaliy tayyorgarligi va qobiliyatlaridagi farqlar muhim ahamiyatga ega. Metodning mohiyati shundaki, o‘quvchilar asosiy va qo‘shimcha ma’lumotlar bilan o‘zaro almashadilar, birgalikda ko‘nikma va malakalarni mashq qiladilar hamda materialni qay darajada puxta o‘zlashtirganliklarini tekshiradilar [4,5].

O‘zaro o‘qitish juftlikda, guruhda yoki jamoaviy shaklda tashkil etilishi mumkin. U turli yoshdagi o‘quvchilar bilan ishlashda qo‘llanishi mumkin, biroq ta’limning yuqori bosqichlarida ayniqsa samarali bo‘ladi.

Laboratoriya ishi metodi o‘quvchilarning turli tadqiqot va tajribalarni mustaqil o‘tkazishiga asoslanadi. Laboratoriya ishlari individual yoki guruhli bo‘lishi mumkin.

Laboratoriya metodi orqali o‘quvchilar asbob-uskunalar bilan ishlash ko‘nikma va malakalarini egallaydilar. Shuningdek, bu metod o‘rganish usullarini tanlash, natijalarni tekshirish va qayta ishlash, hisoblash, o‘lchash kabi muhim amaliy ko‘nikmalarni shakllantirish uchun qulay muhit yaratadi.

Laboratoriya metodini to‘g‘ri qo‘llash uchun maxsus jihozlar, o‘qituvchi va o‘quvchilarning tayyorgarligi hamda yetarli vaqt va kuch resurslari talab etiladi [6].

Amaliy ish metodi laboratoriya metodidan nazariy bilimlarni amaliy topshiriqlarni hal etishda qo‘llashi bilan farq qiladi. Nazariyani amaliyotga tatbiq etish ko‘nikmasi ushbu metodning asosiy jihatidir.

Amaliy metod bilimlarni chuqurlashtirish va ko‘nikmalarni takomillashtirishga, bilish faoliyatini rag‘batlantirishga hamda nazorat va korreksion xarakterdagi vazifalarni hal etishga yordam beradi [7].

Amaliy ish metodidan turli yoshdagi o‘quvchilar ta’limida foydalanish mumkin, ammo topshiriqlar ularning qobiliyatlari va yosh xususiyatlariga mos bo‘lishi muhimdir. Maktabgacha yoshdagi bolalar uchun amaliy ishlar ayniqsa dolzarb, chunki materialni o‘zlashtirish uchun faqat og‘zaki tushuntirish yetarli bo‘lmasligi mumkin. Qo‘l motorikasi faol ishlaganda ko‘rish va sezish xotirasi ham rivojlanadi, bu esa mashg‘ulot materialini yaxshiroq o‘zlashtirishga yordam beradi. Masalan, «Ignabarg nima?» amaliy ishida bolalar ignabargli daraxt shoxchalarini ko‘radilar va ushlab ko‘radilar.

Mustaqil ish - o‘quvchilarning nazariy manbalarni individual o‘rganishi, shuningdek, zarur harakat va usullarni mustaqil mashq qilishi orqali bilim va ko‘nikmalarni egallashga qaratilgan o‘qitish metodidir.

Mustaqil ish o‘qitishning eng muhim metodlaridan biri va boshqa barcha metodlarning asosi, shuningdek, ular o‘rtasidagi didaktik bog‘liqlikni ta’minlovchi vositadir [8].

Mustaqil ish har qanday yoshdagi o‘quvchilar ta’limida pedagogik jarayonning bir qismi bo‘lishi kerak, biroq ularning aqliy va intellektual salohiyati hamda individual imkoniyatlaridan ortiq yuklama bermasligi lozim.

Sanab o‘tilgan barcha metodlar maktabning boshlang‘ich sinflaridan boshlab, keyinchalik texnikum, bilim yurti, institut, universitet va boshqa ta’lim muassasalarida qo‘llanadi. Biroq ta’lim sohasi ham inson faoliyatining boshqa sohalari kabi bir joyda turmaydi. Doimiy ravishda yanada samarali va ta’lim jarayonini yengillashtiruvchi innovatsion o‘qitish metodlari paydo bo‘lmoqda [9].

Xulosa. Ta’lim jarayonida metod pedagog va o‘quvchilarning muayyan o‘quv-tarbiyaviy maqsadlarga erishishga qaratilgan o‘zaro bog‘liq faoliyatini tartibli tashkil

etish usuli, o‘quvchilarning o‘quv-bilish faoliyatini tashkil qilish vositasi sifatida namoyon bo‘ladi. Har bir o‘qitish metodidan foydalanish odatda turli usul va vositalar bilan birga kechadi. Bunda o‘qitish usuli metodning elementi yoki tarkibiy qismi, ta’lim vositalari esa o‘qituvchi o‘quv jarayonini amalga oshirishda foydalanadigan barcha materiallardir.

An’anaviy o‘qitish metodlari mustaqil fikrlash, yangi vaziyatda yo‘l topish, muammolarni hal qilishning o‘z usullarini topish va auditoriya bilan ishchan aloqalar o‘rnatish ko‘nikmalarini rivojlantirish uchun zarur sharoit yaratadi.

O‘quv jarayonida turli metodlardan foydalanish natijasida o‘quvchilarning bilish jarayoniga emotsional munosabati, o‘quv faoliyatiga motivatsiyasi hamda yangi bilim va ko‘nikmalarni egallash va ularni amaliy qo‘llashga qiziqishi ortadi. Bu o‘quvchilarning ijodiy qobiliyatlari, og‘zaki nutqi, o‘z nuqtai nazarini shakllantirish va bayon etish ko‘nikmalarini rivojlantiradi hamda tafakkurni faollashtiradi.

Shunday qilib, o‘quv ishlari tizimida yuqorida ko‘rib chiqilgan bilimlarni tekshirish va baholash metodlarining barchasi o‘z o‘rnida qo‘llanishi lozim. Bu o‘quvchilarning o‘zlashtirish sifatini nazorat qilishda zarur tizimlilik va chuqurlikni ta’minlaydi.

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ORGANIZING THE ACADEMIC DEVELOPMENT TRAJECTORY OF PRIMARY SCHOOL STUDENTS BASED ON ACCELERATED AND ENRICHED EDUCATION

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Abstract

This thesis discusses the organization of primary school students' academic development trajectories through accelerated and enriched education. The approach is intended for the whole class rather than only for pupils pre-identified as gifted. It proposes a dynamic learning trajectory based on diagnosing current readiness, ensuring core learning outcomes, providing more complex and advanced content when a learner is ready, and offering scaffolded support when difficulties occur. Since the empirical study is still in progress, no final effectiveness claims are made; the focus is on the methodological mechanism and monitoring criteria.

Keywords

accelerated education, enrichment, academic potential, academic development trajectory, primary education, differentiation, diagnostics, monitoring.

BOSHLANG‘ICH SINF O‘QUVCHILARINING AKADEMIK RIVOJLANISH TRAYEKTORIYASINI TEZLASHTIRILGAN VA BOYITILGAN TA’LIM ASOSIDA TASHKIL ETISH

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Annotatsiya. Ushbu tezisda boshlang‘ich sinf o‘quvchilarining akademik rivojlanish trayektoriyasini tezlashtirilgan va boyitilgan ta’lim asosida tashkil etish masalasi yoritiladi. Yondashuv alohida iqtidorli o‘quvchilarni saralashga emas, balki

boshlang‘ich tayyorgarligi va o‘zlashtirish sur’ati turlicha bo‘lgan butun sinf o‘quvchilarini qamrab olishga qaratilgan. O‘quvchining joriy tayyorgarligini diagnostika qilish, bazaviy natijani ta’minlash, tayyor bo‘lgan o‘quvchiga murakkablashtirilgan va yuqori bosqich mazmuniga olib boruvchi topshiriqlar berish, qiyinchilik kuzatilgan o‘quvchiga esa bosqichli tayanch yaratish asosida dinamik o‘quv trayektoriyasi taklif etiladi. Tajriba-sinov hali yakunlanmaganligi sababli tezisda samaradorlik bo‘yicha yakuniy da’volar berilmaydi; asosiy e’tibor modelning metodik mexanizmi va monitoring mezonlariga qaratiladi.

Kalit so‘zlar: tezlashtirilgan ta’lim, boyitilgan ta’lim, akademik salohiyat, akademik rivojlanish trayektoriyasi, boshlang‘ich ta’lim, differensiallashtirish, diagnostika, monitoring.

Kirish

Boshlang‘ich sinfda o‘quvchilarning bilim darajasi, o‘zlashtirish sur’ati, mustaqilligi va murakkab topshiriqlarni bajarishga tayyorligi bir xil bo‘lmaydi. Shu sababli faqat sinf uchun belgilangan yagona o‘rtacha sur’atga tayanish ayrim o‘quvchilar uchun ortiqcha takrorlashga, boshqalari uchun esa yetarli tayanch bo‘lmasligiga olib kelishi mumkin. Mazkur muammoni hal etishda o‘quvchini doimiy ravishda “kuchli” yoki “sust” guruhga ajratishdan ko‘ra, uning joriy holatini muntazam aniqlab, keyingi pedagogik qadamni shu holatga mos belgilash muhim.

Xalqaro tadqiqotlarda tezlashtirishning akademik natijalarga ijobiy ta’siri qayd etilgan. K–12 ta’lim bo‘yicha ikkinchi darajali meta-tahlilda tezlashtirilgan o‘quvchilar bir yoshdagi tezlashtirilmagan tengdoshlaridan yuqori akademik natija ko‘rsatgani, tezlashtirishning umumiy akademik ta’siri esa ijobiy bo‘lgani aniqlangan [1]. Biroq bunday dalillarning katta qismi yuqori qobiliyatli o‘quvchilar bilan bog‘liq. Mazkur tezisning metodik yo‘nalishi esa tezlashtirish va boyitish tamoyillarini butun sinfda moslashuvchan qo‘llash imkoniyatiga qaratiladi.

Akademik rivojlanish trayektoriyasining metodik mazmuni

Akademik rivojlanish trayektoriyasi deganda o‘quvchining ma’lum vaqt oralig‘ida boshlang‘ich holatdan keyingi, murakkabroq o‘quv natijalariga tomon harakatini ifodalovchi dinamik pedagogik yo‘l tushuniladi. Ushbu trayektoriya oldindan qat’iy belgilangan “tez” yoki “sekin” yo‘l emas. O‘quvchi bir mavzuda yuqori tayyorgarlik namoyish etib tezlashtirilgan topshiriqqa o‘tishi, boshqa mavzuda esa tayanch yordamga ehtiyoj sezishi mumkin.

