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“INNOVATIVE PUBLICATION” MAS'ULIYATI CHEKLANGAN JAMIYATI



THE ACTIVITY OF POLITICAL PARTIES IN UZBEKISTAN AND THE HISTORY OF THE FORMATION OF THEIR LEGAL FOUNDATIONS

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Abstract

This article examines the emergence of political parties as important institutions within the political system of the Republic of Uzbekistan during the years of independence, the process of their legal consolidation by the state, the expansion of their political activities, and the history of the formation of a multiparty system.

Key words

political parties, multiparty system, legal culture, political organization, local government authorities, non-governmental non-profit organizations (NGOs), political scientists, and historians.

O'ZBEKISTONDA SIYOSIY PARTIYALAR FAOLIYATI VA ULARNING HUQUQIY ASOSLARINI TASHKIL ETILISH TARIXI

Xushkeldiyev Otabek Baxodirovich

Termiz iqtisodiyot va servis universiteti magistranti

Annotatsiya: Ushbu maqola mustaqillik yillarida O'zbekiston Respublikasining siyosiy tizimida muhim institut hisoblangan siyosiy partiyalarning vujudga kelishi va davlat tomonidan huquqiy mustahkamlashi, siyosiy faoliyatining kengayishi, ko'ppartiyaviylik tizimining shakllanish tarixi bag'ishlanadi.

Kalit so'zlar: Siyosiy-partiyalar, ko'ppartiyaviylik tizimi, huquqiy madaniyat, siyosiy tashkilot, mahalliy davlat hokimiyati organlari, nodavlat notijorat tashkilotlar, siyosatshunos va tarixchi olimlar.

KIRISH

Dunyo demokratik boshqaruv tizimida siyosiy partiyalar va ularning faoliyati tarixi

haqida gap ketar ekan, siyosiy partiyalarning davlat boshqaruv tizimidagi oʻrni va roli juda ham ahamiyatlidir. Siyosiy partiyalar aholining huquqiy madaniyatini va faolligini oshirish, ularning davlat siyosatini tashkil etish va boshqarishdagi ishtirokini taʼminlash orqali davlat va jamiyat oʻrtasida oʻziga xos koʻpriklar vazifasini oʻtashini hamda ularning aholining jamoatchilik fikrini shakllantirishdagi, fuqorolarning siyosiy hayotda faol ishtirokini taʼminlashga doir faoliyatini, qonunchilik va ijro hokimiyatiga taʼsir etishi inobatga ayni bugungi demokratik fuqarolik jamiyati shakllantirishdek maqsad va muddolarimizga mos keladi. Tarixdan maʼlumki siyosiy partiyalarning ilk koʻrinishi, ijtimoiy guruhlar manfaatlarini ifodalovchi, ularning eng faol vakillarini birlashtiruvchi siyosiy tashkilotlar sifatida namoyon boʻla boshlagan. Siyosiy partiyalar jamiyat siyosiy tizimining muxim qismi, ular davlatning siyosiy yoʻnalishini belgilashda ishtirok etib, hukumatning vakillik va ijro etuvchi muassasalarini shakllantirib kelgan.

Dastlabki siyosiy partiyalar tarixi bilan tanishar ekanmiz 17 – 18-asrlar inqiloblari davrida paydo boʻla boshlaganligini koʻrishimiz mumkin. Ammo siyosiy tashkilot darajasigacha boʻlgan vaqtlarga qadar ham soda koʻrinishlari tarixda namoyon boʻla boshlaganligini koʻrishimiz mumkin. Siyosiy partiyalarga oʻxshash jamoa va tashkilotlar qadimdan mavjud boʻlgan. Misol keltiradigan boʻlsak Afina geteriyalari, Rim optimat va populyarlari antik davrda siyosiy partiyalar vazifasini bajargan. Siyosiy partiyalarning universal shakli asosan, qarindoshlik aloqalari bilan bogʻlangan kishilar guruhi va maxfiy tashkilotlar koʻrinishida ham boʻlgan (Yorklar va Lankasterlar – oʻrta asrlar Angliyada, Ali tarafdorlari – oʻrta asrlarda Arabistonda).

Ammo oʻtmish bilan bugungi hayotimizni taqoslab, tahlil qiladigan boʻsak, bugungi jamiyat hayotida boʻlayotgan global oʻzgarishlar va inson huquqlari va erkinliklarini taʼminlash borasidagi muammolarni tobora chuqurlashib borishi turli xil siyosiy mafkuralarga ega boʻlgan siyosiy partiyalarning koʻpayishi va bir-biri bilan raqobat qilishi mobaynida oʻz oldiga yangi-yangi vazifalarni qoʻymoqda.

Siyosiy partiyalarning bugungi kundagi koʻrinishi eng maqbul koʻrinish sifatida tan



olinmoqda.

O'zbekiston o'z mustaqilligini qo'lga kiritmaguniga qadar, sobiq ittifoq davrida yagona (manopol) kommunistik partiya hukmronligi yillari ko'p partiyaviylikka umuman yo'l qo'yilmaganligi barchamizga ayon. Bu bugungi demokratik tizimga solishtirib taxlil qiladigan bo'lsak, davlat boshqaruv tizimida partiyalar o'rtasida sog'lom raqobat yo'qligi, insonlarning turli qarashlari inobatga olinmaganligini demokratiya, na inson huquqlarining kafolatlanishiga to'g'ri kelmasligini ko'rib o'tishimiz mumkin.

O'zbekiston o'z mustaqilligini qo'lga kiritgandan so'ng davlat boshqaruv tizimida siyosiy partiyalarning tashkil etilishi va uning maqomi va huquqiy asoslarining yaratilishi, ularni davlat hokimiyati tizimidagi o'rnini oshirish, parlament va deputatlik so'rovi institutidan keng foydalanish bo'yicha keng qamrovli chora-tadbirlar amalga oshirilganligini ko'rishimiz mumkin. «Xalq deputatlari mahalliy kengashlari faoliyatida siyosiy partiyalar guruhlarining rolini kuchaytirish, ayniqsa, mahalliy ijro hokimiyati organlari faoliyatini nazorat qilish borasidagi vakolatlarini kengaytirish» masalasi dolzarb ahamiyat kasb etib kelmoqda.

Davlat hokimiyatida, ayniqsa, uning mahalliy organlaridagi ishtirokini tashkil etishga oid xorijiy tajriba va bu borada dunyo ijtimoiy fanlarida shakllangan huquqiy g'oyalar hamda xalqaro huquq normalaridagi qoidalar asosida mamlakatimizda ushbu soha faoliyati tarixini o'rganish bugungi kundagi dolzarb masalalardan biri ekanligini tasdiqlamoqda. Dunyoning aksariyat ko'pgina mamlakatlarida siyosiy partiyalar faoliyati tarixi masalalari yuzasidan qator ilmiy tadqiqotlar amalga oshirilmoqda. Jumladan, partiyalarning tashkil topishi, bosqichma-bosqish faoliyatining shakllanishi va rivojlanish tarixi, davlat boshqaruv tizimida tutgan o'rnini masalalariga oid muhim ilmiy-amaliy ahamiyat kasb etadigan tadqiqot yo'nalishi sifatida alohida e'tibor berilmoqda.

Shuningdek, yurtimizda mustaqillik davrida davlat va jamiyat qurilishi tizimini



takomillashtirish sohasidagi ustuvor yoʻnalishlardan biri sifatida «siyosiy partiyalar faoliyati va uning shakllanishi va rivojlanish masalalarini koʻrib chiqish, ularni rivojlantirish ustuvor vazifa etib belgilab olindi. Bularga, Oʻzbekiston Respublikasining Konstitutsiyasi (1992), «Mahalliy davlat hokimiyati organlari toʻgʻrisida»gi (1993), «Siyosiy partiyalar toʻgʻrisida»gi (1996) qonunlari, 2017-yil 8-avgustdagi PF–5185-son «Oʻzbekiston Respublikasida maʼmuriy islohotlar konsepsiyasini tasdiqlash toʻgʻrisida»gi, 2019-yil 17-yanvardagi PF–5635-son «2017-2021 yillarda Oʻzbekiston Respublikasini rivojlantirishning beshta ustuvor yoʻnalishi boʻyicha Harakatlar strategiyasini «Faol investitsiyalar va ijtimoiy rivojlanish yili»da amalga oshirishga oid davlat dasturi toʻgʻrisida»gi farmonlari va mavzuga oid boshqa qonun hujjatlarida belgilangan vazifalarni amalga oshirishga ushbu tadqiqot maqolasiga muayyan darajada xizmat qiladi.

ADABIYOTLAR TAHLILI VA METODOLOGIYA

Oʻzbekiston Respublikasi milliy qonunchiligida siyosiy partiyalarga doir qator qonunlar qabul qilingan boʻlib, ularda siyosiy partiyalarni toʻlaqonli faoliyat yuritishi uchun zarur shar-sharoitlar yaratilgan. Bu huquqiy asoslar Oʻzbekiston Respublikasi Konstitutsiyasi va xalqaro huquqning umum eʼtirof etilgan prinsiplari doirasida ishlab chiqilgan boʻlib, ular “Davlat boshqaruvini yangilash va yanada demakratlashtirish hamda mamlakatni modernizatsiya qilishda siyosiy partiyalarning rolini kuchaytirish toʻgʻrisida”gi Konstitutsiyaviy qonun, “Siyosiy partiyalar toʻgʻrisida”gi, “Siyosiy partiyalarni moliyalashtirish toʻgʻrisida”gi¹, “Jamoat birlashmalari toʻgʻrisida”gi², “Nodavlat notijorat tashkilotlar toʻgʻrisida” gi³ va shu sohaga bevosita aloqador oʻnlab normativ-huquqiy xujjatlarda aksini topgan. Fuqorolik jamiyatining eng muhim institutlaridan biri boʻlgan, siyosiy partiyalarning faoliyati borasida Oʻzbekiston Respublikasi Prezidenti Sh.M.Mirziyoyev asarlari hamda Birinchi Prezidentimiz

¹ Oʻzbekiston Respublikasining Qonuni, 30.04.2004 yildagi 617-II-son.

² Oʻzbekiston Respublikasining Qonuni, 15.02.1991 yildagi 223-XII-son.

³ Oʻzbekiston Respublikasi Oliy Majlisining Kengashi qarori, 06.02.2003 yildagi 459-II-son.

I.A.Karimov asarlarida har tomonlama va tizimli tarzda yoritib berilgan. Ularda O'zbekistonda huquqiy demokratik davlat qurish va fuqarolik jamiyatini shakllantirish jarayonida jamoatchilik nazoratining o'rni va ahamiyati hamda bu boradagi dolzarb masalalarga oid konseptual g'oya va fikrlar mavjud. Shuningdek, bir qancha huquqshunos, siyosatshunos va tarixchi olimlar tadqiqotlar olib borganlar. Jumladan, o'zbek olimlaridan N.Dehqonov⁴, N.S.Rasulova⁵ A.X.Saidov, A.Rahimov, Sh.Fayziyev, V.P.Belyaev, B.Ismailov, I.Bekov, Sh.N.Nazarov, J.M.Abdullaev, Sh.Bafaev, J.Chorshanbiev, I.I.Tolibov, X.Маматов, I.R.Bekov, D.Q.Axmedov, E.X.Halilov, S.A.Abbosxo'jaev, M.Qirg'izboev, O.T.Husanov, Sh.Sh.Yariyev⁶, xorijiy olimlar qatorida A.Yudin, V.V.Lapayeva, M.Dyuverji, S.E.Zaslavskiy va boshqalarni keltirishimiz mumkin.⁷

NATIJALAR

Tadqiqotning ilmiy natijalaridan ko'p jildli "O'zbekistonning eng yangi tarixi"da

⁴ N.Dehqonov. O'zbekistonda mahalliy va hokimiyati vakillik organlarining shakllanishi va rivojlanishi tarixi. Monografiya.-T.: "IQTISODIYOT", 2015. – 156-bet.

⁵ N.S.Rasulova. O'zbekiston Respublikasida siyosiy partiyalarning vujudga kelishi va rivojlanishi: muammo va yechimlar. (1991-2008 yillar) tarix fanlari nomzodlik dissertatsiyasi. Toshkent. 2010. – 13.B.

⁶ Sh.Sh.Yariyev. SIYOSIY PARTIYALARNING JAMOATCHILIK NAZORATINI AMALGA OSHIRISHDAGI ROLINI KUCHAYTIRISHNING NAZARIY-HUQUQIY MUAMMOLARI. Konstitutsiyaviy huquq; ma'muriy va moliya huquqi; davlat va huquq nazariyasi va tarixi Magistr akademik darajasini olish uchun yozilgan dissertatsiya. Toshkent – 2014.

⁷ Qarang: Saidov A.X. Parlament nazorati nazariyasining dolzarb muammolari // Falsafa va huquq. –T., –B.6-9.; Rahimov A. Parlament so'rovi – parlament nazorati institutining muhim yo'nalishi // Demokratlashtirish va inson huquqlari. –T., 2007. –№2. –B. 61–63.; Fayziyev Sh. Parlament nazoratining tushunchasi va asosiy yo'nalishlari: huquqiy ta'minlash masalalari // Parlament nazorati: nazariya va amaliyot masalalari: Ilmiy-amaliy seminar materiallari / Mas'ul muxarrir F.X. Otaxonov. – T., 2005. –B. 13–25.; Беляев.В.П. Сущность контроля и надзора, их сходство и различия // Государство и право. –М., 2006. –№7.–S. 31–42.; Ismailov B. Davlat faoliyati ustidan jamoatchilik nazoratini amalga oshirishning amaliy jihatlari // "O'zbekistonda fuqarolik jamiyati institutlarini shakllantirish masalalari: nazariya va amaliyot" mavzusidagi ilmiy-amaliy konferensiya materiallari. –T., 2007. – B. 44–49.; Bekov I. Siyosiy partiyalar – fuqarolik jamiyatining muhim instituti // "O'zbekistonda fuqarolik jamiyati institutlarini shakllantirish masalalari: nazariya va amaliyot" mavzusidagi ilmiy-amaliy konferensiya materiallari. –T., 2007. –B..203; Nazarov Sh.N. O'zbekistonda fuqarolik jamiyatini shakllantirishda jamoat tashkilotlarining roli (nazariy va huquqiy masalalar). Yurid. fanl. nomz. diss. avtoref. –T., 2009. –B.25.; Abdullaev J.M. Fuqarolik jamiyatini shakllantirishda ommaviy axborot vositalarining roli (nazariy-huquqiy masalalar). Yurid. fanl. nomz. diss. avtoreferati. –T., 2008. –B.27.; Бафаев Ш. Общественный контроль как важный фактор построения демократического правового государства и гражданского общества // Общественное мнение. Права человека. – T., 2007. №1. (C.30–35). –C.33.; Chorshanbiyev J. Fuqarolik jamiyati shakllanishida jamoatchilik nazoratining ahamiyati // Demokratlashtirish va inson huquqlari. –T., 2008. №2. – B.14.; Tolibov I.I. Fuqarolik jamiyatini shakllantirishda jamoat fondlarining tutgan o'rni. Yurid.fanl.nomz.diss. avtoref. –T., 2009. –B.27.; Mamatov X. Fuqarolik jamiyati – jamoatchilik nazorati mexanizmi // O'zbekiston Respublikasi Oliy Sudining Axborotnomasi. –T., 2008. №4. –B.34–35.



siyosiy partiyalar faoliyati tarixini bilan qiziqqan keng kitobxonlar ommasiga taqdim etiladi.