Taklif etilayotgan yondashuvning markaziy tamoyili — “umumiy yuqori maqsad, individual pedagogik yo‘l”. Barcha o‘quvchilar bazaviy o‘quv natijalarini egallashi kerak, biroq bu natijaga yetish uchun zarur vaqt, yordam va topshiriq murakkabligi farqlanishi mumkin. Bazaviy mazmunni ishonchli va mustaqil egallagan o‘quvchi uchun bir xil turdagi mashqlarni ko‘paytirish o‘rniga, mazmunni chuqurlashtiruvchi yoki keyingi bosqichga ko‘prik yaratadigan vazifalar taklif etiladi.

Bu nuqtada tezlashtirish yuqori sinf dasturini mexanik ravishda oldindan o‘qitish sifatida talqin qilinmaydi. U o‘quvchi zarur tayyorgarlikni namoyish qilgan holatda takroriy faoliyatni ixchamlashtirish, murakkablikni oshirish va keyingi tushunchalarga nazoratli o‘tishni anglatadi. Boyitish esa o‘quv materialini ko‘paytirish emas, balki uni chuqurlashtirish: muammoni bir necha usulda yechish, sababni asoslash, yangi vaziyatga qo‘llash, fanlararo bog‘lanish o‘rnatish va kichik tadqiqot vazifalarini bajarish orqali amalga oshiriladi.

Trayektoriyani tashkil etish bosqichlari

Birinchi bosqich — diagnostika. O‘quvchining faqat yakuniy javobi emas, balki topshiriqni tushunishi, mustaqilligi, yechimni izohlashi, bilimni yangi vaziyatga ko‘chira olishi va bajarish sur’ati kuzatiladi. Diagnostika baho qo‘yish vositasi emas, keyingi topshiriq va yordam darajasini tanlash vositasi sifatida ishlatiladi.

Ikkinchi bosqich — bazaviy natijani mustahkamlash. Agar o‘quvchida asosiy tushuncha yoki ko‘nikma yetarlicha shakllanmagan bo‘lsa, vazifa kichik qadamlarga ajratiladi, ko‘rgazmali yoki matnli tayanch beriladi va qisqa qayta aloqa tashkil etiladi. Maqsad o‘quvchini past darajada ushlab turish emas, balki keyingi murakkablikka chiqish uchun zarur tayanchni yaratishdir.

Uchinchi bosqich — boyitish va nazoratli tezlashtirish. O‘quvchi bazaviy maqsadni barqaror egallaganidan keyin unga yuqori darajali fikrlashni talab qiluvchi topshiriqlar beriladi. Masalan, matematikada faqat masalani yechish emas, boshqa yechim usulini topish va qaysi usul qulayligini asoslash; o‘qish savodxonligida matndagi sabab-oqibat aloqasini izohlash yoki muqobil yakun yaratish; ona tilida esa berilgan fikrni turli kontekstlarda kengaytirish mumkin. O‘quvchi tayyor bo‘lsa, keyingi sinf mazmunining zarur tayanchga ega elementlari bilan tanishtirish mumkin.

To‘rtinchi bosqich — monitoring va qayta moslashtirish. O‘quvchi bir marta aniqlangan darajada qolib ketmaydi. Oraliq diagnostika natijasiga ko‘ra topshiriqning murakkabligi, yordam miqdori va tezlashtirish darajasi qayta belgilanadi. Shu tariqa akademik trayektoriya o‘quvchining real rivojlanishiga mos ravishda yangilanib boradi.

Bosqich	Asosiy pedagogik amal	Kuzatiladigan natija
Diagnostika	Joriy tayyorgarlik va mustaqillikni aniqlash	Boshlang‘ich profil
Bazaviy tayanch	Bosqichli yordam va qayta aloqa	Asosiy natijaning barqarorlashuvi
Boyitish/tezlashtirish	Murakkab, ijodiy va keyingi bosqichga olib boruvchi vazifalar	Yuqori darajali fikrlash va o‘zlashtirish sur’ati
Monitoring	Oraliq o‘lchov va trayektoriyani qayta moslashtirish	Individual rivojlanish dinamikasi

Butun sinf bilan ishlashda differensiallashtirish

Mazkur modelning muhim jihati - u alohida iqtidorli guruh yaratishni majburiy shart sifatida qo‘ymaydi. Boshlang‘ich ta’limda differensiallashtirish bo‘yicha tizimli sharh va meta-tahlil differensial amaliyotlar kengroq ta’lim dasturiga integratsiya qilinganda kichik va o‘rtacha ijobiy ta’sirlar kuzatilishini, faqat bir xil qobiliyat bo‘yicha guruh-lashning o‘zi esa yetarli emasligini ko‘rsatgan [2]. Shu sababli taklif etilayotgan modelda guruhlar doimiy emas: ular vazifa, mavzu va diagnostika natijasiga ko‘ra o‘zgaradi.

Bunday yondashuv dastlab yuqori natija ko‘rsatgan o‘quvchiga o‘z imkoniyatidan past darajada uzoq qolib ketmaslik, dastlab qiyinchilik kuzatilgan o‘quvchiga esa keyin-chalik yuqori darajaga chiqish imkoniyatini saqlab qolish uchun xizmat qiladi. Shuning uchun tadqiqotda faqat sinfning o‘rtacha natijasi emas, balki har bir o‘quvchining boshlang‘ich nuqtadan qanchalik siljigani ham muhim ko‘rsatkich bo‘lishi kerak.

Tajriba-sinov va monitoring yo‘nalishi

Taklif etilayotgan metodik yondashuvni tekshirish uchun 2-sinfdan 4-sinf yakunigacha davom etadigan kuzatuvni tashkil etish maqsadga muvofiq. Tajriba sinfida mazkur trayektoriya modeli qo‘llanib, imkon qadar o‘xshash boshlang‘ich sharoitdagi nazorat sinfi bilan qiyosiy monitoring olib boriladi. Boshlang‘ich, oraliq va yakuniy diagnostika bir xil konstruktlarni o‘lchaydigan ekvivalent topshiriqlar orqali amalga oshirilishi kerak. Monitoringda bazaviy fan natijalari bilan birga mustaqillik, yechimni asoslash, bilimni yangi vaziyatga ko‘chirish, murakkab topshiriqlarni bajarish, xatoni aniqlash va tuzatish hamda individual o‘sish sur’ati qayd etiladi. Yuqori bosqich mazmunini o‘zlashtirish yoki ixtisoslashtirilgan ta’lim muassasalari imtihonlaridagi natijalar mavjud bo‘lsa, ular qo‘shimcha amaliy indikator bo‘lishi mumkin, ammo metodika samaradorligining yagona mezoni sifatida olinmaydi.

Tajriba hali yakunlanmaganligi sababli hozirgi bosqichda “metodika samaradorligi isbotlandi” degan xulosa chiqarish ilmiy jihatdan asosli emas. Ushbu tezisda keyinchalik empirik tekshiriladigan metodik mexanizm va monitoring yo‘nalishlari shakllantirildi.

Xulosa

Boshlang‘ich sinf o‘quvchilarining akademik salohiyatini rivojlantirishda asosiy masala barcha bolalarni bir xil tezlikda oldinga olib chiqish emas, balki har bir o‘quvchining hozirgi tayyorgarligidan kelib chiqib yuqoriroq natijaga tomon uzluksiz rivojlanish yo‘lini tashkil etishdir. Tezlashtirish, boyitish, differensial tayanch va monitoringni yagona siklda birlashtirish o‘quvchini doimiy qobiliyat toifasiga biriktirmasdan uning rivojlanish trayektoriyasini boshqarish imkonini beradi.

Keyingi tadqiqot bosqichida ushbu modelning 2–4-sinflar davomida turli boshlang‘ich darajadagi o‘quvchilarga ta’sirini tajriba va nazorat sinflari asosida tekshirish, individual o‘sish dinamikasini qayd etish hamda metodikaning qaysi komponentlari qanday sharoitda samarali ishlashini aniqlash zarur.

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ADSORPTION–DESORPTION ISOTHERMS OF AN INORGANIC POLYMER SORBENT DERIVED FROM LOCAL CLAY

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Abstract

The porous structure of an inorganic polymer aluminosilicate sorbent synthesized from local clay via the sol–gel method was investigated by low-temperature nitrogen adsorption–desorption at 77 K. The specific surface area was determined using the Brunauer–Emmett–Teller (BET) method. According to the IUPAC classification, the isotherm is close to Type IV and is characterized by a broad hysteresis loop, including hysteresis in the low-pressure region. The specific surface area of the material was approximately 32 $m^2\ g^{-1}$, and the total pore volume was 0.0186 $cm^3\ g^{-1}$.

Keywords

inorganic polymer, aluminosilicate sorbent, nitrogen adsorption, BET, porous structure, hysteresis, specific surface area.

Introduction. The specific surface characteristics, porosity parameters, and specific pore volume of an inorganic polymer sorbent derived from local raw materials are among the principal factors governing its sorption properties [1]. Pore size and pore-size

distribution determine the diffusion rate of substances within the porous structure, whereas analysis of the specific pore volume is important for evaluating the physicochemical properties of inorganic polymer sorbents [2].

To prepare the inorganic polymer sorbent, the initial local clay was first treated with 1 M sulfuric acid at room temperature at a solid-to-liquid ratio of 1:5 for 2 h and subsequently washed with distilled water until neutral. The material was then treated with 3 M NaOH solution at room temperature at a ratio of 1:3 for 4 h [3]. The textural properties of the initial clay and the resulting sorbent were investigated using nitrogen (N_2) adsorption–desorption isotherms at 77 K. Prior to measurement, a 0.0882 g sample was degassed under vacuum at 120 °C for 2 h 56 min. The adsorption and desorption isotherms were recorded over the relative-pressure range $P/P_0 = 0.03–0.99$.

The specific surface area (S_BET) was calculated using the Brunauer–Emmett–Teller (BET) equation from the adsorption-branch data in the relative-pressure range $P/P_0 = 0.05–0.30$ [4]:

$$P / [V (P_0 - P)] = 1 / (V_m C) + [(C - 1) / (V_m C)] (P/P_0), \quad (1)$$

where V is the volume of nitrogen adsorbed at the relative pressure P/P_0, $cm^3\ g^{-1}$ (STP); V_m is the monolayer capacity, $cm^3\ g^{-1}$ (STP); and C is the BET constant related to the energy of adsorbate–adsorbent interactions. Taking the cross-sectional area of a nitrogen molecule as 0.162 nm^2, the specific surface area was determined as follows:

$$S_{BET} = 4{,}353 \cdot V_m. \quad (2)$$

The total pore volume (V_total) was determined by converting the volume of nitrogen adsorbed at a relative pressure of $P/P_0 = 0.99$ to the corresponding volume of liquid nitrogen:

$$V_{total} = 0{,}001547 \cdot V_{0,99}, \quad (3)$$

where 0.001547 is the conversion factor from the volume of gaseous nitrogen at STP to the volume of liquid nitrogen at 77 K. The average pore diameter was calculated

using the cylindrical-pore model:

$$D = 4V_{total}/S_{BET}. \quad (4)$$

Results and Discussion.

The nitrogen adsorption–desorption isotherms of the inorganic polymer sorbent at 77 K are shown in Figure 1. The adsorption branch does not exhibit a sharp increase in the low-relative-pressure region ($P/P_0 < 0.1$), indicating the absence of a distinct stage associated with volumetric filling of micropores. As the relative pressure increases, the volume of adsorbed nitrogen increases almost linearly and reaches approximately 8 cm^3 g^{-1} at $P/P_0 \approx 0.9$, after which it approaches saturation. The maximum adsorption value (≈8.1 cm^3 g^{-1}) is relatively low, indicating limited overall porosity of the material.

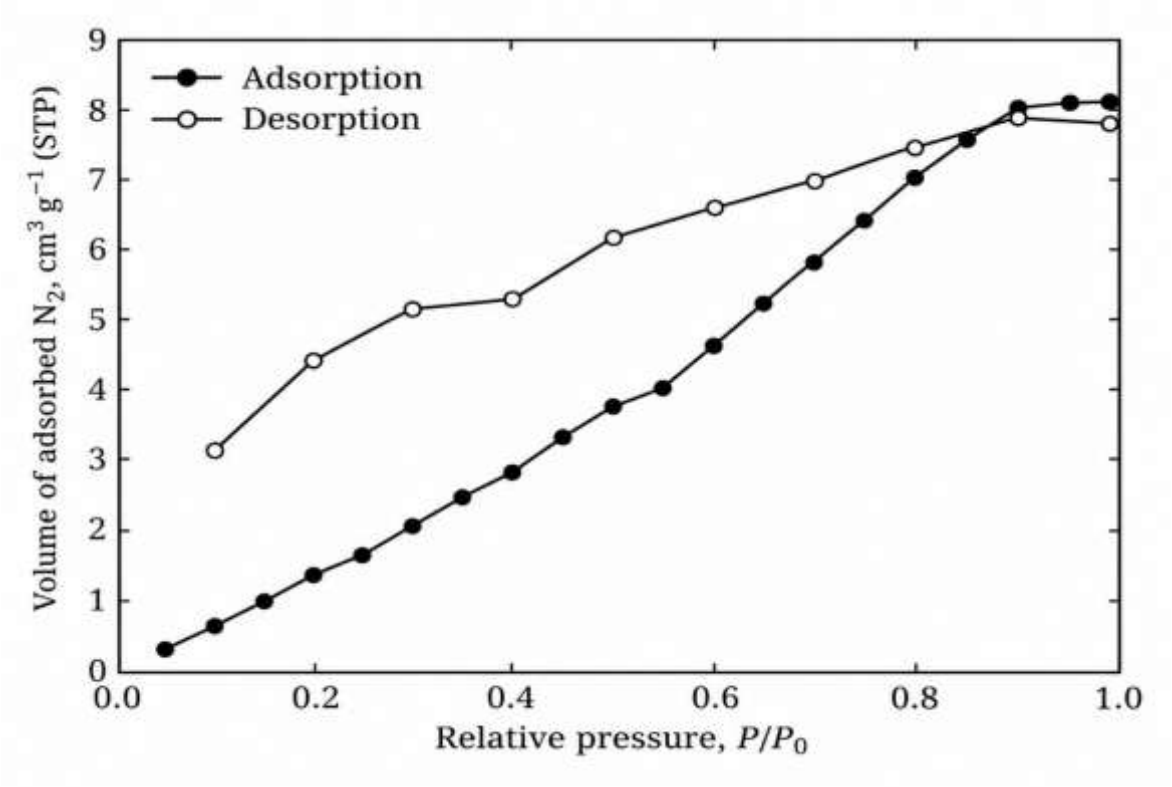


Figure 1. Nitrogen adsorption (●) and desorption (○) isotherms of the inorganic polymer sorbent at 77 K

The saturation behavior at high relative pressures and the presence of a broad hysteresis loop indicate that the isotherm is close to Type IV according to the IUPAC

classification [4]. The hysteresis loop extends over $P/P_0 \approx 0.1–0.9$, and the desorption branch does not rejoin the adsorption branch even at low relative pressures (low-pressure hysteresis). Such behavior is commonly attributed to incomplete equilibration caused by slow diffusion of nitrogen molecules through narrow pore entrances, partially irreversible retention of nitrogen within the pores, or deformation of the material framework during adsorption [4].

CONCLUSION

The most pronounced retention of mesopores was observed in the 15–20 nm range, which is considered favorable for ion-exchange and diffusion processes. The modification promotes the formation of active ion-exchange sites while preserving the total pore volume. The predominance of mesopores in the 10–20 nm range provides a structural basis for the enhanced sorption properties of the inorganic polymer sorbent.

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NON-TRADITIONAL FEATURES OF PLOT AND COMPOSITIONAL STRUCTURE IN SHODIQUL HAMRO'S PROSE

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Abstract

This thesis examines the non-traditional features of plot and compositional structure in Shodiqul Hamro's prose based on the stories "The Woman in the Picture" and "The Forgotten Ozone Layer." The aim of the study is to identify the functions of the sequence of events, the narrator's point of view, psychological experiences, and recurring details in the structure of the works. The analysis employs close reading, plot-compositional analysis, and comparative analysis of the works. Non-traditionality is considered not as a complete abandonment of conventional cause-and-effect relationships, but as their complication through memory, subjective perception, and symbolic connections.

In "The Woman in the Picture," the analysis focuses on the transition from depictions of everyday life to unusual events, the coexistence of the narrator's observations and assumptions, and the role of the picture as a detail connecting the events. In "The Forgotten Ozone Layer," the second-person narrative form, repetition of everyday actions, and the changing attitude toward the tree root are examined in relation to the development of the plot. These devices are interpreted as compositional solutions that connect external events with the characters' inner experiences.

The thesis argues that explaining the plot solely as a sequence of events does not fully reveal the artistic structure of the works. When an event is narrated, from whose point of view it is presented, and what semantic connection it establishes with previous episodes are also important analytical criteria. The scholarly significance of the study

lies in describing the non-traditional narrative techniques in the selected stories on the basis of specific textual observations. The conclusions are limited to the works analyzed, and the need for broader comparative research before applying them to the writer's entire prose oeuvre is emphasized.

Keywords

Shodiqul Hamro, prose, plot, composition, non-traditional narration, narrator's point of view, artistic time, retrospection, psychological depiction, symbolic detail, plot-compositional analysis.

SHODIQUL HAMRO NASRIDA SYUJET VA KOMPOZITSION QURILISHNING NOAN'ANAVIY XUSUSIYATLARI

Normurodova Nilufar Narzulla qizi

63-sonli umumiy o'rta ta'lim maktabi o'qituvchisi

Annotatsiya

Ushbu tezisda Shodiqul Hamro nasrida syujet va kompozitsion qurilishning noan'anaviy xususiyatlari "Suratdagi ayol" hamda "Unutilgan ozon pardasi" hikoyalari misolida o'rganiladi. Tadqiqotning maqsadi voqealarni bayon qilish tartibi, hikoyachi nuqtayi nazari, ruhiy kechinmalar va takrorlanuvchi detallarning asar tuzilishidagi vazifasini aniqlashdan iborat. Tahlilda yaqin o'qish, syujet-kompozitsion tahlil va asarlararo qiyoslash usullaridan foydalaniladi. Noan'anaviylik voqealarning odatiy sabab-oqibat aloqalarini butunlay yo'qotish sifatida emas, balki ularni xotira, subyektiv idrok va ramziy bog'lanishlar orqali murakkablashtirish sifatida ko'rib chiqiladi.

"Suratdagi ayol" hikoyasida kundalik hayot tasviridan g'ayrioddiy voqealarga o'tish, hikoyachining kuzatishlari bilan taxminlarining yonma-yon kelishi hamda surat detalining voqealarni birlashtirishi tahlil markaziga olinadi. "Unutilgan ozon pardasi"da esa ikkinchi shaxs shaklidagi bayon, kundalik harakatning takrorlanishi va daraxt tomiriga munosabatning o'zgarishi syujet rivoji bilan bog'liq holda tekshiriladi. Ushbu

vositalar tashqi voqealar bilan qahramonning ichki kechinmalarini o‘zaro bog‘lovchi kompozitsion yechimlar sifatida talqin qilinadi.

Tezisda syujetni faqat hodisalar ketma-ketligi orqali tushuntirish asarlarning badiiy tuzilishini to‘liq ochib bermasligi asoslanadi. Voqeaning qachon bayon qilinishi, qanday nuqtayi nazardan ko‘rsatilishi va avvalgi epizodlar bilan qanday mazmuniy aloqa hosil qilishi ham muhim tahlil mezonlari hisoblanadi. Tadqiqotning ilmiy ahamiyati tanlangan hikoyalardagi noan’anaviy qurilish usullarini aniq matniy kuzatishlar asosida tavsiflashga qaratilganligi bilan belgilanadi. Xulosalar tahlil qilingan asarlar doirasida shakllantirilib, ularni yozuvchining butun nasriy ijodiga tatbiq etish uchun kengroq qiyosiy tadqiqot zarurligi qayd etiladi.

Kalit so‘zlar: Shodiqul Hamro, nasr, syujet, kompozitsiya, noan’anaviy bayon, hikoyachi nuqtayi nazari, badiiy vaqt, retrospeksiya, ruhiy tasvir, ramziy detal, syujet-kompozitsion tahlil.