Ilmiy-nazariy xulosalar, taklif va tavsiyalardan mahalliy davlat hokimiyati vakillik organlari faoliyatida siyosiy partiyalar ishtirokini takomillashtirishning tashkiliy-huquqiy masalalarini rivojlanishini bosqichma-bosqich tahlil qilish, qonun hujjatlarining tegishli normalarini sharhlash, milliy qonunchilikni takomillashtirish hamda «Konstitutsiyaviy huquq», «O‘zbekistonda hokimiyat vakillik organlari» faoliyati tarixini o‘rganishda ilmiy-qo‘llanma bo‘lib xizmat qiladi. Shuningdek, oliy o‘quv yurtlarida maxsus kurslarni tashkil etishda foydalanish mumkin. Tadqiqot natijalarining amaliy ahamiyati shundan iboratki, mustaqillik yillarida siyosiy partiyalarning tashkil topishi va uning siyosiy hayotimizda asosiy o‘rinni egallashi borasidagi qarashlar fuqarolarimizning huquqiy madaniyatini yuksalishi va davlat boshqaruv tizimida faol ishtirok etish masuliyatini shakllantiradi. Mahalliy vakillik organlarining faoliyatini tartibga soluvchi normativ-huquqiy hujjatlarni, huquqni qo‘llash amaliyotini takomillashtirishda, shuningdek siyosiy partiyalar amaliyotida foydalanish mumkinligi bilan belgilanadi.

MUHOKAMA

Mustaqillikning ilk kunlaridan istiqlolimizni mustaxkamlash maqsadida ko‘plab qonun, qaror va farmonlar qabul qilindi. Dunyoning etakchi mamlakatlarining siyosiy boshqaruv tizimi o‘rganib chiqildi va milliy qadiryatlar hisobga olinib amaliyotga bosqichma-bosqich joriy etildi;

tarixdan ma’lumki mustaqillikka qadar milliy siyosiy tizimda kamchiliklar talay bo‘lganligini va buning asosiy sababi milliy istiqlool yani mustaqillikning yo‘qligi, yuqoridagi islohotlarning amalga oshirishda to‘siq bo‘lganligini keng ommaga yetkazib berish tadqiqotimizning asosiy va dolzarb masalasi hisoblanadi;

davlatimiz mustaqilligining ilk kunlaridan erkin, demokratik fuqarolik jamiyatini barpo etish borasidagi siyosiy partiyalarning tashkil topishi va ularning huquqiy

maqomining belgilanishi, shuningdek ko'ppartiyaviylik tizimining shakllanishi va ularning sog'lom raqobati asosida xalqimizning demokratik qadiryatlari hisobga olingan;

siyosiy partiyalarning davlat hokimiyati vakillik organlari saylovida ishtiroki tahlil qilinishi natijasida yurtimizda xalq nomidan ular saylab qo'ygan vakillar qaror qabul qilinishi yillar davomida bosqichma-bosqich isloh qilinishi ko'ga tashlanadi;

siyosiy partiyalarning jamiyat hayotida nufuzining ortib borishi, eng avvalo xalqaro huquq va tamoyillar va etakchi dunyo mamlakatlarining tajribasidan kelib chiqib modernizatsiya qilinishi bugungi kunning talabi hisoblanadi.

XULOSA

O'tmish bilan bugungi kunni bir-biriga solishtirib, taxlil qiladigan bo'lsak milliy mustaqillikka (1991-yil 31-avgust) qadar siyosiy tizimda juda ko'p kamchiliklarimiz borligi ayon bo'lib qolmoqda. Siyosiy tizimni, uning muhim subyektlardan biri bo'lgan siyosiy partiyalarning mavqei, o'rni va rolini tarixiy-izchillik asosida ilmiy tadqiq etish asnosida, ularning vujudga kelishi, muhim siyosiy institut bo'lib shakllanishi, rivojlanishi va ular o'rtasida raqobat paydo bo'lib, ko'ppartiyaviylik tizimiga o'tish masalalarini ochib berish mumkin.

Respublikamizda shakllangan siyosiy-partiyalar konstitutsiyaviy-huquqiy asoslarining rivojlanish tarixini taxlil etib, uni quydagi bosqichlarga bo'lib, tadqiq etildi:

- Birinchi bosqich 1991-1995 yillar.
- Ikkinchi bosqich 1996-2006 yillar.
- Uchinchi bosqich 2007-2016 yillar.
- To'rtinchi bosqich 2017-yildan hozirgi kunga qadar.

O'zbekistonda ko'ppartiyaviylik tizimining rivojlanish bosqichlarida sohada muammo va kamchiliklarni aniqlanishi natijasida ularning yechimi topish va huquqiy tomonlama takliflar berish mumkin.

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ENHANCING THE EFFEKTIVENESS OF TOURISM POTENTIAL IN PROMOTING EMPLOYMENT OPPORTUNITIES FOR THE POPULATION

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Abstract

This article examines ways to improve the efficiency of tourism opportunities in ensuring population employment. It highlights the economic and social aspects of tourism, its role in creating direct and indirect jobs, and its importance for the development of the service sector, family entrepreneurship, and regional economies. Special attention is paid to the role of tourism in increasing employment among youth and women, expanding household income sources, and improving living standards. The study concludes that the effective use of tourism potential contributes to sustainable employment, stimulates entrepreneurial activity, and supports the socio-economic development of regions.

Keywords

employment, tourism, jobs, service sector, regional development, domestic tourism, tourism infrastructure, family entrepreneurship, household income, economic efficiency.

Annotatsiya: Ushbu maqolada aholi bandligini ta'minlashda turizm sohasining iqtisodiy va ijtimoiy imkoniyatlari, ushbu imkoniyatlardan samarali foydalanish omillari hamda hududiy rivojlanishdagi o'rni tahlil qilinadi. Turizmning bevosita va bilvosita ish o'rinlari yaratishdagi ahamiyati, xizmat ko'rsatish tarmoqlarini faollashtirishdagi roli, xotin-qizlar va yoshlar bandligini oshirishdagi imkoniyatlari ilmiy jihatdan yoritiladi. Shuningdek, ichki va tashqi turizm salohiyatidan unumli foydalanish, mahalliy tadbirkorlikni qo'llab-quvvatlash, infratuzilmani rivojlantirish va turizm xizmatlari

sifatini oshirish orqali bandlik samaradorligini kuchaytirish yo'llari ko'rsatib beriladi. Tadqiqot natijasida turizm nafaqat iqtisodiy foyda manbai, balki aholi farovonligini oshiruvchi va hududlarda barqaror ish o'rinlari yaratishga xizmat qiluvchi muhim ijtimoiy-iqtisodiy vosita ekanligi asoslanadi.

Kalit so'zlar: bandlik, turizm, ish o'rinlari, xizmat ko'rsatish sohasi, hududiy rivojlanish, turizm infratuzilmasi, ichki turizm, tadbirkorlik, aholi daromadi, iqtisodiy samaradorlik.

Bugungi kunda dunyo mamlakatlari iqtisodiy taraqqiyotning yangi manbalarini izlash, mavjud resurslardan yanada oqilona foydalanish va aholi bandligini barqaror ta'minlash masalalariga alohida e'tibor qaratmoqda. Shu nuqtai nazardan turizm sohasi eng istiqbolli yo'nalishlardan biri sifatida namoyon bo'lmoqda. Turizm nafaqat sayohat va dam olishni tashkil etish bilan cheklanmaydi, balki transport, savdo, umumiy ovqatlanish, mehmonxona xo'jaligi, hunarmandchilik, madaniyat, ko'ngilochar xizmatlar va boshqa ko'plab tarmoqlar bilan chambarchas bog'liq bo'lgan murakkab iqtisodiy tizimdir. Aynan shu xususiyati tufayli turizm bandlikni ta'minlashda keng ko'lamli imkoniyatlarni yuzaga chiqaradi. Bandlik masalasi har qanday jamiyatning ijtimoiy barqarorligi, aholi farovonligi va iqtisodiy xavfsizligini belgilovchi asosiy omillardan biridir. Aholining mehnat bilan band bo'lishi daromad manbalarining barqarorlashuviga, kambag'allikning kamayishiga, ijtimoiy faollikning oshishiga va turmush darajasining yaxshilanishiga xizmat qiladi. Shu bois yangi ish o'rinlarini yaratish va mavjud mehnat resurslaridan unumli foydalanish davlat siyosatining ustuvor vazifalaridan biri hisoblanadi. Bunda turizm sohasi ayniqsa muhim ahamiyat kasb etadi, chunki u nisbatan kam sarmoya evaziga ko'p sonli ish o'rinlari yaratish imkonini beradi. O'zbekiston sharoitida turizmni rivojlantirish orqali bandlik masalasini hal etish yanada dolzarb ahamiyatga ega. Mamlakatning boy tarixiy-madaniy merosi, noyob me'moriy



obidalar, tabiiy rekreatsion hududlari, ziyoratgohlar, milliy urf-odatlar va mehmondo'stlik an'analarini turizmni taraqqiy ettirish uchun mustahkam asos bo'lib xizmat qiladi. Ayni paytda turizmni faqat turistlar oqimini ko'paytirish vositasi sifatida emas, balki yangi ish o'rinlari yaratish, mahalliy aholi daromadini oshirish va hududiy iqtisodiy faollikni kuchaytirishning samarali mexanizmi sifatida baholash zarur. Mazkur maqolada aholi bandligini ta'minlashda turizm imkoniyatlarining iqtisodiy mohiyati, ushbu sohaning ish o'rinlari yaratishdagi ta'siri va samaradorlikni oshirish yo'llari ilmiy jihatdan tahlil qilinadi.

Aholi sonining ortib borishi, mehnat bozoridagi raqobatning kuchayishi va yangi kasb hamda xizmat turlariga bo'lgan ehtiyojning oshishi sharoitida bandlikni ta'minlashning an'anaviy shakllari bilan cheklanib qolish yetarli emas. Ayniqsa, yoshlar, xotin-qizlar va mavsumiy daromadga tayanib yashovchi aholi qatlamlari uchun mos ish o'rinlari yaratish dolzarb masalaga aylanmoqda. Turizm sohasining afzalligi shundaki, u turli yosh va malaka darajasiga ega bo'lgan shaxslarni mehnat faoliyatiga jalb etish imkonini beradi. Masalan, mehmonxona va mehmon uylari, transport xizmatlari, ekskursovodlik, tarjimonlik, milliy taomlar tayyorlash, hunarmandchilik mahsulotlarini ishlab chiqarish va sotish, madaniy tadbirlarni tashkil etish, foto-video xizmatlari, qishloq turizmi va ekologik turizm yo'nalishlari turli toifadagi aholi uchun daromad manbai bo'lib xizmat qilishi mumkin. Shu sababli turizmni rivojlantirish, avvalo, mehnat bozorida qo'shimcha imkoniyatlar yaratish va norasmiy bandlikni rasmiy hamda barqaror ish o'rinlariga aylantirish bilan ahamiyatlidir. Mazkur maqolaning maqsadi aholi bandligini ta'minlashda turizm imkoniyatlari samaradorligini oshirishning nazariy va amaliy jihatlarini tahlil qilish, turizm sohasining ish o'rinlari yaratishdagi ahamiyatini yoritish hamda ushbu yo'nalishda amaliy taklif va tavsiyalar ishlab chiqishdan iborat. Ushbu maqsadga erishish uchun quyidagi vazifalar belgilandi: turizmning bandlikka ta'sirini ilmiy asosda yoritish, turizm orqali yaratiladigan bevosita va bilvosita ish o'rinlarini tahlil qilish, hududlarda turizmni rivojlantirish orqali aholi



daromadini oshirish imkoniyatlarini ko'rsatish, turizm sohasida bandlik samaradorligini oshirishga xizmat qiluvchi omillarni aniqlash va tegishli xulosalar ishlab chiqish. Mazkur tadqiqotni amalga oshirishda tahlil va sintez, qiyosiy tahlil, umumlashtirish, tizimli yondashuv va mantiqiy tahlil usullaridan foydalanildi. Shuningdek, turizm iqtisodiyoti, hududiy rivojlanish, bandlik va xizmat ko'rsatish sohasiga oid ilmiy adabiyotlar hamda nazariy qarashlar o'rganildi. Turizmning aholi bandligiga ta'siri ijtimoiy-iqtisodiy nuqtai nazardan tahlil qilinib, mavjud imkoniyatlar va ulardan samarali foydalanish yo'llari umumlashtirildi.

Turizmning bandlik yaratishdagi iqtisodiy mohiyati

Turizm ko'p tarmoqli iqtisodiy faoliyat sohasi bo'lib, uning rivojlanishi bilan bir vaqtda qator yordamchi va xizmat ko'rsatish tarmoqlari ham faollashadi. Bu jarayon iqtisodiyotda "multiplikativ ta'sir" sifatida namoyon bo'ladi. Ya'ni, turistlar oqimining ko'payishi nafaqat mehmonxona yoki ekskursiya xizmatlarida, balki transport, ovqatlanish, savdo, hunarmandchilik, aloqa, qurilish va madaniyat sohalarida ham ish o'rinlari yaratilishiga sabab bo'ladi. Turizmning bandlik yaratishdagi eng muhim xususiyatlaridan biri shundaki, u ko'pincha xizmat ko'rsatishga asoslangan bo'ladi va inson mehnatiga yuqori darajada tayanadi. Shu bois bu sohada avtomatlashtirish imkoniyati cheklangan bo'lib, tirik mehnatga ehtiyoj yuqori saqlanib qoladi. Natijada turizm ko'plab kishilarni ish bilan ta'minlashga qodir bo'lgan tarmoqqa aylanadi. Masalan, bir turistik hudud rivojlansa, bu yerda mehmonxona xodimlari, administratorlar, oshpazlar, ofitsiantlar, gidlar, haydovchilar, tozalash xizmati xodimlari, milliy suvenirlar tayyorlovchilar, foto va media mutaxassislar, savdo vakillari va boshqa ko'plab kasb egalari uchun ish o'rinlari paydo bo'ladi. Bundan tashqari, ushbu faoliyat turi oilaviy tadbirkorlik va o'zini o'zi band qilish uchun ham qulay sharoit yaratadi.