KIRISH

Badiiy asarning mazmuni unda qanday voqealar tasvirlanganiga hamda bu voqealarning qay tartibda va qanday nuqtayi nazardan bayon qilinganiga bog‘liq. Syujet personajlar faoliyati, ular o‘rtasidagi munosabatlar va konflikt rivojini ifodalasa, kompozitsiya asarning barcha qismlarini muayyan badiiy maqsad asosida birlashtiradi. Shu sababli nasriy asarni o‘rganishda hodisalar ketma-ketligini qayta bayon qilish bilan cheklanish yetarli emas. Epizodlarning joylashuvi, xotira va hozirgi voqelik munosabati, hikoyachi nutqi, takrorlanuvchi detallar hamda asarning boshlanish va yakunlanish usullari ham tahlil qilinishi lozim.

Shodiqul Hamro nasrining syujet-kompozitsion xususiyatlarini o‘rganish yozuvchining badiiy tafakkuri va tasvir usullarini anglashga imkon beradi. Mazkur tezisda tadqiqot doirasi “Suratdagi ayol” va “Unutilgan ozon pardasi” hikoyalari bilan chegaralanadi. Bu asarlar voqealarni hikoyachi idroki orqali yetkazish, tashqi

hodisalarni ruhiy kechinmalar bilan bog‘lash va muayyan detal atrofida mazmuniy aloqalar hosil qilish jihatidan qiyosiy tahlil uchun asos bo‘la oladi. Bunda tanlangan hikoyalarga xos qurilish usullarini yozuvchining butun ijodiga tegishli xususiyat sifatida oldindan umumlashtirmaslik muhimdir.

Mavzuning dolzarbligi nasriy asarlardagi noan’anaviy qurilishni aniq tahlil mezonlari orqali tushuntirish zarurati bilan belgilanadi. “Noan’anaviy” tushunchasi har qanday murakkab yoki g‘ayrioddiy voqeaga nisbatan qo‘llanadigan umumiy baho bo‘lib qolmasligi kerak. Ushbu tadqiqotda u voqealarni to‘g‘ri xronologik tartibda bayon qilishdan chekinish, hikoyachi idrokining voqelik tasviriga faol ta’siri, tashqi harakat bilan ichki kechinmaning o‘zaro almashinishi hamda epizodlarning ramziy detallar orqali bog‘lanishi kabi belgilar asosida tekshiriladi. Mazkur vositalarning adabiyotda avvaldan mavjudligi hisobga olinib, ularning aynan tanlangan asarlarda qanday uyg‘unlashtirilganiga e’tibor qaratiladi.

Syujet va kompozitsiya munosabatini aniqlash uchun voqealarning sodir bo‘lish tartibi bilan matnda bayon qilinish tartibini farqlash zarur. Asarda avval yuz bergan hodisa keyinroq eslanishi yoki keyingi voqea haqidagi ishora dastlabki epizodlarda berilishi mumkin. Bunday qurilish o‘quvchining ma’lumotni qabul qilish jarayonini boshqaradi: ayrim sabablar darhol ochilmaydi, oldingi epizodning mazmuni esa keyingi hodisa orqali o‘zgaradi. Demak, badiiy vaqtni tashkil etish syujetning ta’sirchanligi va personaj haqidagi tasavvurning shakllanishida muhim o‘rin tutadi.

Hikoyachi nuqtayi nazari ham kompozitsion qurilishning asosiy omillaridan biridir. Birinchi shaxs bayonida o‘quvchi voqealarni hikoyachining bilimi, xotirasi va kechinmalari doirasida kuzatadi. Ikkinchi shaxsga murojaat shakli esa personajning o‘z hayotini baholashi bilan bog‘liq talqin imkoniyatlarini yuzaga chiqarishi mumkin. Biroq bayonning grammatik shakli o‘z-o‘zidan noan’anaviylikni tasdiqlamaydi. Uning

ahamiyati axborotni qanday taqsimlashi, o‘quvchini qahramonga qanchalik yaqinlashtirishi va voqealar orasidagi munosabatni qanday ochishi orqali belgilanadi.

Tadqiqotda badiiy detalning kompozitsion vazifasiga ham alohida e’tibor beriladi. Takrorlanuvchi predmet yoki makon belgisi turli epizodlarni birlashtirishi, personaj munosabatining o‘zgarishini ko‘rsatishi va asarning markaziy muammosini aniqlashtirishi mumkin. Shu jihatdan detalning mavjudligini qayd etishdan ko‘ra, uning matn davomida qanday mazmun kasb etishini kuzatish muhimdir. Detalni ramz sifatida talqin qilish esa uning syujetdagi o‘rni va boshqa tasvir unsurlari bilan aloqasiga tayanishi lozim.

Tadqiqotning maqsadi Shodiqul Hamroning tanlangan hikoyalarida syujet va kompozitsion qurilishning noan’anaviy xususiyatlarini aniqlash hamda ularning badiiy vazifasini yoritishdan iborat. Ushbu maqsadga erishish uchun voqealarning xronologik va bayon tartibini qiyoslash, hikoyachi nuqtayi nazarining axborot taqsimotiga ta’sirini tekshirish, ruhiy kechinmalarning syujet rivojidagi o‘rnini belgilash va takrorlanuvchi detallarning epizodlarni birlashtirish vazifasini o‘rganish ko‘zda tutiladi.

Tadqiqot obyekti — “Suratdagi ayol” va “Unutilgan ozon pardasi” hikoyalari; tadqiqot predmeti esa ushbu asarlardagi voqealar tartibi, bayon shakli, badiiy vaqt va kompozitsion bog‘lanishlardir. Tahlilda yaqin o‘qish, syujet-kompozitsion tahlil va asarlararo qiyoslash usullaridan foydalaniladi. Har bir xulosa muayyan epizod yoki matniy bog‘lanish asosida tekshiriladi. Mazkur yondashuv noan’anaviy qurilishning asar mazmunini shakllantirishdagi vazifasini ochib berish va yozuvchining tasvir usullarini asosli tavsiflashga xizmat qiladi.

ASOSIY QISM

Voqealar tartibi va bayon tartibining o‘zaro munosabati

Shodiqul Hamroning “Suratdagi ayol” va “Unutilgan ozon pardasi” hikoyalarida syujet-kompozitsion qurilishni o‘rganish uchun voqealarning sodir bo‘lish tartibi bilan

o‘quvchiga yetkazilish tartibini farqlash zarur. Birinchi tartib hodisalarning vaqt bo‘yicha ketma-ketligini bildirsa, ikkinchisi yozuvchining axborotni qanday taqsimlaganini ko‘rsatadi. Ushbu ikki tartib o‘rtasidagi farq voqeani anglash, personajga munosabat bildirish va asardagi sabab-oqibat aloqalarini tushunishga ta’sir qiladi.

“Suratdagi ayol” hikoyasida kampirning o‘limi bayon qilinganidan keyin hikoyachi uning hayotligida suratlar bilan bog‘liq kuzatgan voqeasini eslaydi. Shu tariqa oldingi hodisa keyingi vaziyatni tushuntirish jarayoniga kiritiladi. Mazkur retrospektiv epizod qutiga qiziqishning sababini ochib, o‘tmish bilan hozirgi harakat o‘rtasida bog‘lanish hosil qiladi. ziyouz.uz

Retrospeksiyaning kompozitsion vazifasi voqealarni vaqt jihatidan murakkablashtirish bilangina belgilanmaydi. Uning ahamiyati oldingi epizod haqidagi tasavvurni qanday to‘ldirishida namoyon bo‘ladi. O‘quvchi yangi ma’lumotni olgach, ilgari tasvirlangan harakatning sababini boshqacha tushunishi mumkin. Shu sababli tahlilda har bir xotira epizodining qayerda joylashtirilgani va aynan shu o‘rinda qanday axborot berayotganiga e’tibor qaratish lozim.

Hikoyachi nuqtayi nazari va axborotning bosqichma-bosqich ochilishi

Bayon nuqtayi nazari syujetning rivojlanishiga bevosita ta’sir qiladi. Hikoyachi voqeani to‘liq bilmasligi, ayrim belgilarni noto‘g‘ri tushunishi yoki ularga keyinchalik boshqa ma’no berishi mumkin. Bunday vaziyatda syujet faqat tashqi hodisalardan emas, ularni anglash jarayonidan ham tashkil topadi.

“Suratdagi ayol”dagi birinchi shaxs bayoni ayol haqidagi ma’lumotni hikoyachining idroki bilan chegaralaydi. Uning kuzatishi, taxmini va hayrati yonma-yon beriladi. Natijada o‘quvchi tasvirlangan hodisa bilan hikoyachining unga bergan izohini ajratib o‘qishga ehtiyoj sezadi. ziyouz.uz

Bu qurilishni sirli vaziyatning bosqichma-bosqich ochilishi sifatida talqin qilish mumkin. Biroq hikoyachining cheklangan bilimini avtomatik ravishda uning

ishonchsizligi deb baholash to‘g‘ri emas. Cheklangan nuqtayi nazar personaj biladigan ma’lumot doirasini bildiradi; ishonchsizlik haqidagi xulosa esa uning bayoni boshqa matniy dalillarga zid kelganida asoslanadi. Ushbu farq hikoyaning kompozitsion xususiyatlarini aniq tavsiflashga yordam beradi.

Ikkinchi shaxs bayonining kompozitsion imkoniyatlari

“Unutilgan ozon pardasi” hikoyasida voqealar “sen” shaklidagi murojaat orqali bayon qilinadi. Qahramonning kundalik yo‘li, ishga munosabati va ichki ikkilanishlari shu shaklda yoritiladi. Uni personajning hayotini tashqaridan kuzatish bilan ichki tajribasiga yaqinlashishni birlashtiruvchi usul sifatida talqin qilish mumkin. ziyouz.uz

Ikkinchi shaxs bayoni o‘quvchining matnga munosabatini ham murakkablashtiradi. Murojaat shakli o‘quvchini tasvirlangan vaziyatga yaqinlashtirishi mumkin, biroq asardagi “sen”ni bevosita har bir o‘quvchi bilan aynanlashtirish shart emas. U, avvalo, muayyan tajriba va ruhiy holatga ega personajni ifodalaydi.

Mazkur usulning noan’anaviyligi uning kam uchrashida emas, asar tuzilishida qanday ishlashidadir. Murojaat qahramon harakatini qayta ko‘rib chiqishga, uning qarorlari va ikkilanishlariga diqqatni jamlashga xizmat qilsa, bayon shakli kompozitsiyaning faol omiliga aylanadi. Shu asosda grammatik shakl bilan badiiy vazifani birgalikda tekshirish zarur.

Tashqi voqea va ruhiy harakatning uyg‘unligi

Syujetni faqat personajning bir joydan boshqa joyga borishi yoki biror ishni bajarishi orqali tushuntirish uning ichki rivojini e’tibordan chetda qoldiradi. Ruhiy harakat qahramonning bir hodisaga munosabati o‘zgarishi, avvalgi qarashini qayta baholashi yoki qaror qabul qilishi bilan namoyon bo‘ladi. Tashqi voqea shu jarayonni yuzaga chiqaradigan turtki vazifasini bajarishi mumkin.

“Unutilgan ozon pardasi”da yo‘lak ostidan ko‘rinayotgan daraxt tomiri qahramonning odatiy muhitga munosabatini o‘zgartiradi. Uning kuzatishi keyinchalik

tomirni saqlash istagi va harakatiga ulanadi. Bu bog‘lanishni tashqi hodisaning ruhiy o‘zgarishga, ruhiy o‘zgarishning esa yangi faoliyatga olib kelishi sifatida sharhlash mumkin.

Ruhiy epizodlarni syujetdagi “to‘xtalish” deb baholash har doim ham asosli emas. Agar kechinma keyingi qarorni tayyorlasa, u voqealar rivojida sababiy vazifa bajaradi. Shu bois tahlilda tasvir yoki mulohazadan keyin personajning harakati qanday o‘zgargani tekshiriladi. Ana shu mezon ruhiy tasvirning kompozitsion zaruratini aniqlash imkonini beradi.

Takrorlanuvchi detalning epizodlarni birlashtirish vazifasi

Kompozitsion yaxlitlik faqat voqealarning ketma-ketligi orqali hosil bo‘lmaydi. Takrorlanuvchi predmet, makon belgisi yoki obraz turli epizodlar o‘rtasida mazmuniy aloqa yaratishi mumkin. Bunda takror oddiy qaytarishdan farqlanadi: detal har safar yangi vaziyatda namoyon bo‘lib, oldingi ma’nosini to‘ldiradi yoki o‘zgartiradi.

“Suratdagi ayol”da surat hikoyachining qiziqishi va kechinmalarini bog‘lovchi markaziy predmetdir. “Unutilgan ozon pardasi”da esa yo‘lak, tomir va asfalt munosabati qahramonning kuzatishlari bilan keyingi harakatlarini birlashtiradi. Bunday detallarni kompozitsion markaz sifatida baholash uchun ularning nechta marta tilga olinganini sanash yetarli emas. Muhimi, ular asarning turli qismlarini qanday bog‘layotganidir. Detal voqeaga turtki berishi, xotirani uyg‘otishi, personaj qarorini tayyorlashi yoki oldingi epizodning mazmunini qayta ochishi mumkin. Shu jihatdan predmetning syujetdagi vazifasi bilan ramziy talqinini farqlash va keyin o‘zaro bog‘lash lozim.

Maishiy tasvirdan g‘ayrioddiy voqeaga o‘tish

“Suratdagi ayol”da kundalik hayotga oid tasvirlar suratdagi ayolning jonlanishi bilan bog‘liq g‘ayrioddiy voqeaga ulanadi. Bu o‘tish hikoyachining hayrati va kechinmalari orqali berilgani uchun voqelikning chegaralari haqidagi savolni yuzaga chiqaradi. Ushbu qurilishni tahlil qilishda ikki masalani ajratish zarur: hikoyada nima

tasvirlangani va tasvir qanday izohlanayotgani. G‘ayrioddiy hodisani darhol tush, ruhiy buzilish yoki muayyan adabiy oqim belgisi deb belgilash matnning talqin imkoniyatlarini toraytirishi mumkin. Avvalo, voqeaga tayyorlovchi epizodlar, hikoyachining holati va hodisadan keyingi o‘zgarishlar tekshirilishi kerak.

Maishiy va g‘ayrioddiy qatlamlarning tutashuvi o‘quvchining dastlabki kutishini o‘zgartiradi. Asar oddiy turmush voqeasi sifatida boshlangan bo‘lsa ham, keyingi epizodlar uning mazmunini boshqa yo‘nalishda anglashga undashi mumkin. Kompozitsion tahlil ana shu o‘zgarish qanday tayyorlanganini ochib berishi lozim.

Noan’anaviy qurilishning badiiy vazifasi

Tanlangan hikoyalarda noan’anaviylikni alohida usullar ro‘yxati sifatida emas, ularning o‘zaro munosabati sifatida tushunish samaraliroqdir. Retrospeksiya, subyektiv bayon, ruhiy harakat va takrorlanuvchi detal adabiyotda avvaldan mavjud vositalardir. Ularning muayyan asardagi o‘ziga xosligi qanday birlashtirilgani va qanday mazmun hosil qilganida namoyon bo‘ladi.

Tahlil asosida uch kompozitsion yo‘nalishni ajratish mumkin. Birinchisi — voqealar haqidagi ma’lumotni bosqichma-bosqich yetkazish; ikkinchisi — tashqi hodisani personajning idrokidagi o‘zgarish bilan bog‘lash; uchinchisi — predmet va makon detallarini epizodlar orasidagi mazmuniy aloqa vositasiga aylantirish. Ushbu yo‘nalishlar syujetni voqealar ketma-ketligidan kengroq hodisa sifatida o‘rganishni talab qiladi. Mazkur kuzatishlar “Suratdagi ayol” va “Unutilgan ozon pardasi” hikoyalari doirasida shakllantirildi. Ular Shodiqul Hamroning nasriy mahoratini tavsiflash uchun asos beradi, biroq yozuvchining butun ijodiga oid umumiy xulosani tasdiqlash uchun boshqa asarlar bilan qiyoslash zarur. Bunda aynan bir vositaning mavjudligi emas, uning bajaradigan vazifasi va boshqa kompozitsion unsurlar bilan aloqasi asosiy mezon bo‘lishi kerak.

XULOSA

Shodiqul Hamroning “Suratdagi ayol” va “Unutilgan ozon pardasi” hikoyalari tahlili syujet va kompozitsion qurilishning o‘ziga xosligi voqealar ketma-ketligi, hikoyachi nuqtayi nazari, ruhiy harakat hamda takrorlanuvchi detallarning o‘zaro bog‘lanishida namoyon bo‘lishini ko‘rsatadi. Ushbu asarlarda tashqi hodisalar personajning ularni anglash jarayoni bilan birgalikda rivojlanadi. Shu sababli syujetni faqat sodir bo‘lgan voqealarni qayta bayon qilish orqali tushuntirish asarlarning badiiy mazmunini to‘liq ochib bermaydi.

“Suratdagi ayol”da retrospektiv epizodlar hikoyachining qiziqishi sabablarini ochib, o‘tmish va hozirgi voqelik o‘rtasida mazmuniy aloqa hosil qiladi. Birinchi shaxs bayoni esa voqealar haqidagi ma’lumotni hikoyachining kuzatishlari, taxminlari va kechinmalari doirasida taqdim etadi. Maishiy tasvirdan g‘ayrioddiy hodisaga o‘tish o‘quvchining dastlabki tasavvurini o‘zgartirib, oldingi epizodlarni qayta talqin qilishga undaydi. Bunda noan’anaviy qurilish sirli voqeaning mavjudligi bilangina emas, uning bayon jarayonida qanday tayyorlanishi bilan belgilanadi.

“Unutilgan ozon pardasi”da ikkinchi shaxsga murojaat qahramonning hayoti, ikkilanishlari va harakatlarini kuzatishning o‘ziga xos shaklini yuzaga keltiradi. Kundalik makonga munosabatning o‘zgarishi ruhiy rivojlanish bilan bog‘lanadi. Tashqi hodisa qahramonning ichki kechinmalariga ta’sir qiladi, bu kechinmalar esa keyingi faoliyatini tayyorlaydi. Natijada ruhiy tasvir syujetdan ajralgan mulohaza emas, voqealar rivojining sababiy omili sifatida namoyon bo‘ladi.

Har ikki hikoyada predmet va makon detallari kompozitsion yaxlitlikni ta’minlashda muhim o‘rin tutadi. Ularning takrorlanishi epizodlarni birlashtirib, personaj munosabatining o‘zgarishini kuzatishga imkon beradi. Detalning badiiy ahamiyati takrorlar sonida emas, har bir vaziyatda qanday yangi ma’no kasb etishidadir. Shu bois uning syujetdagi amaliy vazifasi va ramziy mazmuni matniy aloqalar asosida izohlanishi lozim.

Tadqiqotning metodologik xulosasi shundan iboratki, noan'anaviylikni biror vositaning mavjudligi asosida belgilash yetarli emas. Retrospeksiya, subyektiv bayon yoki g'ayrioddiy voqea alohida holda yozuvchining individual uslubini tasdiqlamaydi. Ularning o'zaro uyg'unligi, axborotni taqsimlashdagi vazifasi va asar mazmuniga ta'siri tekshirilishi zarur. Shuningdek, hodisaning tasviri bilan hikoyachining unga bergan bahosini farqlash talqinning aniqligini ta'minlaydi.

Tanlangan hikoyalarda syujet-kompozitsion qurilishning asosiy xususiyatlari axborotning bosqichma-bosqich ochilishi, tashqi voqea va ichki kechinmaning bog'lanishi hamda detalning epizodlararo aloqa vositasiga aylanishida kuzatildi. Ushbu xulosalar tahlil qilingan ikki asar doirasiga tegishlidir. Boshqa hikoya va qissalarni shu mezonlar asosida o'rganish takrorlanuvchi usullar bilan alohida asarga xos yechimlarni farqlash, Shodiqul Hamro nasrining kompozitsion xususiyatlarini kengroq dalillar asosida tavsiflash imkonini beradi.

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MODERN CHROMATOGRAPHIC METHODS FOR THE ISOLATION AND ANALYSIS OF PHENYLETHANOID GLYCOSIDES FROM PLANTS OF THE CISTANCHE GENUS

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Abstract

This thesis examines modern chromatographic approaches for the isolation, identification, and quantitative determination of phenylethanoid glycosides from plants of the Cistanche genus, with particular attention to echinacoside and acteoside. High-performance liquid chromatography with diode-array detection (HPLC-DAD), ultra-high-performance liquid chromatography with photodiode-array detection (UPLC-PDA), liquid chromatography–tandem mass spectrometry (LC-MS/MS), and high-speed counter-current chromatography (HSCCC) are compared in terms of selectivity, sensitivity, reproducibility, and cost-effectiveness. The results show that HPLC-DAD is the most suitable method for routine quality control and standardization, whereas LC-MS/MS provides the highest analytical certainty at low concentrations. HSCCC is considered the most effective preparative technique for obtaining highly purified echinacoside and acteoside.