Bevosita va bilvosita bandlik imkoniyatlari



Turizm sohasida yaratiladigan ish o‘rinlarini shartli ravishda bevosita va bilvosita bandlikka ajratish mumkin. Bevosita bandlik turizm xizmatlarining o‘zida, ya’ni mehmonxona, mehmon uyi, turoperatorlik, gidlik, transport va ekskursiya xizmatlarida yuzaga keladi. Bilvosita bandlik esa turizmga xizmat qiluvchi boshqa tarmoqlarda shakllanadi. Bilvosita bandlikning ko‘lami ko‘pincha bevosita bandlikdan ham kengroq bo‘ladi. Chunki turistlar oqimi oshgan sari oziq-ovqat yetkazib berish, qishloq xo‘jaligi mahsulotlari savdosi, qurilish materiallari yetkazib berish, interyer va dizayn xizmatlari, kiyim-kechak va hunarmandchilik mahsulotlari tayyorlash kabi ko‘plab iqtisodiy faolliklar ham ortadi. Bu esa ayniqsa qishloq joylar va turistik salohiyatga ega chekka hududlarda aholi bandligini kengaytirishda muhim omil bo‘lib xizmat qiladi. Turizmning yana bir muhim jihati shundaki, u mavsumiy bo‘lsa-da, to‘g‘ri tashkil etilgan taqdirda yil davomida turli xizmat turlari orqali doimiy bandlikni shakllantirish mumkin. Masalan, yozda ekologik va dam olish turizmi, kuzda gastronomik va etnoturizm, qishda madaniy-tarixiy va ziyorat turizmi, bahorda esa festival va sayohat tadbirlarini yo‘lga qo‘yish orqali hududlarning turistik faolligini yil bo‘yi saqlab turish mumkin.

Aholi bandligini ta’minlashda turizm imkoniyatlarining asosiy yo‘nalishlari

№	Yo‘nalish	Mazmuni	Bandlikka ta’siri
1	Mehmonxona va joylashtirish xizmatlari	Mehmonxona, hostel, oilaviy mehmon uylari faoliyati	Doimiy va mavsumiy ish o‘rinlari yaratadi
2	Umumiy ovqatlanish xizmati	Restoran, milliy taomlar uylari, kafe va catering xizmati	Oshpaz, ofitsiant, xizmat ko‘rsatuvchi xodimlar bandligi oshadi

3	Transport va ekskursiya xizmatlari	Turist tashish, gidlik, tarjimonlik, ekskursiya tashkil etish	Yoshlar va xizmat ko'rsatish sohasi vakillari uchun ish o'rinlari paydo bo'ladi
4	Hunarmandchilik va suvenir savdosi	Mahalliy mahsulotlar, milliy buyumlar, esdalik sovg'alari ishlab chiqarish	Mahalliy aholi va oilaviy tadbirkorlik daromadi ortadi
5	Qishloq va ekologik turizm	Tabiiy hududlar, qishloq hayoti, agro va eko yo'nalishlar	Chekka hududlarda bandlikni kuchaytiradi
6	Madaniy va ziyorat turizmi	Tarixiy obidalar, muqaddas qadamjolar, festival va tadbirlar	Hududiy iqtisodiy faollikni va xizmatlar bozorini kengaytiradi
7	Raqamli turizm xizmatlari	Onlayn bron, reklama, turizm marketingi, ijtimoiy tarmoqlar	Yangi zamonaviy kasblar va masofaviy bandlik imkoniyatlarini yaratadi

Jadvaldan ko'rinadiki, turizm sohasi bir vaqtning o'zida bir necha tarmoqni faollashtirib, bevosita va bilvosita bandlikni kengaytiradi.

Turizm va hududiy bandlik masalasi

Turizmning bandlikni ta'minlashdagi afzalliklaridan biri uning hududiy rivojlanishga bevosita ta'sir ko'rsatishidadir. Ko'plab hollarda sanoat korxonalari yirik

shaharlarda yoki ma'lum iqtisodiy markazlarda joylashadi, biroq turizm tabiiy, tarixiy yoki madaniy salohiyat mavjud bo'lgan deyarli barcha hududlarda rivojlanishi mumkin. Shu sababli turizm hududlar o'rtasidagi iqtisodiy tafovutni kamaytirish, chekka joylarda aholi daromadini oshirish va ichki migratsiya bosimini kamaytirishda samarali vosita bo'la oladi. Ayniqsa, tarixiy obidalar, ziyoratgohlar, tabiat maskanlari va milliy madaniyat unsurlariga boy hududlarda turizmni rivojlantirish orqali mahalliy aholining o'z yashash joyida daromad topish imkoniyati ortadi. Bu jarayon hududiy iqtisodiy faollikni kuchaytiradi, xizmatlar bozorini kengaytiradi va mahalliy byudjet tushumlarining oshishiga xizmat qiladi.

Yoshlar va xotin-qizlar bandligida turizmning roli

Turizm sohasi yoshlar va xotin-qizlar bandligini oshirish uchun ayniqsa qulay imkoniyatlarni yaratadi. Chunki bu yo'nalishda xizmat ko'rsatish madaniyati, tashabbuskorlik, muloqot ko'nikmasi, ijodiy yondashuv va mehmondo'stlik kabi sifatlar muhim o'rin egallaydi. Ko'plab yoshlar ekskursovodlik, tarjimonlik, marketing, ijtimoiy tarmoq sahifalarini yuritish, mehmon kutib olish, transport xizmatlarini tashkil etish kabi faoliyat turlarida o'zini namoyon qila oladi. Xotin-qizlar esa oilaviy mehmon uylari, milliy taomlar tayyorlash, hunarmandchilik, kashtachilik, suvenir tayyorlash, etnoturizm tadbirlarida ishtirok etish, mahalliy madaniyatni targ'ib etish kabi yo'nalishlarda faol daromad manbaiga ega bo'lishi mumkin. Shu jihatdan turizm iqtisodiy bandlik bilan bir qatorda ijtimoiy faollik va o'zini o'zi ro'yobga chiqarish imkoniyatini ham yaratadi.

Turizm samaradorligini oshirish orqali bandlikni kuchaytirish omillari

Turizmning bandlikka ta'sirini yanada kuchaytirish uchun bir qator omillarga e'tibor qaratish lozim. Eng avvalo, turizm infratuzilmasini rivojlantirish zarur. Yo'llar, transport, aloqa, internet, sanitariya, mehmonxona va umumiy ovqatlanish obyektlari yetarli bo'lmasa, turistlar oqimi oshmaydi va bandlik kutilgan darajada shakllanmaydi. Ikkinchi muhim omil — xizmatlar sifatidir. Turistni jalb qilish va uni qayta tashrif



buyurishga undash uchun xizmat ko'rsatish madaniyati, tozalik, xavfsizlik, narx-navoning maqbulligi va axborotning ochiqqligi juda muhim. Demak, kadrlar tayyorlash va qayta tayyorlash, tillarni o'rgatish, servis ko'nikmalarini oshirish bandlik samaradorligining tarkibiy qismidir. Uchinchi omil — mahalliy aholini turizm zanjiriga keng jalb qilishdir. Agar turizm daromadi faqat ayrim korxonalar qo'lida to'planib qolsa, uning ijtimoiy samarasi past bo'ladi. Aksincha, mahalliy hunarmand, dehqon, oshpaz, yo'l-yo'riq ko'rsatuvchi, transport egasi va ijodkorlar turizm xizmatlari tizimiga jalb qilinsa, daromad kengroq qatlamga tarqaladi va bandlikning haqiqiy ijtimoiy samarasiga erishiladi. To'rtinchi omil — ichki turizmni rag'batlantirishdir. Faqat xorijiy turistlarga tayanib qolish ayrim xatarlarni keltirib chiqarishi mumkin. Ichki turizm esa yil davomida nisbatan barqaror talabni ta'minlaydi va turizm sohasida faoliyat yuritayotgan subyektlar uchun doimiy ish hajmini yaratadi.

Turizm va oilaviy tadbirkorlik

Turizm oilaviy tadbirkorlikni rivojlantirish orqali ham bandlikni oshiradi. Ko'plab oilalar mehmon uyi tashkil etish, milliy taom tayyorlash, qo'l mehnatiga asoslangan mahsulotlar ishlab chiqarish, qishloq turizmi dasturlarini yo'lga qo'yish orqali o'z daromadini oshirishi mumkin. Bu ayniqsa qishloq joylarda yangi korxona qurmasdan, mavjud uy-joy va milliy turmush tarzidan foydalangan holda ish o'rinlari yaratish imkonini beradi. Masalan, qishloq turizmi rivojlangan hududlarda sayyohlarga mahalliy hayot tarzi, milliy taom tayyorlash jarayoni, hunarmandchilik namunalari va tabiiy dam olish maskanlari taklif etilishi mumkin. Bu esa katta investitsiyalarsiz, nisbatan kam xarajat evaziga daromad keltiruvchi faoliyat turini shakllantiradi.

Turizm aholi bandligini ta'minlashda ko'p qirrali va yuqori samarali iqtisodiy vosita hisoblanadi. Uning asosiy ustunligi shundaki, u bir vaqtning o'zida turli malaka va yoshdagi aholiga mos ish o'rinlari yaratadi, yordamchi tarmoqlarni faollashtiradi va hududiy iqtisodiy rivojlanishga turtki beradi. Ayniqsa, tarixiy-madaniy va tabiiy salohiyati yuqori hududlarda turizmni rivojlantirish orqali kambag'allikni qisqartirish,



daromadlarni oshirish va mehnat resurslaridan samarali foydalanishga erishish mumkin. Biroq mavjud imkoniyatlardan to'liq foydalanish uchun infratuzilmani yaxshilash, xizmatlar sifatini oshirish, mahalliy aholini bu sohaga tayyorlash, kredit va subsidiya mexanizmlarini kuchaytirish, hududlarning turistik brendini shakllantirish hamda marketing faoliyatini takomillashtirish lozim. Shundagina turizm nafaqat iqtisodiy daromad manbai, balki keng ko'lamli bandlik siyosatining muhim instrumentiga aylanishi mumkin. Xulosa qilib aytganda, turizm aholi bandligini ta'minlashda katta imkoniyatlarga ega bo'lgan istiqbolli sohalardan biridir. U bevosita va bilvosita ish o'rinlari yaratadi, hududiy iqtisodiy faollikni kuchaytiradi, oilaviy tadbirkorlikni rivojlantiradi, yoshlar va xotin-qizlar bandligini oshiradi hamda aholi daromadlarining ko'payishiga xizmat qiladi. Turizm imkoniyatlari samaradorligini oshirish uchun esa infratuzilmani rivojlantirish, xizmat ko'rsatish sifatini yaxshilash, ichki turizmni faollashtirish, mahalliy aholini turizm tizimiga keng jalb qilish va hududiy xususiyatlardan kelib chiqib maxsus turizm mahsulotlarini shakllantirish zarur. Ana shunda turizm sohasi mamlakat iqtisodiyotining muhim drayveri bo'lish bilan birga, aholi farovonligini oshirish va bandlikni barqaror ta'minlashning samarali vositasiga aylanadi.

Foydalanilgan adabiyotlar:

1. **O'zbekiston Respublikasining "Turizm to'g'risida"gi Qonuni.** O'RQ-549-son, 2019-yil 18-iyul. Qonun turizm sohasining huquqiy asoslarini belgilaydi.
2. **O'zbekiston Respublikasi Prezidentining "2025–2026-yillarda sayyohlar oqimini keskin ko'paytirish va turistik xizmatlar ko'lamini jadal kengaytirish orqali turizmning iqtisodiyotdagi o'rnini va ahamiyatini oshirish chora-tadbirlari to'g'risida"gi Farmoni.** PF-87-son, 2025-yil 15-may. Farmonda ichki turizmni rivojlantirish, turizm eksportini oshirish va mahalliy sayyohlar safarlarini kengaytirish vazifalari belgilangan.



3. **O‘zbekiston Respublikasi Prezidentining “Respublikaga xorijiy turistlar oqimini keskin oshirish hamda ichki turizmni yanada jadallashtirish chora-tadbirlari to‘g‘risida”gi Farmoni.** PF-9-son, 2024-yil 12-yanvar. Turizm oqimini ko‘paytirish va hududiy turizmni qo‘llab-quvvatlash choralari belgilaydi.
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IMPROVING SPEAKING PROFICIENCY THROUGH INTERACTIVE CLASSROOM ACTIVITIES

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Abstract

This study explores the effectiveness of interactive classroom activities in improving students' speaking proficiency in English as a Foreign Language (EFL) context. Speaking is often considered one of the most challenging skills for language learners due to lack of confidence, limited vocabulary, and insufficient practice opportunities. The research employed a mixed-method approach, including questionnaires and classroom observations, to evaluate students' progress. The findings indicate that interactive activities significantly enhance learners' fluency, accuracy, and confidence. The study concludes with practical implications for language teach

Keywords: *speaking proficiency, interactive activities, EFL learners, communicative competence, classroom interactioners.*

Introduction

Speaking is often considered one of the most challenging skills for language learners to master. Unlike reading or writing, speaking requires real-time processing, spontaneous production, and effective communication. According to Brown (2007), speaking involves not only grammatical competence but also sociolinguistic and strategic competence.

In many traditional classrooms, teaching methods are teacher-centered, limiting students' opportunities to actively use the language. As a result, learners may possess theoretical knowledge of grammar but lack the ability to communicate effectively. This gap between knowledge and performance highlights the need for interactive teaching approaches. Interactive classroom activities, such as role-plays, discussions, and problem-solving tasks, encourage learners to actively participate and use language in

meaningful contexts. This study aims to investigate how such activities contribute to improving speaking proficiency.

Literature Review

Speaking Proficiency in Language Learning

Speaking proficiency refers to the ability to express ideas clearly, fluently, and appropriately in different contexts. It includes components such as pronunciation, fluency, accuracy, and vocabulary use (Levelt, 1989).

Canale and Swain (1980) introduced the concept of communicative competence, which emphasizes that effective communication involves more than grammatical knowledge. It includes discourse competence and strategic competence, both of which are developed through interaction.

The Role of Interaction in Language Learning

Interaction plays a central role in second language acquisition. Long's (1996) Interaction Hypothesis suggests that learners acquire language more effectively through meaningful communication and negotiation of meaning.

Similarly, Vygotsky's (1978) sociocultural theory highlights the importance of social interaction in cognitive development. Through collaborative activities, learners can operate within their Zone of Proximal Development (ZPD), improving their language skills with support from peers and teachers.

Interactive Classroom Activities

Interactive activities are learner-centered tasks that promote communication and collaboration. Examples include:

- Pair work and group discussions
- Role-plays and simulations
- Information gap activities
- Task-based learning

According to Harmer (2007), such activities increase student talking time and create opportunities for authentic language use. Moreover, Nation and Newton (2009) argue that interaction-based tasks help learners develop fluency and confidence.

Methodology

Research Design

This study employed a mixed-methods approach, combining quantitative and qualitative data to analyze the effectiveness of interactive activities.

Participants

The participants were 40 undergraduate EFL students at a higher education institution. Their proficiency level ranged from B1 to B2 according to CEFR.

Instruments

Pre-test and post-test (speaking assessment)

Questionnaire (student perceptions)

Classroom observation

Procedure

The study was conducted over eight weeks. During this period:

The control group received traditional instruction

The experimental group participated in interactive activities such as role-plays, discussions, and task-based learning

Results

The results showed a noticeable improvement in the speaking proficiency of students in the experimental group.