Keywords

Cistanche, phenylethanoid glycosides, echinacoside, acteoside, HPLC-DAD, UPLC-PDA, LC-MS/MS, HSCCC, standardization, quality control.

ISTANCHE TURKUMI O'SIMLIKLARIDAGI FENILETANOID GLIKOZIDLARNI AJRATIB OLISH VA TAHLIL QILISHNING ZAMONAVIY XROMATOGRAFIK USULLARI

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Annotatsiya. Ushbu tezisda Cistanche turkumiga mansub o'simliklardan ajratib olinadigan feniletanoid glikozidlar, xususan ekinakozid va akteozidni ajratish hamda miqdoriy tahlil qilishning zamonaviy xromatografik yechimlari ko'rib chiqiladi. Yuqori samarali suyuqlik xromatografiyasi (HPLC-DAD), ultra samarali suyuqlik xromatografiyasi (UPLC-PDA), suyuqlik xromatografiyasi–mass-spektrometriyasi (LC-MS/MS) va yuqori tezlikdagi qarama-qarshi oqim xromatografiyasi (HSCCC) usullarining selektivligi, aniqligi, takrorlanuvchanligi va iqtisodiy samaradorligi qiyosiy tahlil qilinadi. Tadqiqot natijasida rutin sifat nazorati va standartlashtirish uchun HPLC-DAD, past konsentratsiyalarda aniq identifikatsiya uchun LC-MS/MS, preparativ miqyosda toza modda olish uchun esa HSCCC eng maqbul yo'nalishlar sifatida asoslanadi. Shu bilan birga, ekinakozid va akteozidni bir vaqtda aniqlash orqali Cistanche xomashyosi hamda uning ekstraktlarining sifatini nazorat qilish imkoniyatlari yoritiladi.

Kalit so'zlar: Cistanche, feniletanoid glikozidlar, ekinakozid, akteozid, HPLC-DAD, UPLC-PDA, LC-MS/MS, HSCCC, standartlashtirish, sifat nazorati.

KIRISH

Cistanche turkumiga mansub o'simliklar feniletanoid glikozidlar, polisaxaridlar, iridoidlar, lignanlar va flavonoidlar kabi biologik faol birikmalarning qimmatli manbasi hisoblanadi. Ushbu birikmalar orasida ekinakozid va akteozid Cistanche xomashyosi hamda ekstraktlarining sifatini va farmakologik salohiyatini baholashda eng muhim marker moddalar sifatida qaraladi.

Cistanche xomashyosining farmatsevtik qiymati faqat faol birikmalarning mavjudligi bilan emas, balki ularni ishonchli ajratib olish va analitik aniqlash imkoniyati bilan ham belgilanadi. Ekinakozid va akteozid miqdori o'simlik turi, geografik kelib

chiqishi, yig‘ish davri, quritish sharoiti, ekstraksiya usuli va saqlash sharoitlariga bog‘liq o‘zgarishi mumkin. Shu sababli zamonaviy xromatografik usullar sifat nazorati, standartlashtirish va takrorlanuvchan fitopreparatlar yaratishda muhim ahamiyatga ega.

Ushbu tezisning maqsadi — Cistanche o‘simliklaridagi feniletanoid glikozidlarni ajratib olish va tahlil qilishda qo‘llaniladigan zamonaviy xromatografik usullarni taqqoslash, ularning afzallik va cheklovlarini aniqlash hamda turli maqsadlar uchun eng maqbul yondashuvni ilmiy asoslashdan iborat.

FENILETANOID GLIKOZIDLARNING ANALITIK AHAMIYATI

Ekinakozid va akteozid fenolik gidroksil guruhlariga ega bo‘lib, ultrabinafsha sohasida kuchli yutilishga ega. Bu xususiyat ularni teskari fazali xromatografiyada ajratish hamda UV yoki diod-massiv detektori yordamida miqdoriy aniqlash imkonini beradi. Biroq ekinakozid va akteozid izoakteozid, cistanosid A kabi tarkibiy jihatdan yaqin birikmalar bilan birga uchragani uchun yetarli xromatografik ajralish va ayrim hollarda mass-spektrometrik tasdiqlash zarur bo‘ladi.

AJRATIB OLISHNING ASOSIY BOSQICHLARI

1. Quruq Cistanche xomashyosini maydalash va bir jinsli namuna tayyorlash.

2. 70–85% etanol yoki suvli etanol bilan ultratovushli yoki an’anaviy ekstraksiya qilish.

3. Ekstraktni konsentrlash va qutbli fraksiyalarga ajratish.

4. Makroporli smola, Sephadex LH-20 yoki ODS kolonkasi bilan dastlabki tozalash.

5. Preparativ HPLC yoki HSCCC yordamida ekinakozid va akteozidni yuqori tozalikda olish.

6. Olingan fraksiyalarni HPLC-DAD yoki LC-MS/MS bilan tasdiqlash va miqdoriy baholash.

HSCCC usuli birikmalarning ikki suyuq fazadagi taqsimlanish koeffitsientiga asoslanadi. Qattiq qattiq fazadan foydalanilmasligi tufayli adsorbsiyaga bog‘liq

yo‘qotishlar kamayadi va ekinakozid hamda akteozidni yuqori tozalikda olish imkoniyati yaratiladi.

ZAMONAVIY XROMATOGRAFIK USULLAR

Usul	Asosiy vazifasi	Afzalliklari	Cheklovlari
HPLC-DAD	Ekinakozid va akteozidni miqdoriy aniqlash	Nisbatan arzon, takrorlanuvchan, rutin nazoratga mos	Yaqin izomerlarni farqlashda cheklangan
UPLC-PDA	Tezkor va samarali ajratish	Qisqa tahlil vaqti, yuqori ajratuvchanlik	Yuqori bosim va qimmatroq kolonkalar
LC-MS/MS	Past konsentratsiyalarda aniq identifikatsiya va miqdoriy o‘lchash	Yuqori selektivlik va sezgirlik	Qimmat uskuna va malakali xodim talab qiladi
LC-Q-TOF-MS	Noma’lum feniletanoid glikozidlarni aniqlash	Aniq massa o‘lchovi va fragmentatsiya ma’lumotlari	Asosan ilmiy tadqiqot laboratoriyalari uchun qimmat
HSCCC	Preparativ ajratish va tozalash	Yuqori tozalik va unumdorlik	Rutin miqdoriy tahlilga emas, preparativ ishga mos

HPLC-DAD: RUTIN NAZORAT UCHUN MAQBUL USUL

HPLC-DAD Cistanche ekstraktlarida ekinakozid, akteozid va ular bilan bog‘liq feniletanoid glikozidlarni bir vaqtda aniqlashda keng qo‘llaniladi. Ajratish odatda C18 teskari fazali kolonkada suv–asetonitril yoki suv–metanol elyuent tizimida amalga oshiriladi. Diod-massiv detektori bir necha to‘lqin uzunliklarida spektral ma’lumot yozib olish imkonini beradi, bu esa pikning to‘g‘riligini qo‘shimcha tekshirishga yordam beradi. HPLC-DAD usulining asosiy afzalliklari — nisbatan past operatsion

xarajat, yaxshi takrorlanuvchanlik va rutin sifat nazoratiga mosligidir. Solishtirma standart namunalar asosida kalibrlash egri chizig‘i tuzilganda marker birikmalarning miqdori aniq o‘lchanadi. Shu sababli HPLC-DAD xomashyo, ekstrakt va tayyor mahsulotlarni standartlashtirish uchun eng maqbul usul hisoblanadi.

LC-MS/MS: ENG YUQORI ANALITIK ISHONCHLILIK

LC-MS/MS, ayniqsa ko‘p reaksiyali monitoring (MRM) rejimida, ekinakozid va akteozidni molekulyar massa hamda xarakterli fragment ionlari asosida aniqlaydi. Bu usul murakkab o‘simlik ekstraktlarida va past konsentratsiyalarda UV-deteksiyaga nisbatan ancha yuqori selektivlik beradi.

LC-ESI-MS va LC-Q-TOF-MS/MS yordamida Cistanche ekstraktlarida ekinakozid, akteozid, izoakteozid, cistanosid A va boshqa feniletanoid glikozidlar aniqlangan. Biroq uskuna, solishtirma moddalar va malakali xodimlar xarajati yuqori bo‘lgani uchun LC-MS/MS ko‘proq ilmiy tadqiqot va tasdiqlash bosqichida qo‘llanadi.

USULLARNI QIYOSIY BAHOLASH

Rutin sifat nazorati va iqtisodiy jihatdan qulay tahlil uchun HPLC-DAD eng maqbul usuldir. Past konsentratsiyalarda yuqori selektiv aniqlash talab etilsa, LC-MS/MS ustunlik qiladi. Toza ekinakozid va akteozid olish maqsadida esa HSCCC eng samarali preparativ texnologiya hisoblanadi.

Nazariy jihatdan HPLC-DAD “xarajat–aniqlik” muvozanati bo‘yicha eng optimal yechim hisoblanadi, chunki u yetarli selektivlik, yuqori takrorlanuvchanlik va nisbatan past xarajatni birlashtiradi. LC-MS/MS eng yuqori analitik ishonchlilikni ta’minlaydi, biroq rutin laboratoriyalar uchun iqtisodiy jihatdan kamroq qulaydir.

XULOSA

Ekinakozid va akteozid Cistanche xomashyosining farmatsevtik qiymatini belgilovchi asosiy marker birikmalar hisoblanadi. Ularni ajratib olish va tahlil qilishda HPLC-DAD, UPLC-PDA, LC-MS/MS va HSCCC usullari o‘ziga xos afzalliklarga ega.

HPLC-DAD rutin sifat nazorati va ekstraktlarni standartlashtirish uchun asosiy usul sifatida tavsiya etiladi. LC-MS/MS tasdiqlash, murakkab namunalarni tahlil qilish va past konsentratsiyalarda aniqlash uchun qo‘llanilishi maqsadga muvofiq. HSCCC esa yuqori tozalikdagi feniletanoid glikozidlarni preparativ miqyosda olish uchun istiqbolli texnologiya hisoblanadi. Ushbu usullarni birlashtirish Cistanche asosidagi standartlashtirilgan fitopreparatlar yaratish uchun ilmiy asos bo‘la oladi.