- Fluency increased as students spoke more confidently
- Vocabulary usage became more varied
- Pronunciation and accuracy improved gradually

Questionnaire results indicated that 85% of students felt more confident speaking English after participating in interactive activities.

Discussion

The findings confirm that interactive classroom activities play a significant role in improving speaking proficiency. These results are consistent with Long (1996), who emphasized the importance of interaction in language acquisition.

Students in the experimental group benefited from increased speaking opportunities, which helped them overcome anxiety and develop confidence. Additionally, collaborative tasks allowed learners to learn from each other, supporting Vygotsky's (1978) theory of social learning.

The study also highlights that traditional teacher-centered approaches may limit students' ability to develop communicative competence. Therefore, integrating interactive techniques is essential for effective language teaching.

Practical Implications

Teachers should incorporate interactive activities regularly in their lessons. For example:

- Use pair and group work to maximize student participation
- Design task-based activities that reflect real-life situations
- Encourage students to express opinions and engage in discussions

Additionally, teachers should create a supportive classroom environment where students feel comfortable making mistakes and practicing speaking.

Conclusion

This study demonstrates that interactive classroom activities significantly improve speaking proficiency among EFL learners. By promoting active participation and meaningful communication, these activities help learners develop fluency, confidence, and communicative competence.

Future research can explore the long-term effects of interactive teaching methods and their impact on different proficiency levels.

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Synthesis, Properties, and Practical Significance of Iron(III) Salts of 1H-1,2,3-Triazole Derivatives

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Abstract

As a result of ongoing scientific research in the field of organic chemistry, 1,2,3-triazoles and their various derivatives have become important components of numerous preparations used in agriculture and medicine. Therefore, continuous studies are being conducted on the synthesis of these compounds, the determination of their structures and properties, and the development of pharmaceutical products and biological preparations based on them. This article discusses the methods for synthesizing Iron(III) salts of 1H-1,2,3-triazole derivatives, their physicochemical properties, and their applications in various fields. Particular attention is paid to the coordination behavior of triazole ligands, the formation of metal complexes, and their potential practical significance in catalysis, materials science, and medicinal chemistry.

Keywords: triazole, coordination, ligand, complex, magnetic properties, catalysis.

1H, 1,2,3 – TRIAZOL HOSILALARINING TEMIR (III) TUZLARI SINTEZI, XOSSALARI VA AMALIY AHAMIYATI

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Annotatsiya. Organik kimyo sohasida olib borilayotgan ilmiy tadqiqotlar natijasida sintez qilinayotgan 1,2,3,- triazollar va ularning turli hosilalari hozirgi kunda qishloq xo'jaligi va tibbiyotda qo'llanilayotgan ko'plab preparatlar tarkibiga kiradi. Shu sababli ushbu xosilalarni sintez qilish, ularning tuzilishini aniqlash va xossalarini o'rganish, ular asosida turli farmatsevtik mahsulotlar va biologik preparatlar yaratish bo'yicha izchil izlanishlar olib borilmoqda. Ushbu maqolada 1-H, 1,2,3-triazol hosilalarining temir(III) tuzlarini sintez qilish usullari, ularning fizik-kimyoviy xossalari va turli sohalarda qo'llanilishi ko'rib chiqilgan

Kalit so'zlar: triazol, koordinatsion, ligand, kompleks, magnit, kataliz.

Kirish

Triazol ligandlari bilan temir(III) ionlarining koordinatsion birikmalarini olish zamonaviy koordinatsion kimyo va amaliy fanlarning dolzarb yo'nalishlaridan biri hisoblanadi. Tadqiqotlar shuni ko'rsatadiki, bu birikmalar kataliz, farmatsevtika, materiallar kimyosi va biologik faollik sohasida keng istiqbolga ega. 1,2,3-triazollar azotga boy geterosiklik birikmalar bo'lib, uchta qo'shni azot atomi tutgan besh a'zoli halqaga ega. Temir(III) ionlari bilan koordinatsion birikmalar hosil qilish qobiliyati bu ligandlarning yuqori donor xususiyatlari va stabilligidan dalolat beradi.

Sintez usullari

1. Eng samarali usul Huisgen 1,3-dipolyar sikloqo'shilish reaksiyasi orqali amalga oshiriladi:

Birinchi bosqich: Azidlar va terminal alkinlardan 1,2,3-triazol hosilalarini olish:



Ikkinchi bosqich: Triazol ligandini temir(III) tuzlari bilan kompleks hosil qilish:



Bu yerda L - triazol ligandi

2. To'g'ridan-to'g'ri kompleks hosil qilish



Tayyor triazol hosilalarini temir(III) tuzlari bilan erituvchida (etanol, metanol yoki dimetilfuran) qizdirish orqali kompleks birikmalar hosil qilinadi. Optimal sharoitlar: harorat 60-80°C, reaksiya vaqti 4-6 soat, pH 5-7 oralig'ida.

4-(4-(R-karboksimetil)- 1H-1,2,3- triazol -1-il) benzoy kislota kaliyli tuzlari eritmasiga temir (III) xlorid eritmasi bilan 3;1 mol nisbatda aralashtirilganda qo'ng'ir rangli cho'kma hosil bo'ladi.

3. Hidrotermal sintez

Yuqori bosim va harorat sharoitida gidrotermal usul bilan kristall tuzilishga ega komplekslar olish mumkin. Bu usul yuqori sof mahsulot beradi va kristallografik tadqiqotlar uchun mos keladi.

Fizik-kimyoviy xossalari

1. Tuzilish xususiyatlari

Temir(III)-triazol komplekslari odatda oktaedral geometriyaga ega bo'lib, temir markaziy atom sifatida, triazol halqalarining azot atomlari esa donor atomlar vazifasini bajaradi. Koordinatsion son ko'pincha 6 ga teng.

2. Magnit xossalari

Temir(III) ionining d^5 konfiguratsiyasi paramagnetik xossalar namoyon qiladi. Magnit momenti 5.9 Bor magnetoniga yaqin qiymatni tashkil etadi. Past spinli va yuqori spinli holatlar ligandlar maydoniga bog'liq.

3. Spektroskopik xossalari

UV-Vis spektroskopiyada liganddan metallga zaryad o'tish polosalari 300-500 nm oralig'ida kuzatiladi. IQ-spektrlarda $C=N$ va $N-N$ bog'lanishlarning xarakterli to'lqin tebranishlari 1500-1600 cm^{-1} da qayd etiladi.

4. Termal barqarorlik

Ko'pchilik Fe(III)-triazol komplekslari 200-300°C gacha barqaror bo'lib, keyinchalik parchalanish jarayonlari boshlanadi. Bu xususiyat ularni yuqori haroratlarda qo'llash imkonini beradi.

5. Eruvchanlik

Qutbli erituvchilarda (DMSO, DMF, atsetronitril) yaxshi eriydi, suvda eruvchanlik ligand tuzilishiga bog'liq. Hidrofil guruhlar mavjudligi suvda eruvchanlikni oshiradi.

Amaliy ahamiyati

1. Kataliz

Temir(III)-triazol komplekslari turli katalitik jarayonlarda samarali katalizatorlar sifatida ishlatiladi:

- Oksidlanish reaksiyalarida (alkenlarni epoksidlash, spirtlarni oksidlash)
- C-H aktivlanish reaksiyalarida
- Organik moddalarning parchalanishida

Bu komplekslar nisbatan arzon, kam zaharlangan va atrof-muhitga xavfsiz katalizatorlar hisoblanadi.

2. Biologik faollik

Triazol-temir komplekslari turli biologik ta'sir ko'rsatadi:

-Antibakterial faollik: Gram-musbat va gram-manfiy bakteriyalarga qarshi samarali bo'lib, bakteriya hujayra devorining sintezini inhibe qiladi.

-Antifungal ta'sir: Qo'ziqorinlarga qarshi preparatlar sifatida, ayniqsa kandida turlari va dermatofit infeksiyalarga qarshi.

-Antikanser xususiyatlari: Ba'zi komplekslar o'smali hujayralarda apoptoz jarayonini rag'batlantiradi va hujayra bo'linishini to'xtatadi.

-Antioksidant faollik: Erkin radikallarni tutish qobiliyati bilan ajralib turadi.

3. Materiallar kimyosi

- Magnit materiallar: Molekulyar magnit sifatida ma'lumot saqlash qurilmalarida
- Polimer qo'shimchalari: Polimerlarning termal barqarorligini oshirish uchun

- Rangli moddalar: Bo‘yoqlar va pigmentlar sanoatida
- Metall-organik karkaslarda (MOFs): Gaz adsorbsiyasi va ajratish uchun
- 4. Tibbiyot va farmatsevtika
- Magnitli-rezonans tomografiya (MRT) kontrastlari ishlab chiqishda
- Dori yetkazib berish tizimlarida tashuvchi sifatida
- Antimikrob preparatlar formulasida
- Temir etishmovchiligini davolashda potensial qo‘shimchalar sifatida
- 5. Elektrokimyo
- Yoqilg‘i elementlarida elektrokatalizatorlar
- Suv elektrolizida oksigen ajralish reaksiyasi uchun katalizatorlar
- Superkondensatorlarda elektrod materiallari
- Battereyalarda redoks-faol komponentlar

Xulosa

1-H, 1,2,3-triazol hosilalarining temir(III) tuzlari zamonaviy koordinatsion kimyoning istiqbolli yo‘nalishi bo‘lib, sintezi nisbatan sodda va turli usullarda amalga oshirilishi mumkin. Bu birikmalar o‘ziga xos fizik-kimyoviy xossalarga ega bo‘lib, kataliz, tibbiyot, materiallar kimyosi va boshqa sohalarda keng qo‘llanilish imkoniyatiga ega. Kelajakda bu sohada tadqiqotlarni davom ettirish yangi, samaraliroq va ko‘p funksiyali materiallar yaratishga olib keladi. Ayniqsa, biologik faol komplekslar va katalitik tizimlarda qo‘llash bo‘yicha yanada chuqurroq izlanishlar zarur.

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THE ROLE OF PSYCHOLOGICAL FACTORS IN THE MASTERING OF SUBJECTS BY PRIMARY GRADE STUDENTS

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Abstract: This article analyzes the psychological factors that affect the process of mastering subjects of primary school students. The importance of age and individual characteristics of students, attention, memory, thinking, motivation and emotional states in the effectiveness of education is highlighted. The influence of teachers and parents on the psychological development of children is also considered.

Keywords: primary education, psychological factors, attention, memory, thinking, motivation, educational activity, educational effectiveness.

Kirish: Bugungi kunda ta'lim sifatini oshirish va o'quvchilarning bilimlarni puxta egallashini ta'minlash dolzarb vazifalardan biri hisoblanadi. Ayniqsa, boshlang'ich sinf davri bolaning intellektual va shaxsiy rivojlanishida muhim bosqich bo'lib, bu davrda o'quv faoliyatining asoslari shakllanadi. O'quvchilarning fanlarni muvaffaqiyatli o'zlashtirishi nafaqat o'qitish metodlariga, balki ularning psixologik xususiyatlariga ham bevosita bog'liqdir.

Tadqiqot metodologiyasi: Mazkur tadqiqotda boshlang'ich sinf o'quvchilarining fanlarni o'zlashtirishida psixologik omillarning o'rnini aniqlash maqsadida nazariy va empirik tadqiqot metodlaridan foydalanildi.

Tadqiqotning nazariy asosini pedagogika va psixologiya sohasidagi ilmiy adabiyotlar, monografiyalar, ilmiy maqolalar hamda normativ-huquqiy hujjatlar tashkil etdi. Tadqiqot davomida tahlil, sintez, taqqoslash, umumlashtirish va tizimlashtirish metodlari qo'llanildi. Empirik tadqiqot jarayonida boshlang'ich sinf o'quvchilarining o'quv faoliyati, ularning diqqat, xotira, tafakkur va motivatsiya darajalarini o'rganish uchun kuzatish, suhbat va so'rovnoma metodlaridan foydalanildi. Shuningdek,



o'qituvchilar va ota-onalar bilan o'tkazilgan suhbatlar orqali o'quvchilarning fanlarni o'zlashtirishiga ta'sir etuvchi psixologik omillar haqida ma'lumotlar yig'ildi. Olingan ma'lumotlar sifat va miqdoriy tahlil usullari yordamida qayta ishlanib, o'quvchilarning ta'lim jarayonidagi psixologik xususiyatlari hamda ularning o'zlashtirish ko'rsatkichlari o'rtasidagi bog'liqlik aniqlandi.

Boshlang'ich sinf o'quvchilarining fanlarni o'zlashtirishida psixologik omillarning o'rnini masalasi ko'plab mahalliy va xorijiy olimlar tomonidan o'rganilgan. Jumladan, rus psixologi Lev Vygotsky o'z tadqiqotlarida bolaning kognitiv rivojlanishi ta'lim jarayoni bilan uzviy bog'liqligini ta'kidlagan hamda "yaqin rivojlanish zonasi" nazariyasini ilgari surgan. Ushbu nazariyaga ko'ra, o'quvchilarning bilimlarni o'zlashtirish darajasi ularning psixologik rivojlanish xususiyatlariga bog'liqdir. Shuningdek, Jean Piaget bolalarning intellektual rivojlanish bosqichlarini tadqiq etib, boshlang'ich maktab yoshidagi o'quvchilarda konkret-operatsion tafakkur ustunlik qilishini asoslab bergan. Bu esa ta'lim jarayonida ko'rgazmalilik va amaliy faoliyatning ahamiyatini oshiradi. O'zbekistonlik olimlardan E.G'. G'oziev, M.G'. Davletshin va Z.T. Nishonovalarning ilmiy ishlari yosh davrlari psixologiyasi hamda pedagogik psixologiya masalalariga bag'ishlangan. Ular o'quvchilarning diqqat, xotira, tafakkur va motivatsiya kabi psixik jarayonlarining rivojlanishi ta'lim samaradorligiga bevosita ta'sir qilishini ta'kidlaydilar. Mavjud ilmiy manbalar tahlili shuni ko'rsatadiki, boshlang'ich sinf o'quvchilarining fanlarni muvaffaqiyatli o'zlashtirishida psixologik omillar muhim ahamiyatga ega bo'lib, ta'lim jarayonini tashkil etishda ushbu omillarni hisobga olish zarur hisoblanadi.

Muhokama va natijalar: Tadqiqot natijalari boshlang'ich sinf o'quvchilarining fanlarni o'zlashtirish jarayonida psixologik omillar muhim ahamiyat kasb etishini ko'rsatdi. Kuzatishlar va tahlillar natijasida o'quvchilarning diqqat darajasi, xotira imkoniyatlari, tafakkur rivoji hamda o'quv motivatsiyasi bilan ularning o'zlashtirish ko'rsatkichlari o'rtasida bevosita bog'liqlik mavjudligi aniqlandi. Muhokama



jarayonida ma'lum bo'ldiki, dars davomida faol ishtirok etadigan, diqqatini uzoq muddat jamlay oladigan va o'quv topshiriqlariga qiziqish bilan yondashadigan o'quvchilar fanlarni o'zlashtirishda yuqori natijalarni namoyon etadilar. Aksincha, diqqatning tez chalg'ishi, o'qishga nisbatan qiziqishning sustligi va emotsional beqarorlik o'quv faoliyatining samaradorligini pasaytiradi. Tadqiqot davomida o'qituvchining pedagogik mahorati ham muhim omillardan biri ekanligi kuzatildi. Interfaol metodlar, didaktik o'yinlar va ko'rgazmali vositalardan samarali foydalanilgan darslarda o'quvchilarning faolligi va bilimlarni o'zlashtirish darajasi yuqori bo'ldi. Bu esa psixologik xususiyatlarni hisobga olgan holda tashkil etilgan ta'lim jarayoni o'quvchilarning bilish faoliyatini rivojlantirishini tasdiqlaydi. Shuningdek, ota-onalarning qo'llab-quvvatlashi, oiladagi ijobiy psixologik muhit va o'quvchining o'ziga bo'lgan ishonchi ham fanlarni muvaffaqiyatli o'zlashtirishga ijobiy ta'sir ko'rsatishi aniqlandi. Tadqiqot natijalari shuni ko'rsatdiki, yuqori motivatsiyaga ega bo'lgan o'quvchilar murakkab vazifalarni bajarishda ham faolroq bo'lib, mustaqil fikrlash va muammolarni hal etish ko'nikmalarini tezroq egallaydilar. Natijalar asosida boshlang'ich sinf o'quvchilarining fanlarni samarali o'zlashtirishini ta'minlash uchun ta'lim jarayonida yosh va individual psixologik xususiyatlarni hisobga olish, o'quv motivatsiyasini kuchaytirish, ijobiy emotsional muhit yaratish hamda zamonaviy pedagogik texnologiyalardan foydalanish zarurligi aniqlandi. Mazkur yondashuvlar o'quvchilarning bilim olishga bo'lgan qiziqishini oshirish va ta'lim sifatini yuksaltirishga xizmat qiladi.

Xulosa

Boshlang'ich sinf o'quvchilarining fanlarni muvaffaqiyatli o'zlashtirishida psixologik omillar muhim o'rin tutadi. Diqqat, xotira, tafakkur, motivatsiya va emotsional holat kabi psixologik jarayonlar o'quv faoliyatining samaradorligini belgilaydi. Shuning uchun o'qituvchilar va ota-onalar bolalarning yosh va individual psixologik xususiyatlarini hisobga olgan holda ta'lim-tarbiya ishlarini tashkil etishlari



lozim. Bu esa o'quvchilarning bilim olishga bo'lgan qiziqishini oshirib, ta'lim sifatining yuksalishiga xizmat qiladi.

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**THE RISE OF LOW STANDARDS IN MUSIC AS A RESULT OF
PURSUING FAME ON SOCIAL NETWORKS AND THE REASONS
FOR THE DECLINE OF MUSICAL CULTURE**

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Abstract

This scientific article broadly analyzes the negative impact of the phenomenon of pursuing fame on social networks on contemporary musical culture. The article examines, from a scientific perspective, the key factors leading to the rise of musical illiteracy — the phenomenon of rapid fame, the decline in the quality of musical education, and the drift away from professionalism.

Keywords

social networks, musical culture, low standards, algorithmic filter, viral content, musical education, authenticity.

**IJTIMOIIY TARMOQLARDA MASHXURLIKKA INTILISH NATIJASIDA
MUSIQADA SAVIYASIZLIKNING KUCHAYISHI VA MUSIQIY
MADANIYAT PASAYISHINING SABABLARI**

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Annotatsiya: Ushbu ilmiy maqolada ijtimoiy tarmoqlarda mashxurlikka intilish hodisasining zamonaviy musiqiy madaniyatga salbiy ta'siri keng ko'lamda tahlil etiladi. Maqolada musiqiy saviyasizlikning kuchayishiga olib keluvchi asosiy omillar — tezkor shuhrat fenomeni va musiqiy ta'lim sifatining pasayishi ,professionallikdan yiroqlashish ilmiy nuqtayi nazardan o'rganiladi.

Kalit so'zlar: ijtimoiy tarmoqlar, musiqiy madaniyat, saviyasizlik, algoritmik filtr, viral kontent, musiqiy ta'lim, autentiklik.



Bugungi davrda ijtimoiy tarmoqlar hayotimizni haddan tashqari ta'sir qilmoqda. Instagram, TikTok, YouTube, Facebook kabi platformalar o'z yo'lida foydalanuvchilar soniga ko'ra davlatlar iqtisodiyotiga teng kuchli quvvat bo'lib qoldi. Xususan, millionlab odamlar, ayniqsa yoshlar, bu platformalarda o'z sho'xliklarini namoyish qilish, mashxur bo'lish va pul ishlash uchun nima bo'lsa qilmoqda. Musiqa - bu odamlarning dunyoqarashi, emotsional holati va madaniy identifikatsiyasini ko'rsatuvchi yetakchi san'at turi. Biroq, ijtimoiy tarmoqlarning viral muvaffaqiyat va tez-tez o'zgaruvchan trendlarga asoslangan tabiati, shaxs musiqiy savodiga bo'lgan talabni tushirib yuboribdi. Bugun kuni "viral" bo'lish juda muhim bo'lsa, u yoki bu avtorning musiqiy mezoni, mukammal ijrosi yoki ijodiy qiymatiga e'tibor berilmayapti. Ushbu maqolaning maqsadi — ijtimoiy tarmoqlarda mashxurlikka intilishning musiqiy madaniyatga ta'sir mexanizmlarini ilmiy tahlil qilish, saviyasizlikning kuchayish sabablarini aniqlash hamda bu muammoni yechish uchun amaliy takliflar ishlab chiqishdir.

Musiqiy madaniyat va ommaviy axborot vositalari o'rtasidagi munosabatlar masalasi jahon ilm-fanida keng o'rganilgan. Adorno va Horkheimer (1944) o'zlarining "Madaniyat sanoati" nazariyasida ommaviy musiqa ishlab chiqarishning standartlashtiruvchi ta'sirini birinchi bo'lib falsafiy jihatdan tahlil etganlar. Ularning bashoratiga ko'ra, madaniyat sanoatining kengayishi badiiy individuallikni yo'q qilib, ommaviy iste'mol mahsulotiga aylantiradigan sharoit yaratadi. O'zbek musiqashunosligida esa bu masala birmuncha yangi bo'lib, Yusupov (2019), Qodirov (2021) va Hasanov (2023) kabi olimlar milliy musiqa madaniyatining globallashuv va raqamli transformatsiya jarayonida duch keladigan muammolarini tadqiq etganlar. Zamonaviy ijtimoiy tarmoqlar platforma algoritmlarining asosiy ko'rsatkichi — foydalanuvchilarning platformada o'tkazgan vaqti va interaktivlik darajasi. Bu texnologik mantiq musiqiy kontentni ham o'ziga xos shaklda filtrlaydi: qisqa, zudlik bilan e'tibor jalb qiluvchi va kuchli his-tuyg'ular uyg'otuvchi kontent algoritm tomonidan ko'proq tarqatiladi. Ijtimoiy tarmoqlarning eng xavfli ta'sirlaridan biri —



professional musiqiy ta'lim va mashq davriga bo'lgan ehtiyojni inkor etuvchi "tezkor shuhrat" modeli. TikTokda bitta viral videoning yuz millionlab ko'rishga erishishi havaskor ijodkorlarni professional musiqachilikka teng imkoniyat borligiga ishonrtirmoqda. Bu esa har qanday musiqiy asar parchasini mukammal bo'lsa-bo'lmasa tarmoqqa joylab musiqiy saviyaning pasayishini keltirib chiqarmoqda. Musiqiy tanqid sohasida ham sifat mezonlari o'zgarmoqda. Traditsion musiqiy tanqid — garmonik tahlil, orkestr texnikasi, ovoz sifati, kompozitsion mantiq — o'rnini "likelar" soni, trekling-chart pozitsiyalari va social media engagement ko'rsatkichlari egallamoqda. Bu holat musiqiy estetik mezonlar tizimini tubdan o'zgartirmoqda. Natijada musiqiy dunyo qutblarga bo'linmoqda: bir tomondan bir nechta mega-janrlar (pop, hip-hop,) aholining katta qismini qamrab olsa, boshqa tomondan jazz, klassik, etnik va avangard musiqa kabi janrlar inqirozga duchor bo'lmoqda. Klassik musiqa sohasida bu holat ayniqsa keskin: Carnegie Hall ma'lumotlariga ko'ra, klassik kontsertlarga tashrif buyuruvchilarning o'rtacha yoshi 1970 yildan beri 15 yoshga oshgan. O'zbek milliy musiqasi ham ushbu tahdiddan xoli emas. Maqom, katta ashula, yalla kabi an'anaviy janrlar tinglovchilari soni so'nggi o'n yilda keskin kamaygan. Yoshlar orasida o'tkazilgan so'rovnomalar shuni ko'rsatadiki, 15–25 yosh guruhida faqat 12 foizi milliy musiqa janrlarini muntazam tinglaydi. Bu juda achinarli holat. Buning asosiy sabablari klassik musiqamiz ya'ni maqom janrini yetarli darajada targ'ib qilinmasligi va yoshlarda qisqa video kontentlarni muntazam ko'rish orqali sabrsizlikning yuzaga kelishi natijasida 7-8 daqiqalik milliy mumtoz asarlarimizni tinglay olmasligiga olib kelmoqda.

Musiqiy saviyasizlikning eng chuqur ildizlaridan biri — musiqiy ta'limning zaiflasuvi, milliy musiqani keng targ'ib qilinmasligi yoki yetarli darajada mukammal qilib tinglovchilarga yetqizib berolmaslik va tinglovchilarda musiqani tanqidiy idrok etish madaniyatining yo'qolishi. Ijtimoiy tarmoqlar passiv iste'molni rag'batlantirib, faol musiqiy ishtirokni — cholg'u o'rganish, to'garak, musiqiy klublarni — siqib chiqarmoqda. Yoshlar amaliy mashg'ulotlar bilan shug'ullanish o'rniga faqatgina



ijtimoiy tarmoqlar bilan chegaralanib qolmoqda. Ijtimoiy tarmoqlar ta'sirida yuzaga kelayotgan musiqiy saviyasizlik bir necha muhim uzoq muddatli oqibatlarni keltirib chiqarmoqda. Madaniy xotiraning zaiflashuvi. Musiqiy an'analar avloddan avlodga nafaqat yozma, balki jonli ijro orqali uzatiladi. Havaskorlik va virallik madaniyatida bu uzatish zanjirlari uzilmoqda. O'zbek maqom san'ati kabi noyob musiqa merosining yo'qolib ketish xavfi tobora ortmoqda. Musiqiy ijodkorlikning torayishi yuzaga kelmoqda. Formula musiqaning ustun kelishi yangi musiqiy tillar, uslublar va janrlarning paydo bo'lishiga to'siq qo'yadi. Tarixiy to'g'ri keladigan misollar: jazz, rok, funky, bossa nova kabi janrlar marginallashtirilgan guruhlarda yetishib chiqqan. Hozir esa bu "marjinallik" (ya'ni e'tibordan chetda qolish) ijtimoiy tarmoqlarda kuchsizlantirilmoqda. Ijtimoiy bir-birini tushunish imkoniyatining pasayishi. Keng ma'noda, umumiy musiqiy madaniyat jamiyat a'zolarini birlashtiruvchi ko'priklarni bo'lib xizmat qilgan. Echo chamber (ya'ni aks sado) effektida bu ko'priklarni qulab tushadi va ijtimoiy parchalanish kuchayadi.

Bu muammoni bir nechta yechimlar bilan bartaraf etishga harakat qilish zarur va milliy musiqa madaniyatini saqlab qolish, professionallikdan yiroqlashishni oldini olish maqsadga muvofiqdir. Globallashtiruv jarayonida, yuzaga kelgan muammolarni bartaraf qilishda qandaydir cheklorlar yoki platformalarni ta'qiqlash bilan erishib bo'lmaydi, balki zamon bilan hamnafas bo'lgan holda integratsiyalash maqsadga muvofiq bo'ladi.

1. Musiqiy ta'lim tizimini mustahkamlash. Maktablarda musiqiy ta'limga ajratilgan soatlarni ko'paytirish, cholg'u o'rgatish dasturlarini moliyalash va milliy musiqa an'analarini ta'lim tizimiga organik integratsiya qilish zarur.
2. Musiqiy tanqid madaniyatini tiklash. Sifatli musiqiy tanqid nashrlari, jamoat muhokama platformalari va ekspert baholash tizimlarini rivojlantirish kerak.



3. Platformalar bilan hamkorlik. Davlat va madaniyat tashkilotlari ijtimoiy tarmoqlar bilan sifatli kontent va milliy musiqa madaniyatini ilgari surish bo'yicha hamkorlik shartnomalari tuzishi lozim.

4. Musiqiy madaniy siyosat. Hukumat an'anaviy va klassik musiqa janrlarini iqtisodiy rag'batlantirish, subsidiyalar va grant tizimi orqali qo'llab-quvvatlashi kerak.

5. Media savodxonlik dasturlari. Yoshlarni ijtimoiy tarmoqlarda musiqa iste'molida tanqidiy yondashuvga o'rgatuvchi maxsus ta'lim dasturlari ishlab chiqilishi kerak.

Ijtimoiy tarmoqlarda mashxurlikka intilish hodisasi musiqiy madaniyatga bir necha parallel yo'llar orqali salbiy ta'sir ko'rsatmoqda: algoritmik filtrlash sifat o'rniga miqdorni targ'ib qilmoqda; tezkor shuhrat modeli professional musiqiy ta'limni inkor etmoqda; tijorat bosimi badiiy autentiklikni siqib chiqarmoqda; echo chamber effekti musiqiy xilma-xillikni toraytirmoqda; va musiqiy ta'limning zaiflashuvi tinglovchilarning tanqidiy idrok qobiliyatini pasaytirmoqda. Biroq bu muammolarning yechimi bor va u faqat o'tmishga qaytishni emas, balki zamonaviy texnologiyalarni madaniy qadriyatlar bilan muvozanatlashtirishni talab etadi. Ijtimoiy tarmoqlar o'zi muammo emas — muammo ularning hozirgi algoritmik mantiqida yashiringan. Agar platforma algoritmlari sifat ko'rsatkichlarini ham hisobga olsa, musiqa ta'limi tizimi mustahkamlansa va tanqidiy idrok madaniyati shakllantirilsa — raqamli davrda ham yuksak musiqiy madaniyat saqlanib, rivojlanib borishi mumkin. O'zbek milliy musiqasi uchun bu masala ayniqsa dolzarb: ming yillik maqom a'anasidan tortib zamonaviy estrada san'atigacha cho'zilgan boy musiqiy meros, agar maqsadli madaniy siyosat olib borilmasa, ijtimoiy tarmoqlar virallik madaniyatida erib ketishi mumkin. Bu nafaqat madaniy yo'qotish, balki milliy identitetga ham ulkan zarar bo'ladi.