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THEORETICAL FOUNDATIONS OF INNOVATIVE APPROACHES TO MANAGING EDUCATIONAL INSTITUTIONS

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Annotation

The article explores the theoretical foundations of innovative approaches to managing educational institutions, as well as their role and significance in modernizing the education system. Innovative management involves restructuring organizational activities to meet contemporary demands, integrating digital technologies, and enhancing leadership activities based on strategic thinking. Based on international practices and reforms in Uzbekistan, the article analyzes key mechanisms of innovative management, leadership competencies, and effectiveness assessment criteria.

Keywords

innovative management, education system, strategic thinking, leadership competencies, effectiveness assessment criteria.

Modernizing the education system in the 21st century is emerging as one of the decisive factors in societal development. The use of innovative approaches in modern management ensures the competitiveness of educational institutions, enhances the quality of education, and serves to develop leadership activities in a strategic direction.

The reforms being implemented in the field of education in Uzbekistan are also reflected in the works and speeches of President Sh.M. Mirziyoyev. In particular, the following view serves as a clear example: The foundation of every reform in the education field consists of relying on an innovative approach and creating new systems that meet the demands of the times [1].

Innovative management is not merely the introduction of new technologies, but a comprehensive approach aimed at restructuring organizational activities in accordance

with contemporary demands, updating leadership styles, modernizing internal organizational communication, and effectively managing the educational process. This requires leaders to possess strategic thinking, the ability to introduce advanced practices, and the capacity to form a systematic innovative environment [2].

International experiences also show that for the effective implementation of innovative management, leaders must not only be able to solve organizational issues but also deeply understand social and pedagogical processes. For instance, in the Finnish education system, leaders play a leading role in developing educational institutions through independent decision-making, collaborative work with the pedagogical team, and supporting innovations [3].

The effective organization of innovative activities primarily depends on the leader's managerial potential, strategic thinking, and ability to put new ideas into practice. The main mechanism for organizing this process in educational institutions consists of forming an innovative environment and systematically developing it.

The following mechanisms are of significant importance in organizing the leader's innovative activities:

1. Developing and implementing an innovative strategy. This includes defining the long-term goals of the educational institution, identifying innovative priority areas, and drawing up specific plans for their implementation [4].

2. Introducing advanced management technologies. For example, using digital platforms, electronic document management, online monitoring, and management systems increases leadership efficiency [5].

3. Working in collaboration with the pedagogical team. Innovative activity must be carried out not only through the leader's initiative but also in cooperation with teachers, methodologists, and other staff members [6].

4. Creating a system of motivation and incentives. Material and moral encouragement of educators who introduce innovations ensures the sustainability of innovative activities [7].

5. Establishing external cooperation. New ideas and resources are attracted through collaboration with scientific institutions, foreign educational centers, local authorities, and non-governmental structures [8].

As leaders introduce these mechanisms, their main task is to create an atmosphere of openness, striving for novelty, and collective cooperation within the educational institution. In international practice, effective models of this are observed in the education systems of Finland, Singapore, South Korea, and Germany. For example, in Singapore, leaders have the right to make independent decisions when implementing innovative programs, and they are supported by the state [9].

Systematic work is also being carried out in this regard in Uzbekistan. In particular, the “Development Strategy of New Uzbekistan for 2022–2026” defines digitalization in education, management automation, and the introduction of innovative mechanisms as one of the priority tasks [10]. At the same time, special attention is being paid to forming innovative management skills in professional development courses for leaders as an important part of this process.

The role of the leader's personality is of incomparable importance in the process of managing educational institutions on an innovative basis. A modern leader must manifest not only by performing administrative management functions, but also as a leader who directs the pedagogical team to implement advanced ideas, unites and inspires them [11].

The role of the leader's personality manifests in the following areas:

1. Strategic leadership — the leader determines the future development directions of the educational institution and develops innovative strategies based on

long-term goals. In this regard, they must possess the ability to analyze global and national trends, evaluate the competitive environment, and guide the team toward a clear goal [12].

2. Motivation and inspiration — innovative processes often impose new and unusual tasks on employees. In such conditions, the leader must use various motivational mechanisms to inspire employees, form a positive attitude toward novelty in them, and ensure their active participation [13].

3. Creating an innovative environment — the leader forms an atmosphere of open communication, experience sharing, and striving for novelty in the educational institution. This, in turn, ensures that members of the pedagogical team freely put forward and implement new ideas [14].

4. Managing organizational and resource potential — introducing innovations requires the efficient allocation and management of financial, human, and informational resources. The leader ensures the development of the educational institution through the rational use of these resources [15].

5. Research and analytical capability — in innovative management, the leader relies on a scientific approach, analyzes research results, and uses them in decision-making. This is an important part of modern management, ensuring that decisions are made based on facts and analysis rather than subjectivity [16].

6. Social partnership and external relations — in innovative management, the leader does not limit themselves to internal resources, but establishes cooperation with local and international educational institutions, scientific centers, business structures, and state organizations. Through this, new experiences, knowledge, and financial resources are attracted [17].

Key competencies that should be formed in the leader's personality:

- Innovative competence – the ability to accept, analyze, and implement new ideas.

- Leadership competence – the ability to unite the team, provide strategic direction, and inspire.
- Information and communication competence – skills in using digital technologies, analyzing, and disseminating information.
- Pedagogical competence – a deep understanding of the content and methods of the educational process, the ability to work effectively with the pedagogical team.
- Organizational and management competence – the ability to systematically manage resources and processes.
- Social and ethical competencies – ensuring an atmosphere of fairness, openness, and trust in communication with the team [18].

On the example of international practice. In the education systems of Finland, Singapore, and Germany, the innovative competencies of the leader's personality are supported at the state policy level. For instance, in Finland, school principals are trained in special “innovative leadership” courses, while in Singapore, every leader receives state grants to implement innovative projects [19].

In recent years in Uzbekistan as well, modules on innovative management, digital skills, and strategic thinking have been introduced into the professional development programs for leaders. Special attention is being paid to forming competencies that meet modern requirements in the leader's personality through the digitalization of the education system, the introduction of information platforms, and the automation of management processes.

One of the main tasks of innovative management in the modern education system is to form a system for evaluating the effectiveness of ongoing reforms and introduced innovative mechanisms. Evaluating effectiveness is not just calculating results, but the process of determining the substantive and structural degree of the innovative character

of management processes, conducting a systematic analysis, and defining development prospects.

The system for evaluating effectiveness in innovative management relies on several measurements and criteria. Among them, the following are of special importance:

1. Strategic criteria – the development concept of the educational institution, the precision of strategic goals, and their implementation through innovative approaches. This criterion shows the existence and degree of implementation of long-term innovative policy in the educational institution [20].

2. Organizational and management criteria – the application of innovative management methods in leadership activities, the digitalization of management processes, and the level of using modern information technologies in decision-making. This criterion also encompasses the culture of cooperation between leaders and the pedagogical team [21].

3. Pedagogical criteria – indicators of introducing new approaches into the educational process, updating the content and forms of education, and developing the innovative potential of teachers. This criterion directly affects the quality of education [22].

4. Social-psychological criteria – the level of satisfaction of employees and students in the innovative environment, the formation of openness to novelty, creative activity, and a spirit of cooperation in the team. This criterion determines the stability of the internal environment of the institution and its development potential [23].

5. Economic criteria – include indicators of efficient use of funds through innovative management, attracting investments, redistributing resources, and ensuring financial stability. This criterion is important in evaluating the long-term economic efficiency of innovative activities [24].

In the system of evaluating innovative management effectiveness, it is not enough to merely define criteria. Indicators and methodological approaches also play an important role in this system. For example, specific measurements (indicators) are defined for each criterion, based on which data are collected and analyzed. In this process, it is recommended to widely use methods such as SWOT analysis, monitoring, sociological surveys, and expert evaluations [25].

Additionally, in international practice, approaches such as the EFQM (European Foundation for Quality Management) model, the ISO 21001:2018 educational quality management standard, and the Balanced Scorecard (BSC) are widely used in evaluating the innovative activities of educational institutions. Through these models, it is possible to deeply analyze not only results but also the quality of processes [26].

The system for evaluating the effectiveness of innovative management in the education sector in Uzbekistan is being improved in stages. The “Development Strategy of New Uzbekistan for 2022–2026” outlines the task of creating a system for result-based evaluation of the activities of educational institutions and introducing rating and incentive mechanisms based on the level of innovative activity [27].

In the process of evaluating management effectiveness, not only statistical indicators should be limited, but the innovative culture of the educational institution, the attitude of the leader and the team toward novelty, the creative environment, and the system of continuous improvement must also be taken into account. This is the factor that ensures the true effectiveness of innovative management.

Conclusion. Innovative management plays a decisive role in modernizing the education system and transforming it into a modern institution operating effectively in a global competitive environment. In contemporary conditions, managing educational institutions requires more than just performing administrative functions; it requires forming a comprehensive management system encompassing strategic thinking, the

introduction of innovative approaches, the integration of new educational technologies, and all levels of the organization.

As can be seen from the analytical data above, the theoretical foundations of innovative management are aimed at systematically improving the activities of educational institutions, creating an innovative environment, and developing advanced management competencies of leaders. President Sh.M. Mirziyoyev's views and initiatives in the field of education particularly emphasize that innovations occupy a central place in bringing the education system to a new stage. These thoughts practically demonstrate the necessity of reconstructing management in educational institutions on a strategic basis.

The system for evaluating innovative management effectiveness is an integral part of this process. Scientific literature and international practice particularly emphasize the multidimensionality of this system. Evaluating effectiveness requires the harmonious application of strategic, organizational, pedagogical, social-psychological, and economic criteria. These criteria serve to determine not only results but also the internal content and innovative value of management processes.

At the same time, advanced models of effectiveness evaluation — international standards such as EFQM, ISO 21001:2018, and Balanced Scorecard — serve as an important methodological basis for in-depth analysis of innovative activities and establishing systematic monitoring in educational institutions. A regulatory and legal framework for evaluating the performance and innovative potential of educational institutions has also been created in Uzbekistan, with specific tasks defined in this regard in the “Development Strategy of New Uzbekistan for 2022–2026.”

Improving the management effectiveness evaluation system, developing the innovative environment, and enhancing leader competencies ensure the strategic development of educational institutions. This, in turn, serves as an important factor in

improving the quality of education, adapting the educational process to the requirements of scientific and technical progress, and shaping an educated, competitive generation in society.