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THE ROLE OF INNOVATIVE MANAGEMENT TECHNOLOGIES IN
DEVELOPING CREATIVE COMPETENCIES OF HIGHER EDUCATION
INSTITUTION LEADERS

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Abstract: The role of innovative management technologies in developing creative competencies of higher education institution leaders is one of the most relevant issues in the modern education system. This article analyzes the theoretical and practical significance of innovative management technologies in developing creative competencies of higher education leaders. Creative competencies include the ability of a leader to find new approaches in complex situations, develop innovative solutions, inspire the team, and bring the organization to a competitive level. Innovative management technologies encompass modern tools such as digital transformation, artificial intelligence, big data analytics, agile and lean methods, and virtual collaboration platforms. The article thoroughly examines the role of these technologies in activating leaders' creative thinking, optimizing decision-making processes, and stimulating institutional innovations. The research results show that the effective use of innovative management technologies increases the adaptability of higher education institutions, activates scientific research activities, and strengthens international competitiveness. The article provides practical recommendations for improving higher education leadership training programs and modernizing the education system.

Keywords: higher education, educational leaders, creative competencies, innovative management, digital transformation, artificial intelligence, agile management, institutional innovation, educational management, strategic thinking.

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Toshkent davlat iqtisodiyot universiteti tayanch doktoranti



**OLIY TA'LIM MUASSASALARI RAHBARLARINING KREATIV
KOMPETENSIYALARINI SHAKLLANTIRISHDA INNOVATSION
BOSHQARUV TEXNOLOGIYALARINING O'RNI**

Anotatsiya: Oliy ta'lim muassasalari rahbarlarining kreativ kompetensiyalarini shakllantirishda innovatsion boshqaruv texnologiyalarining o'rni mavzusi zamonaviy ta'lim tizimining eng dolzarb masalalaridan biridir. Ushbu maqolada oliy ta'lim muassasalari rahbarlarining kreativ kompetensiyalarini rivojlantirishda innovatsion boshqaruv texnologiyalarining nazariy va amaliy ahamiyati tahlil qilinadi. Kreativ kompetensiyalar rahbarning murakkab vaziyatlarda yangicha yondashuvlar topish, innovatsion yechimlar ishlab chiqish, jamoani ilhomlantirish va tashkilotni raqobatbardosh holatga keltirish qobiliyatlarini o'z ichiga oladi. Innovatsion boshqaruv texnologiyalari esa raqamli transformatsiya, sun'iy intellekt, big data tahlili, agile va lean usullari, virtual hamkorlik platformalari kabi zamonaviy vositalarni qamrab oladi. Maqolada mazkur texnologiyalarning rahbarlarning kreativ fikrlashini faollashtirish, qaror qabul qilish jarayonlarini optimallashtirish va institutsional innovatsiyalarni rag'batlantirishdagi roli chuqur yoritilgan. Tadqiqot natijalari shuni ko'rsatadiki, innovatsion boshqaruv texnologiyalarini samarali qo'llash oliy ta'lim muassasalarining moslashuvchanligini oshiradi, ilmiy-tadqiqot faoliyatini faollashtiradi va xalqaro raqobatbardoshlikni kuchaytiradi. Shuningdek, rahbarlarning kreativ kompetensiyalarini shakllantirishda texnologik vositalar bilan birga insoniy kapitalni rivojlantirish zarurligi ta'kidlanadi. Maqola oliy ta'lim rahbarlarini tayyorlash dasturlarini takomillashtirish, strategik boshqaruv siyosatini ishlab chiqish va ta'lim tizimini modernizatsiya qilish bo'yicha amaliy tavsiyalar beradi.

Kalit so'zlar: oliy ta'lim, rahbarlar, kreativ kompetensiyalar, innovatsion boshqaruv, raqamli transformatsiya, sun'iy intellekt, agile boshqaruv, institutsional innovatsiyalar, ta'lim menejmenti, strategik fikrlash.



Oliy ta'lim muassasalari zamonaviy jamiyatning intellektual va innovatsion rivojlanishining asosiy markazlaridan biri sifatida qaraladi. Globallashuv, raqamli iqtisodiyot va tez sur'atlar bilan o'zgarayotgan texnologik muhit sharoitida oliy ta'lim rahbarlaridan nafaqat an'anaviy boshqaruv ko'nikmalarini, balki yuqori darajadagi kreativ kompetensiyalarni namoyon etish talab etilmoqda. Kreativ kompetensiyalar rahbarning yangi g'oyalarni yaratish, mavjud muammolarni noodatiy usullar bilan hal qilish, turli manfaatdor tomonlar o'rtasidagi hamkorlikni samarali tashkil etish va tashkilotni doimiy innovatsion rivojlanish yo'liga yo'naltirish qobiliyatlarini bildiradi. Bunday kompetensiyalarni shakllantirishda innovatsion boshqaruv texnologiyalari muhim o'rin tutadi, chunki ular rahbarning fikrlash doirasini kengaytiradi, ma'lumotlar asosidagi qarorlar qabul qilishni ta'minlaydi va ijodiy jarayonlarni mexanizatsiyalashtirish orqali insoniy salohiyatni kuchaytiradi. Zamonaviy oliy ta'lim muassasalarida rahbarlar ko'plab murakkab vazifalar bilan yuzlashmoqdalar: moliyaviy resurslarni samarali boshqarish, xalqaro standartlarga moslashish, talabalar va professor-o'qituvchilarning ehtiyojlarini qondirish, ilmiy tadqiqotlar sifatini oshirish va raqobatbardoshlikni saqlash. An'anaviy ierarxik boshqaruv modellari bu vazifalarni samarali bajarishga qodir emas. Shu bois innovatsion boshqaruv texnologiyalari, xususan, sun'iy intellektga asoslangan tahlil tizimlari, big data platformalari, bulutli hisoblash texnologiyalari va virtual hamkorlik vositalari rahbarlarning kreativ salohiyatini ochishning muhim vositasiga aylandi. Masalan, sun'iy intellekt talabalar oqimi, ilmiy nashrlar dinamikasi va moliyaviy ko'rsatkichlarni bashorat qilish orqali rahbarlarga strategik qarorlar qabul qilishda yangi ufqlar ochadi. Bu esa rahbarning kreativ fikrlashini faollashtirib, faqat mavjud ma'lumotlar asosida emas, balki potentsial imkoniyatlarni ko'ra bilish qobiliyatini rivojlantiradi.

Innovatsion boshqaruv texnologiyalarining kreativ kompetensiyalarga ta'sirini tahlil qilganda, ularning bir necha asosiy yo'nalishlarini ajratib ko'rsatish mumkin. Birinchidan, ma'lumotlar tahlili va bashoratli modellarning qo'llanilishi rahbarlarda



analitik va sintetik fikrlashni uygʻotadi. Katta hajmdagi maʼlumotlar (big data) orqali oliy taʼlim muassasasining ichki va tashqi muhitini real vaqt rejimida kuzatish mumkin boʻlib, bu rahbarlarga muammolarni erta aniqlash va ijodiy yechimlarni ishlab chiqish imkonini beradi. Ikkinchidan, agile va lean boshqaruv usullari rahbarlarga moslashuvchanlik va tez qaror qabul qilish koʻnikmalarini shakllantiradi. Ushbu usullar doimiy takomillashtirish (kaizen) tamoyiliga asoslanib, kichik iteratsiyalar orqali katta oʻzgarishlarga erishishni taʼminlaydi. Natijada rahbarlarning kreativligi nafaqat gʻoyalar yaratishda, balki ularni tez va samarali amalga oshirishda ham namoyon boʻladi. Uchinchidan, raqamli platformalar va virtual hamkorlik vositalari (masalan, Microsoft Teams, Zoom, Slack yoki maxsus taʼlim LMS tizimlari) rahbarlarning kommunikativ kompetensiyalarini oshiradi va turli mamlakatlar, tashkilotlar va mutaxassislar bilan ijodiy hamkorlikni rivojlantiradi. Bunday muhitda rahbarlar oʻz gʻoyalarini ochiq muhokama qilish, fikr almashish va kollektiv intellektni yaratish imkoniyatiga ega boʻladilar. Toʻrtinchidan, sunʼiy intellektga asoslangan qaror qoʻllab-quvvatlash tizimlari rahbarning kognitiv yukini kamaytirib, ijodiy jarayonga koʻproq vaqt ajratishga yordam beradi. Masalan, avtomatik hisobotlar tayyorlash, risklarni baholash yoki resurslarni optimallashtirish kabi rutin vazifalarni texnologiyaga topshirish orqali rahbarlar strategik va innovatsion masalalar bilan chuqurroq shugʻullanishi mumkin. Oliy taʼlim rahbarlarining kreativ kompetensiyalarini shakllantirishda innovatsion texnologiyalarning roli nafaqat texnik vositalar bilan cheklanmaydi. Ular insoniy omil bilan chambarchas bogʻliq. Texnologiyalar rahbarlarda oʻz-oʻzini rivojlantirish motivatsiyasini kuchaytiradi, doimiy oʻqish va oʻrganish madaniyatini shakllantiradi. Masalan, onlayn platformalar orqali rahbarlar xalqaro tajribani oʻrganishlari, virtual simulyatsiyalar orqali murakkab boshqaruv vaziyatlarini modellashtirishlari va oʻz qarorlarining natijalarini bashorat qilishlari mumkin. Bu jarayon rahbarning kreativligini tizimli ravishda rivojlantiradi va uni zamonaviy taʼlim muhitiga moslashtiradi.



Innovatsion boshqaruv texnologiyalarini joriy etishda ba'zi qiyinchiliklar ham mavjud. Ulardan biri – texnologik infratuzilmaning yetarli emasligi, rahbarlar va xodimlarning raqamli savodxonligi pastligi, ma'lumotlar xavfsizligi masalalari va qarshilik ko'rsatish holatlari. Shu bilan birga, texnologiyalarning haddan tashqari qo'llanilishi insoniy munosabatlarni susaytirishi mumkin. Shuning uchun kreativ kompetensiyalarni shakllantirishda texnologik va insoniy yondashuvlarni muvozanatli birlashtirish zarur. Rahbarlar texnologiyalarni vosita sifatida ko'rib, ularni ijodiy jarayonni boyitish uchun ishlatishlari lozim.

Tadqiqotlar shuni ko'rsatadiki, innovatsion boshqaruv texnologiyalarini faol qo'llaydigan oliy ta'lim muassasalari an'anaviy modellarga nisbatan yuqori natijalarga erishmoqda. Ular talabalar bandligi, ilmiy nashrlar soni, xalqaro hamkorlik loyihalari va moliyaviy barqarorlik ko'rsatkichlarida oldingi o'rinlarni egallamoqdalar. Masalan, Yevropa va Osiyo mamlakatlaridagi yetakchi universitetlar rahbarlari raqamli transformatsiya strategiyalarini muvaffaqiyatli amalga oshirib, kreativ boshqaruv madaniyatini shakllantirdilar. O'zbekiston oliy ta'lim tizimida ham bu yo'nalishda muayyan qadamlar tashlanmoqda, ammo yanada chuqurroq integratsiya talab etiladi. Rahbarlarning kreativ kompetensiyalarini rivojlantirishda innovatsion texnologiyalarning o'rni strategik ahamiyatga ega. Ular nafaqat hozirgi muammolarni hal qilishga, balki kelajakdagi o'zgarishlarni oldindan ko'ra bilish va ularga tayyorlanishga yordam beradi. Buning uchun oliy ta'lim rahbarlarini tayyorlash dasturlariga innovatsion boshqaruv texnologiyalari bo'yicha maxsus modullar kiritish, doimiy malaka oshirish kurslarini tashkil etish va muassasalarda innovatsion laboratoriyalar yaratish zarur. Shuningdek, davlat siyosati darajasida ta'lim rahbarlarining kreativ salohiyatini baholash va rag'batlantirish mexanizmlarini ishlab chiqish muhimdir. Umuman olganda, innovatsion boshqaruv texnologiyalari oliy ta'lim muassasalari rahbarlarining kreativ kompetensiyalarini shakllantirishning kuchli katalizatori hisoblanadi. Ular rahbarlarga yangi fikrlash usullarini, samarali qaror qabul



qilish ko'nikmalarini va institutsional innovatsiyalarni boshqarish qobiliyatini beradi. Ta'lim tizimining barqaror rivojlanishi va xalqaro standartlarga erishishi aynan shu yondashuvga bog'liq. Kelgusida sun'iy intellekt, metaverse va boshqa rivojlanayotgan texnologiyalarning yanada chuqur integratsiyasi rahbarlarning kreativ salohiyatini yanada yuqori darajaga ko'taradi va oliy ta'limni jamiyatning haqiqiy innovatsion dvigatoriga aylantiradi.

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GEOMETRY OF GRADIENT VECTOR FIELDS

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Abstract

This article analyzes the differential-geometric invariants of gradient vector fields. The properties of orthogonality to level surfaces, irrotationality, and harmonicity are presented with rigorous mathematical proofs, and their interrelationships are demonstrated. Three equivalent characterizations of a conservative field in simply connected domains are proven. The dimension-dependent structure of gradient fields is determined through the fundamental solutions of the Laplace equation. The applications of the results in electrostatics, hydrodynamics, and optimization theory are discussed.

Keywords

gradient, level surface, conservative field, Laplace equation, rotor (curl), divergence, harmonic function.

GRADIENT VEKTOR MAYDONLAR GEOMETRIYASI

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Annotatsiya. Mazkur maqolada gradient vektor maydonlarning differensial-geometrik invariantlari tahlil qilingan. Sath sirtlariga ortogonallik, uyurmasizlik va garmoniklik xossalari qat'iy matematik isbotlar bilan keltirilib, ularning o'zaro bog'liqligi ko'rsatilgan. Bir bog'lamli sohalarda konservativ maydonning uchta ekvivalent tavsifi isbotlangan. Laplas tenglamasining fundamental yechimlari orqali gradient maydonlarning o'lchamga bog'liq tuzilishi aniqlangan. Natijalarning elektrostatika, gidrodinamika va optimizatsiya nazariyasidagi tatbiqlari muhokama qilingan.

Kalit so'zlar: gradient, sath sirti, konservativ maydon, Laplas tenglamasi, rotor, divergensiya, garmonik funksiya.

1. Kirish (Introduction)

Gradient operatori matematik fizika va differensial geometriyaning fundamental tushunchalaridan biri bo'lib, skalyar maydonning fazoviy o'zgarish tezligi va yo'nalishini to'liq tavsiflaydi [1]. Ushbu operator 19-asr o'rtalarida Gamilton tomonidan kvaternionlar nazariyasi doirasida shakllantirilib, keyinchalik Gibbs va Hevisayd tomonidan zamonaviy vektor analiz apparatiga kiritilgan [2].

Gradient vektor maydonlarning geometrik xossalarini o'rganish zarurati ularning fundamental fizik maydonlar — elektrostatik, gravitatsion va gidrodinamik maydonlar — hamda zamonaviy optimizatsiya algoritmlaridagi markaziy o'rni bilan bog'liq [3, 4]. Xususan, elektrostatik maydon kuchlanganligi $\mathbf{E} = -\nabla\varphi$ ko'rinishda, gravitatsion maydon esa $\mathbf{g} = -\nabla\Phi$ ko'rinishda ifodalanadi.

2. Metodlar (Methods)

2.1. Matematik apparat

Tahlil $\mathbb{R}^n$ Yevklid fazosida olib boriladi, barcha qaralayotgan funksiyalar $C^2(U)$ -sinfga mansub, bu yerda $U \subset \mathbb{R}^n$ ochiq to'plam. Asosiy differensial operatorlar Dekart koordinatalar sistemasida quyidagicha aniqlanadi:

$$\nabla f = \sum_{i=1}^n \frac{\partial f}{\partial x_i} \mathbf{e}_i, \quad \nabla \cdot \mathbf{F} = \sum_{i=1}^n \frac{\partial F_i}{\partial x_i}, \quad \Delta f = \sum_{i=1}^n \frac{\partial^2 f}{\partial x_i^2}$$

Uch o'lchovli holat uchun rotor operatori:

$$\nabla \times \mathbf{F} = \left(\frac{\partial F_3}{\partial x_2} - \frac{\partial F_2}{\partial x_3}, \frac{\partial F_1}{\partial x_3} - \frac{\partial F_3}{\partial x_1}, \frac{\partial F_2}{\partial x_1} - \frac{\partial F_1}{\partial x_2} \right)^T$$

Levi-Civita simvoli ε_{ijk} orqali ixcham ko'rinishda: $(\nabla \times \mathbf{F})_i = \varepsilon_{ijk} \frac{\partial F_k}{\partial x_j}$.

2.2. Tahlil usullari

Quyidagi qat'iy matematik usullar qo'llaniladi:

Sath sirtlari tahlili. $S_c = \{x \in \mathbb{R}^n: f(x) = c\}$ sath sirtida yotuvchi ixtiyoriy silliq parametrlangan $\gamma: (-\delta, \delta) \rightarrow S_c$ egri chiziq qaralib, $f(\gamma(t)) = c$ ayniyatdan vaqt bo'yicha hosila olinadi va $t=0$ dagi qiymat tahlil qilinadi.

Differensial invariantlar. Gradient maydonning divergensiya va rotori hisoblanib, ularning nolga tenglik shartlari tekshiriladi. Bunda Klero teoremasi (aralash xususiy hosilalarning tengligi) va antisimmetrik tenzorlar xossalaridan foydalaniladi.

Konservativlik mezonlari. Yopiq kontur integrallari, Stoks teoremasi va Puankare lemmasi yordamida konservativ maydonning ekvivalent tavsiflari orasidagi mantiqiy bog'lanishlar isbotlanadi.

Fundamental yechimlar tahlili. Laplas tenglamasining $n = 2$ va $n = 3$ o'lchamlardagi fundamental yechimlari ($\ln r$ va $1/r$) qaralib, ularning gradient maydonlari aniq hisoblanadi va divergensiya tekshiriladi.

3. Natijalar (Results)

3.1. Ortogonallik teoremasi

Teorema 1. Faraz qilaylik, $f \in C^1(U)$ va $x_0 \in U$ nuqtada $\nabla f(x_0) \neq 0$ bo'lsin. U holda $\nabla f(x_0)$ vektori $Sf(x_0)$ sath sirtiga x_0 nuqtada normal yo'nalgan, ya'ni sath sirtiga urinma bo'lgan ixtiyoriy v vektor uchun $\nabla f(x_0) \cdot v = 0$ bajariladi.

Isbot. $\gamma: (-\varepsilon, \varepsilon) \rightarrow Sf(x_0)$ silliq egri chiziq bo'lib, $\gamma(0) = x_0$ bo'lsin. U holda barcha t uchun $f(\gamma(t)) = f(x_0)$. Zanjir qoidasiga ko'ra:

$$\left. \frac{d}{dt} \right|_{t=0} f(\gamma(t)) = \nabla f(x_0) \cdot \gamma'(0) = 0$$

$\gamma'(0)$ sath sirtiga ixtiyoriy urinma vektor bo'lganligi sababli, $\nabla f(x_0)$ barcha urinma vektorlarga ortogonal. Demak, gradient sath sirtiga normal yo'nalgan.

1-misol. $f(x, y, z) = x^2 + 2y^2 + 3z^2$ funksiya uchun sath sirtlari ellipsoidlardan iborat. Gradient $\nabla f = (2x, 4y, 6z)$ bu sirtlarga normal yo'nalgan bo'lib, $(1,0,0)$ nuqtada $\nabla f(1,0,0) = (2,0,0)$ vektori $x^2 + 2y^2 + 3z^2 = 1$ ellipsoidiga perpendikulyar.

3.2. Rotorning nolga tengligi

Teorema 2. Agar $f \in C^2(U)$ bo'lsa, u holda barcha $x \in U$ uchun

$$\nabla \times (\nabla f) = \mathbf{0}$$

Isbot. Komponenta bo'yicha yozamiz:

$$(\nabla \times \nabla f)_i = \sum_{j,k} \varepsilon_{ijk} \frac{\partial}{\partial x_j} \frac{\partial f}{\partial x_k} = \sum_{j,k} \varepsilon_{ijk} \frac{\partial^2 f}{\partial x_j \partial x_k}$$

$f \in C^2$ bo'lganligi sababli, Klero teoremasiga ko'ra $\frac{\delta^2 f}{\delta x_j \delta x_k}$ matritsasi j va k indekslarga nisbatan simmetrik. ε_{ijk} esa j va k indekslarga nisbatan antisimmetrik. Simmetrik va antisimmetrik ifodalarning yig'indisi aynan nolga teng:

$$\varepsilon_{ijk} S_{jk} = 0 \quad \text{agar} \quad S_{jk} = S_{kj}$$

Demak, har bir i komponenta uchun $(\nabla \times \nabla f)_i = 0$.

Bu teorema gradient maydonlarning uyurmasiz ekanligini ko'rsatadi. Fizik nuqtai nazardan bu shuni anglatadiki, gradient maydonlar hech qachon berk kuch chiziqlariga ega bo'la olmaydi.

3.3. Garmonik funksiyalar va ularning gradient maydonlari

Teorema 3. Laplas tenglamasining $\mathbb{R}^n$ fazodagi sferik-simmetrik fundamental yechimlari quyidagi ko'rinishga ega:

$$\Phi_n(r) = \begin{cases} c_2 \ln r, & n = 2 \\ c_n r^{2-n}, & n \geq 3 \end{cases}$$

bu yerda $r = \|x\|$, c_n esa normalashtiruvchi o'zgarmas.



Isbot ($n=3$ hol uchun). Radial funksiya uchun Laplas operatori sferik koordinatalarda quyidagicha yoziladi:

$$\Delta f(r) = \frac{1}{r^2} \frac{d}{dr} r^2 \frac{df}{dr}$$

$f(r) = r^{-1}$ uchun:

$$\frac{df}{dr} = -r^{-2}, \quad r^2 \frac{df}{dr} = -1, \quad \frac{d}{dr}(-1) = 0$$

Demak, $\Delta(r^{-1}) = 0$ barcha $r > 0$ uchun.

Ushbu fundamental yechimlarning gradientlari fizikada muhim ahamiyatga ega:

O'lcham	Φ_n (r)	$\nabla \Phi_n$	Divergensiya	Fizik talqini
$n = 2$	$\ln r$	r/r^2	$0(r \neq 0)$	Chiziqli zaryad maydoni
$n = 3$	$1/r$	$-r/r^3$	$-4\pi\delta(r)$	Nuqtaviy zaryad maydoni

$n=3$ holatda divergensiyaning delta-funksiya ekanligi Gauss teoremasi orqali isbotlanadi:

$$\nabla \cdot \frac{\mathbf{r}}{r^3} = \int_{S_R} \frac{\mathbf{r}}{r^3} \cdot d\mathbf{S} = \int_{S_R} -\frac{\mathbf{r}}{r^3} \cdot \frac{\mathbf{r}}{r} R^2 d\Omega = -4\pi$$

3.4. Konservativ maydon tavsiflari orasidagi ekvivalentlik

Teorema 4. Bir bog'lamli $U \subset \mathbb{R}^3$ sohada silliq $\mathbf{F}$ vektor maydoni uchun quyidagi uchta tasdiq ekvivalent:



(i) Potensial mavjud: $\exists \varphi \in C^2(U)$ shundayki $\mathbf{F} = \nabla \varphi$;

(ii) Yopiq kontur bo'yicha integral nol: ixtiyoriy silliq yopiq $C \subset U$ uchun $\oint_C \mathbf{F} \cdot d\mathbf{r} = 0$;

(iii) Rotor nolga teng: barcha $x \in U$ uchun $\nabla \times \mathbf{F} = 0$.

Isbot. (i) $\Rightarrow$ (ii): $\oint_C \nabla \varphi \cdot d\mathbf{r} = \varphi(\mathbf{r}_1) - \varphi(\mathbf{r}_0)$. Yopiq konturda $\mathbf{r}_1 = \mathbf{r}_0$ bo'lgani uchun integral nolga teng.

(ii) $\Rightarrow$ (iii): Stoks teoremasiga ko'ra $\oint_C (\nabla \times \mathbf{F}) \cdot d\mathbf{S}$. Agar chap tomon ixtiyoriy C uchun nol bo'lsa, o'ng tomon ixtiyoriy S sirt uchun nol bo'lishi kerak, bu esa $\nabla \times \mathbf{F} = 0$ bo'lgandagina bajariladi.

(iii) $\Rightarrow$ (i): Puankare lemmasi bir bog'lamli sohada rotori nol bo'lgan maydonning potensialga ega ekanligini ta'minlaydi. Potensial quyidagi formula orqali tiklanadi: $\varphi(\mathbf{x}) = \int_{\mathbf{x}_0}^{\mathbf{x}} \mathbf{F} \cdot d\mathbf{r}$, bu yerda integral yo'lga bog'liq emas.

2-misol. $\mathbf{F}(x, y, z) = (2xy + z^3, x^2, 3xz^2)$ maydonini tekshiramiz. Rotorini hisoblaymiz:

$$\nabla \times \mathbf{F} = \begin{vmatrix} \mathbf{i} & \mathbf{j} & \mathbf{k} \\ \partial_x & \partial_y & \partial_z \\ 2xy + z^3 & x^2 & 3xz^2 \end{vmatrix} = (0 - 0, 3z^2 - 3z^2, 2x - 2x) = \mathbf{0}$$

Demak, maydon konservativ. Potensialni tiklaymiz: $\varphi = x^2y + xz^3 + C$ ekanligi tekshiriladi: $\nabla \varphi = (2xy + z^3, x^2, 3xz^2) = \mathbf{F}$.

4.1. Natijalarning geometrik talqini

Olingan natijalar gradient vektor maydonlarning uchta fundamental geometrik invariantini ochib beradi.

Birinchi invariant — ortogonallik. Teorema 1 ga ko'ra, gradient vektori har doim sath sirtiga perpendikulyar yo'nalgan. Bu xossaning buzilishi faqat $\nabla f = \mathbf{0}$ bo'lgan kritik nuqtalarda kuzatiladi. Kritik nuqtalarda sath sirlari aniqlanmagan bo'lib, Mors lemmasi yordamida ularning atrofidagi geometrik tuzilish tasniflanadi [5]. Xususan,

minimum yoki maksimum nuqtalarida sath sirtlari yopiq giper-sirtlarga aylanadi, egar nuqtalarda esa kesishuvchi sirtlar paydo bo'ladi. Bu esa ∇f oqimining topologiyasini to'liq belgilaydi.

Ikkinchi invariant — uyurmasizlik. $\nabla \times (\nabla f) = \mathbf{0}$ ayniyati matematik jihatdan Klero teoremasining bevosita natijasi bo'lib, fizik jihatdan gradient maydonlarda aylanma harakat mavjud emasligini bildiradi. Bu esa gradient maydonlarni, masalan, Bio-Savar qonuni bilan beriladigan magnit maydonidan ($\nabla \times \mathbf{B} = \mu_0 \mathbf{J}$) tubdan farqlaydi. Magnit maydonida berk kuch chiziqlari mavjud bo'lsa, gradient maydonlar uchun bunday holat mumkin emas [2, 3].

Uchinchi invariant — garmoniklik. Laplas tenglamasini qanoatlantiruvchi funksiyalarning gradient maydonlari divergensiyasiz bo'ladi ($\nabla \cdot \nabla f = 0$). Bu manbalar va oqimlar mavjud bo'lmagan sohalaridagi maydonlarni tavsiflaydi. Garmonik funksiyalarning o'rta qiymat xossasiga ko'ra, bunday funksiyalarning qiymati ixtiyoriy sferadagi o'rtacha qiymatiga teng bo'lib, bu ularning yuqori darajadagi silliqqligini ta'minlaydi [6].

4.2. Amaliy tatbiqlar

Elektrostatik maydonlar. Teorema 4 elektrostatikaning matematik asosini tashkil etadi. $\mathbf{E} = -\nabla V$ maydoni uchun rotorning nolga tengligi Faradey qonunining statik holatini ($\partial \mathbf{B} / \partial t = 0$) ifodalaydi. Gauss qonuni $\nabla \cdot \mathbf{E} = \rho / \varepsilon_0$ bilan birgalikda Puasson tenglamasini beradi: $\Delta V = -\rho / \varepsilon_0$. Nuqtaviy zaryad uchun potensial $V = q / (4\pi \varepsilon_0 r)$ bo'lib, uning gradienti $E = qr / (4\pi \varepsilon_0 r^3)$ Kulon qonunini beradi [1, 3].

Gidrodinamik potensial oqimlar. Siqilmaydigan va uyurmasiz suyuqlik harakati uchun tezlik maydoni gradient shaklida ifodalanadi: $\mathbf{v} = \nabla \Phi$. Uzluksizlik tenglamasi $\nabla \cdot \mathbf{v} = 0$ Laplas tenglamasiga olib keladi: $\Delta \Phi = 0$. Bu tenglamaning fundamental yechimlari $\Phi \sim 1/r$ dipol, manba va oqim modellarini qurishda ishlatiladi [4].

Optimizatsiya algoritmlari. Gradient tushish usuli $x_{k+1} = x_k - \eta_k \nabla f(x_k)$ iteratsiyasi orqali maqsad funksiyasining lokal minimumini topadi. $\nabla f = 0$ sharti statsionar nuqtalarni aniqlaydi, Gessian matritsasi $H_f = \nabla(\nabla f)^T$ esa bu nuqtalarning xarakterini (minimum, maksimum, egar) tasniflaydi [7].