From an analytical perspective, it can be concluded that:

- It is impossible to effectively implement the innovative management system without theoretical foundations;
- If the management effectiveness evaluation system is formed based on clear criteria and indicators, the results of the educational institution's development increase;
- It is important to adapt international models to national conditions and harmonize them with legislation and practical activities;
- If enhancing the innovative potential of leaders and pedagogical teams is organized as a systematic process, the management culture of educational institutions will be elevated to a new level.

Thus, innovative management manifests as one of the strategic factors for the sustainable development of the education system, increasing efficiency, and societal progress. The harmonious application of scientific-theoretical research, practical programs, and evaluation systems in this direction serves to fully realize the innovative potential of educational institutions.

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THE ROLE OF THE HUMAN FACTOR IN THE LINGUOPOETICS OF LITERARY TEXTS

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Abstract

This article examines the role of the human factor in the study of the linguopoetics of literary texts, with particular emphasis on the author's personality, individual cognition, aesthetic perspectives, and skill in selecting linguistic units. A literary text is interpreted not merely as a mechanical combination of linguistic units, but as a complex linguistic and aesthetic phenomenon shaped by the author's perception of reality, attitude toward it, and aesthetic worldview. The article also examines the formation and development of the study of literary language and literary texts in Uzbek linguistics based on the scholarly views of a number of linguists. Investigating the linguopoetics of literary texts in relation to the human factor provides a deeper understanding of the intrinsic relationship among the author's individuality, the national language, and literary cognition.

Keywords

human factor, literary text, linguopoetics, literary language, national language, author's personality, authorial individuality, individual style, linguistic choice, literary cognition.

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A literary text is one of the most complex linguistic phenomena in which the aesthetic potential of language is most vividly manifested. In a literary text, language serves not only to convey information but also to express and shape human perception, emotions, evaluations, and aesthetic reinterpretation of reality. In this regard, merely

analyzing linguistic units is insufficient for the study of a literary text. The question of who selects particular linguistic units, for what purpose, and on the basis of what aesthetic and individual needs is also of considerable scholarly significance.

One of the key factors determining the linguopoetic nature of a literary text is the author's individuality. In addition to utilizing the existing resources of the language, the author reorganizes and transforms them in accordance with their individual cognition and aesthetic perspectives. As a result, units belonging to the common language may acquire new meanings, stylistic connotations, and aesthetic functions within a particular literary context.

From this perspective, investigating the linguopoetics of literary texts from the standpoint of the human factor contributes to revealing the interrelationship and interconnectedness of the "language–author–text–reader" continuum.

In Uzbek linguistics, numerous studies have been devoted to the problems of literary language, particularly to the linguopoetics of the literary works of a number of prominent writers. Creative figures such as Fitrat, Elbek, and Oybek also expressed valuable views on the significance of language in literary texts during their respective periods. In particular, Fitrat regarded the language of the people as one of the important sources of the richness of the national language and emphasized the necessity of studying examples of oral folk literature in depth and conducting their research on a scientific basis. He stated: "The pure form of our language can be observed among the people and communities in the countryside. There are epics, fairy tales, proverbs, lyrical songs, melodies, and other forms of oral literature that serve as spiritual nourishment for them. All of these should be recorded with great attention exactly as they emerge from the mouths of the people. We have the works of such poets as Ahmad Yassawi, Rabghuzi, Mashrab, Navoi, Husayn Bayqara, and Munis. Let us examine all of these works meticulously, compare them with one another, and arrive at well-founded

conclusions. When we enter the field equipped with this approach and in this manner, the work accomplished and the results obtained will prove to be genuinely scholarly" [Fitrat, 2009: 141].

In Oybek's views on literary language, the author's responsibility in selecting words occupies a particularly important place. He emphasizes that a writer should approach the selection of words with great care and choose them thoughtfully, "weighing each word carefully" from every perspective [Oybek, 1979: 109]. This view provides an important theoretical basis for relating the linguopoetic characteristics of a literary text to the human factor. Indeed, words in a literary text are not selected arbitrarily: their form, meaning, stylistic connotations, and position within the text are subordinated to the author's particular artistic purpose. In commenting on the language of Qodiriy's works, Oybek notes that the writer makes use of the diverse expressive resources of language in order to influence the reader's emotions and instill particular thoughts and feelings in them [Oybek, 1979: 109]. This observation demonstrates that the expressive potential of language and the author's artistic mastery are inseparable phenomena in a literary text.

Elbek, an enlightened intellectual who wrote not only poetry and prose but also extensively on the Uzbek language and folklore, consistently studied the richness and diversity of the Uzbek language, its sources, as well as the use and functions of words in literary texts. In his writings, he emphasized the importance of preserving the linguistic spirit of a literary work in the process of studying it and of evaluating the work from different perspectives [Elbek, 1924: 75]. Thus, the linguistic analysis of a literary text can produce more comprehensive and scientifically grounded results when it takes into account the individual perspective and creative identity of the author.

One of the principal features distinguishing a literary text from other types of texts is the use of linguistic means for individual and aesthetic purposes. The same linguistic

unit may perform different poetic functions in the texts of different authors. This demonstrates that, alongside the inherent potential of linguistic units, the author's individual choice also plays a significant role.

Pirimqul Qodirov interprets literary language as a common foundation that connects linguistics and literary studies [Qodirov, 1973: 4]. Based on this perspective, it can be argued that the linguistic analysis of a literary text should not be limited to describing its formal aspects; it is also necessary to determine the role and significance of linguistic units within the author's cognitive and creative framework. Authorial individuality is manifested, first and foremost, in such processes as the selection of words, the organization of word combinations, the choice of syntactic constructions, the use of semantic shifts, the literary transformation of folkloric and colloquial expressions, and the assignment of additional aesthetic value to particular linguistic units. In this sense, it is important to study each linguistic unit in a literary text not only in terms of its characteristics as a general-language element but also in relation to the contextual function it acquires through its use by a particular author. Scholars have repeatedly emphasized that the literary text constitutes the primary domain in which the aesthetic function of language is most fully manifested. In Uzbek linguistics, Professor N. Mahmudov's series of scholarly articles devoted to linguopoetics has contributed to the development of fundamental research in this field. His works contain a number of valuable observations concerning the nature of literary texts. In particular, N. Mahmudov notes: "It is completely contrary to reality for a literary work that is linguistically imperfect to claim perfection in terms of its theme and idea, or for a work that is imperfect in terms of its theme and idea to claim linguistic perfection. Therefore, throughout the long and rich history of the literary word, from ancient times to the present day, the question of mastery of language has never been neglected by thoughtful and conscientious masters of the word" [Mirtojiyev, Mahmudov, 1992: 104].

From this perspective, the literary text emerges as a space in which human aesthetic cognition intersects with the expressive potential of language. The author artistically reconstructs reality through linguistic means in accordance with the way they perceive, experience, and evaluate it. Consequently, the linguopoetic study of a literary text makes it possible to identify not only the aesthetic potential of language but also specific features of the author's individual worldview and artistic cognition. The studies of X. Doniyorov and S. Mirzayev likewise analyze the linguistic means that ensure the precision, fluency, imagery, and expressive power of literary language [Doniyorov, Mirzayev, 1962: 173–174]. These characteristics are also closely associated with the author's mastery of selecting linguistic means and organizing them in accordance with a particular artistic purpose.

In Uzbek linguistics, the linguopoetic study of literary texts has expanded considerably in recent decades. In particular, the research of M. Yo'ldoshev devoted to the linguopoetics of literary texts and the principles of their analysis has played an important role in further developing the theoretical and methodological foundations of this field [Yo'ldoshev, 2008]. In studies conducted since the 2000s, increasing attention has been paid to the mastery with which individual authors employ language, their distinctive use of linguistic units at different levels of the language system, and the linguistic features of their individual styles.

In particular, studies devoted to the linguopoetic features of the works and poetry of such authors as O'tkir Hoshimov, Matnazar Abdulhakim, Erkin Samandar, and Usmon Nosir demonstrate the broad scholarly potential of this field [see: Muqimova, Matnazarov, Yaqubova, Yuldashev]. However, despite the expanding scope of existing research, it cannot be stated that the linguopoetic features of all authors who have played significant roles in the history of Uzbek literature and of their works have been comprehensively studied. From this perspective, investigating a particular author's

attitude toward language and individual style is important not only for characterizing the creative work of a particular writer or poet but also for identifying the artistic potential of the national language.

In the process of literary creation, an author does not simply reproduce words and expressive means available in the common language in a ready-made form. Rather, the author selects and combines them in accordance with their artistic purpose, aesthetic perspective, and individual cognition, incorporating them into new contextual relationships. Therefore, an author's individual mode of language use contributes to a broader manifestation of the existing potential of the national language. This process can conventionally be represented through the following sequence: **the potential of the national language – authorial cognition – individual linguistic choice – literary text – linguopoetic effect.**

Within this sequence, the human factor occupies a central position. This is because it is the author who actualizes the aesthetic potential of language and directs it toward a particular artistic purpose. Therefore, the linguopoetics of a literary text should not be studied solely on the basis of the structural or functional characteristics of linguistic units; rather, it is appropriate to examine it in close relation to the author's attitude toward language, individual linguistic choices, and artistic cognition.

A literary text is a complex and multilayered phenomenon from a linguopoetic perspective, and its formation depends not only on the potential of language but also, decisively, on the human factor, particularly the author's individuality. The author's individual cognition, aesthetic perspectives, linguistic intuition, and mastery of word selection determine the distinctive character of a literary text. In Uzbek linguistics, the views of Fitrat, Elbek, Oybek, Pirimqul Qodirov, N. Mahmudov, M. Yo'ldoshev, and other scholars and literary figures have provided an important scholarly foundation for

understanding the intrinsic relationship between literary language and authorial individuality.

In the linguopoetic study of a literary text, asking not only **"Which linguistic unit has been used?",** but also **"Why was this particular unit selected?", "What artistic purpose of the author does it serve?", and "Which potential of the national language does this choice reveal?"** enhances the scholarly significance and analytical depth of the research.

Thus, within the linguopoetics of a literary text, the human factor emerges as a connecting link between the author's individuality and the national language. By investigating an author's individual mastery of language, it is possible to gain a deeper understanding not only of their stylistic distinctiveness but also of the aesthetic, figurative, and expressive potential of the Uzbek national language.

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