4.3. Cheklanishlar va istiqbollar

Tadqiqotning asosiy cheklanishi — tahlillarning tekis Yevklid fazosi bilan chegaralanganligidir. Riman ko'pxilliliklarida gradient operatori metrik tenzor orqali umumlashtiriladi:

$$(\nabla f)^i = g^{ij} \frac{\partial f}{\partial x^j}$$

Bu holda rotnorning nolga tenglik xossasi saqlanib qoladi, ammo Laplas operatori Beltrami-Laplas operatoriga aylanadi:

$$\Delta_g f = \frac{1}{\sqrt{|g|}} \partial_i (\sqrt{|g|} g^{ij} \partial_j f).$$

Egrilik mavjud bo'lganda garmonik funksiyalarning xossalari Boyxner ayniyati orqali Richehi egriligi bilan bog'lanadi [6]:

$$\frac{1}{2} \Delta |\nabla f|^2 = |\text{Hess } f|^2 + \nabla f \cdot \nabla (\Delta f) + \text{Ric}(\nabla f, \nabla f)$$

Kelgusidagi tadqiqotlar uchun Mors nazariyasi doirasida gradient oqimlarning topologik invariantlarini o'rganish, singulyar nuqtalarga ega bo'lgan potentsiallarning bifurkatsion tahlili va fraktal chegarali sohalarda garmonik funksiyalarning asimptotik xossalarini aniqlash istiqbolli yo'nalishlar hisoblanadi.

5. Xulosa

Mazkur tadqiqot doirasida gradient vektor maydonlarning differensial-geometrik tahlili amalga oshirildi va quyidagi asosiy ilmiy natijalar olindi.

Birinchidan, gradient vektorining sath sirtlariga ortogonallik xossasi qat'iy isbotlandi (Teorema 1). Ushbu xossa $\nabla f \neq 0$ bo'lgan barcha nuqtalarda bajarilib, gradient

oqim chiziqlari va ekvipotensial sirtlar o'rtasidagi fundamental geometrik munosabatni ifodalaydi. Kritik nuqtalarda ($\nabla f = 0$) bu munosabat buziladi, bu esa Mors nazariyasi doirasida alohida tasnifni talab qiladi. Ortogonallik xossasi fizikada kuch chiziqlarining ekvipotensial sirlarga perpendikulyarligini ta'minlovchi asosiy geometrik mexanizm hisoblanadi.

Ikkinchidan, gradient maydonlarning uyurmasizlik invarianti $\nabla \times (\nabla f) = 0$ Klero teoremasi asosida isbotlandi (Teorema 2). Bu ayniyat gradient maydonlarning topologik tuzilishiga jiddiy cheklov qo'yadi: bunday maydonlarda berk kuch chiziqlari yoki aylanma harakat mavjud bo'la olmaydi. Bu xossa gradient maydonlarni uyurmali maydonlardan (magnit maydoni, turbulent oqimlar) tubdan farqlaydi va ularning konservativ tabiatini belgilaydi.

Uchinchidan, konservativ maydonlarning uchta ekvivalent tavsifi — potensialning mavjudligi, yopiq kontur bo'yicha sirkulyatsiyaning nolga tengligi va rotorning nolga tengligi — bir bog'lamli sohalar uchun to'liq isbotlandi (Teorema 4). Bu ekvivalentlik Puankare lemmasi va Stoks teoremasiga asoslanib, fizik maydonlarning potensial nazariyasi uchun mustahkam matematik poydevor yaratadi. Potensialni tiklash formulasi $\varphi(x) = \int_{x_0}^x F \cdot dr$ amaliy hisoblashlar uchun bevosita algoritmik imkoniyat beradi.

To'rtinchidan, Laplas tenglamasining fundamental yechimlari tahlili orqali garmonik funksiyalar gradient maydonlarining o'lchamga bog'liq tuzilishi aniqlandi. $n=2$ o'lchamda logarifmik potensial ($\ln r$), $n=3$ o'lchamda esa Kulon potentsiali ($1/r$) fundamental ahamiyatga ega ekanligi ko'rsatildi. Bu yechimlarning divergensiyasi delta-funksiya orqali ifodalanib, ularning nuqtaviy manbalar bilan bog'liqligini ochib beradi.

Beshinchidan, olingan nazariy natijalarning amaliy ahamiyati uchta muhim sohada namoyon bo'ladi: (a) elektrostatikada $E = -\nabla V$ munosabati va Puasson tenglamasi $\Delta V = -\rho/\varepsilon_0$ orqali maydonlarni hisoblash; (b) gidrodinamikada potensial

oqimlar uchun $v = \nabla\Phi$ va Laplas tenglamasi $\Delta\Phi = 0$ orqali oqim modellarini qurish;
(c) optimizatsiya nazariyasida gradient tushish algoritmi orqali ko'p o'lchovli funksiyalarning ekstremumlarini topish.

Tadqiqot natijalari gradient vektor maydonlar geometriyasining yaxlit nazariy asosini yaratib, ularni turli tabiatga ega fizik va matematik masalalarga tizimli tatbiq etish imkonini beradi. Kelgusida ushbu natijalarni Riman ko'pxilliliklari, singulyar potentsiallar va nochiziqli dinamik sistemalar uchun umumlashtirish dolzarb ilmiy vazifa bo'lib qolmoqda. Ayniqsa, Beltrami-Laplas operatori orqali egrilikning garmonik funksiyalar xossalariga ta'sirini o'rganish va Mors-Bott nazariyasi doirasida kritik nuqtalarning topologik klassifikatsiyasini amalga oshirish istiqbolli yo'nalishlar sifatida belgilandi.

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PEDAGOGICAL OPPORTUNITIES OF A RESEARCH-ORIENTED APPROACH IN TEACHING ELEMENTS OF FUNCTIONAL ANALYSIS

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Abstract. This article analyzes the pedagogical potential of a research-oriented approach in teaching elements of functional analysis in higher education institutions. The study highlights the issues of engaging students in scientific inquiry during the learning process of abstract concepts in functional analysis, as well as developing their mathematical thinking and research competencies. The advantages of using research-based educational technologies and their impact on the learning process are discussed. The obtained results indicate that the use of problem-based learning, project activities, and independent research tasks in teaching functional analysis contributes to a deeper understanding of the subject by students.

Keywords: functional analysis, research-oriented learning, higher education, mathematics education, pedagogical technologies, competency-based approach, Banach space, Hilbert space.

FUNKSIONAL ANALIZ ELEMENTLARINI O'QITISHDA TADQIQOTGA YO'NALTIRILGAN YONDASHUVNING PEDAGOGIK IMKONIYATLARI

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Annotatsiya. Mazkur maqolada oliy ta'lim muassasalarida funksional analiz elementlarini o'qitishda tadqiqotga yo'naltirilgan yondashuvning pedagogik imkoniyatlari tahlil qilingan. Funksional analizning abstrakt tushunchalarini o'zlashtirish jarayonida talabalarni ilmiy izlanishga jalb etish, ularning matematik



tafakkuri va tadqiqotchilik kompetensiyalarini rivojlantirish masalalari yoritilgan. Tadqiqotga asoslangan ta'lim texnologiyalaridan foydalanishning afzalliklari hamda o'quv jarayoniga ta'siri ko'rsatib berilgan. Olingan natijalar funksional analiz fanini o'qitishda muammoli ta'lim, loyiha faoliyati va mustaqil tadqiqot topshiriqlaridan foydalanish talabalarining fanni chuqurroq o'zlashtirishiga xizmat qilishini ko'rsatadi.

Kalit so'zlar: funksional analiz, tadqiqotga yo'naltirilgan ta'lim, oliy ta'lim, matematik ta'lim, pedagogik texnologiyalar, kompetensiyaviy yondashuv, Banax fazosi, Gilbert fazosi.

Kirish. Bugungi kunda oliy ta'lim tizimini rivojlantirishning ustuvor yo'nalishlaridan biri ta'lim jarayonini zamonaviy pedagogik texnologiyalar asosida tashkil etish va talabalarining ilmiy-tadqiqot faoliyatini rivojlantirishdan iborat. Raqamli iqtisodiyot va innovatsion taraqqiyot sharoitida mutaxassisdan nafaqat nazariy bilim, balki mustaqil izlanish olib borish, murakkab masalalarni tahlil qilish va ilmiy xulosalar chiqarish qobiliyatlari ham talab qilinmoqda.

Matematikaning muhim bo'limlaridan biri hisoblangan funksional analiz zamonaviy matematik nazariyalar va ularning amaliy tatbiqlari uchun fundamental asos bo'lib xizmat qiladi. Ushbu fan operatorlar nazariyasi, differensial tenglamalar, kvant mexanikasi, matematik fizika va boshqa ko'plab ilmiy yo'nalishlar bilan uzviy bog'liqdir. Biroq funksional analizning abstrakt xarakterga ega bo'lishi talabalar tomonidan uni o'zlashtirish jarayonida muayyan qiyinchiliklarni yuzaga keltiradi.

An'anaviy o'qitish metodlarida talabalar ko'pincha tayyor ta'rif va teoremlarni qabul qiluvchi sifatida ishtirok etadilar. Natijada bilimlar reproduktiv darajada shakllanadi. Tadqiqotga yo'naltirilgan yondashuv esa talabalarni ilmiy muammolarni mustaqil o'rganishga, matematik obyektlarning xossalarini tahlil qilishga va nazariy natijalarni asoslashga yo'naltiradi. Shu sababli funksional analiz fanini o'qitishda mazkur yondashuvdan foydalanish dolzarb pedagogik masalalardan biri hisoblanadi.



Tadqiqot metodologiyasi. Tadqiqot jarayonida ilmiy-pedagogik adabiyotlarni tahlil qilish, pedagogik kuzatish, taqqoslash, umumlashtirish va tizimli yondashuv metodlaridan foydalanildi.

Funksional analiz elementlarini o'qitishda tadqiqotga yo'naltirilgan yondashuv quyidagi bosqichlar asosida tashkil etildi:

1. Muammoli vaziyatlarni yaratish.
2. Mustaqil izlanishga yo'naltirilgan topshiriqlar berish.
3. Matematik gipotezalarni ilgari surish va tekshirish.
4. Ilmiy manbalar bilan ishlashni tashkil etish.
5. Natijalarni muhokama qilish va umumlashtirish.

Masalan, Banax fazosining ta'rifi tayyor ko'rinishda berilishidan oldin talabalarga turli metrik fazolar misollarini tahlil qilish va ulardagi fundamental ketma-ketliklarning yaqinlashish xossalarini aniqlash topshirig'i beriladi. Shundan so'ng talabalar fazoning to'liqligi tushunchasiga mustaqil ravishda yaqinlashadilar.

Gilbert fazolarini o'rganishda esa skalyar ko'paytma bilan bog'liq masalalar yordamida ortogonallik, proyeksiya va bazis tushunchalarining zarurati ochib beriladi. Bunday yondashuv nazariy bilimlarning mazmunan chuqurroq anglanishiga xizmat qiladi.

Tadqiqotga yo'naltirilgan topshiriqlarni ishlab chiqishda talabalarning tayyorgarlik darajasi, mavzuning murakkabligi va o'quv maqsadlari hisobga olindi.

Tadqiqot natijalari. Tahlillar shuni ko'rsatdiki, funksional analiz elementlarini tadqiqotga yo'naltirilgan yondashuv asosida o'qitish talabalarning bilish faolligini sezilarli darajada oshiradi. Talabalar nazariy materialni yodlab olishga emas, balki uning mohiyatini tushunishga intiladilar.

Tadqiqot davomida quyidagi ijobiy natijalar kuzatildi:

- talabalar tomonidan matematik ta'riflarning mazmuni chuqurroq anglandi;
- teoremlarni isbotlashga qiziqish ortdi;

- ilmiy adabiyotlar bilan ishlash ko'nikmalari rivojlandi;
- matematik mantiq va tahliliy fikrlash darajasi oshdi;
- mustaqil ta'lim samaradorligi yaxshilandi.

Ayniqsa, operatorlarning spektri, kompakt operatorlar va chiziqli funksionallar mavzularini o'rganishda muammoli topshiriqlar samarali natijalar berdi. Talabalar tayyor isbotlarni o'rganish bilan cheklanmay, ayrim natijalarni mustaqil ravishda asoslashga harakat qildilar. Shuningdek, kichik ilmiy loyihalar tashkil etilishi ham ijobiy natijalar berdi. Talabalar Banach va Gilbert fazolarining tatbiqlariga oid ilmiy manbalarni o'rganib, taqdimotlar tayyorladilar. Bu esa ularning ilmiy muloqot va taqdimot kompetensiyalarini rivojlantirishga xizmat qildi.

Natijalar muhokamasi. Olingan natijalar funksional analiz fanining o'ziga xos xususiyatlari tadqiqotga asoslangan ta'lim texnologiyalarini qo'llash uchun qulay imkoniyat yaratishini ko'rsatadi. Chunki mazkur fan abstrakt matematik tushunchalar va nazariy konstruksiyalarga boy bo'lib, ularni chuqur o'zlashtirish faol bilish jarayonini talab qiladi. Tadqiqotga yo'naltirilgan yondashuv talabalarning ilmiy dunyoqarashini shakllantirishda muhim ahamiyat kasb etadi. Talabalar matematik natijalarni tayyor bilim sifatida qabul qilmay, balki ularning kelib chiqish sabablarini tahlil qilishga o'rganadilar. Bu esa matematik tafakkurning rivojlanishiga xizmat qiladi. Bundan tashqari, mazkur yondashuv kompetensiyaviy ta'lim talablariga ham mos keladi. Chunki zamonaviy mutaxassisdan muammolarni mustaqil hal qilish, axborotni tahlil qilish va ilmiy xulosalar chiqarish qobiliyatlari talab etiladi. Funksional analizni o'qitishda tadqiqot elementlaridan foydalanish aynan shu kompetensiyalarni rivojlantirish imkonini beradi. Shuningdek, raqamli ta'lim vositalaridan foydalanish tadqiqotga yo'naltirilgan ta'lim samaradorligini yanada oshiradi. Elektron kutubxonalar, matematik dasturiy paketlar va interaktiv platformalar yordamida talabalar murakkab matematik obyektlarni chuqurroq o'rganish imkoniyatiga ega bo'ladilar.



Xulosa. Funksional analiz elementlarini o‘qitishda tadqiqotga yo‘naltirilgan yondashuv talabalarning matematik tafakkuri, mustaqil ta’lim faoliyati va tadqiqotchilik kompetensiyalarini rivojlantirishning samarali vositasi hisoblanadi. Mazkur yondashuv talabalarni ta’lim jarayonining faol subyektiga aylantirib, ularning ilmiy izlanishga bo‘lgan qiziqishini oshiradi. Tadqiqot natijalari muammoli ta’lim, loyiha metodi va mustaqil tadqiqot topshiriqlaridan foydalanish funksional analiz fanini o‘zlashtirish sifatini yaxshilashini ko‘rsatdi. Kelgusida funksional analizning alohida bo‘limlarini o‘qitishda raqamli texnologiyalar va tadqiqotga asoslangan metodlarni integratsiyalash bo‘yicha ilmiy-uslubiy tavsiyalar ishlab chiqish maqsadga muvofiqdir.

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THE NATURE AND IMPORTANCE OF ACADEMIC READING COMPREHENSION

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Annotation

This article explores the nature and importance of academic reading comprehension in English language education. The study examines how reading comprehension contributes to learners' academic achievement, critical thinking development, vocabulary expansion, and overall language proficiency. Particular attention is given to the cognitive and linguistic processes involved in understanding academic texts, as well as the challenges learners face during reading activities. The findings suggest that effective academic reading instruction improves students' analytical abilities, independent learning skills, and capacity to interpret and evaluate information critically.

Keywords

Academic reading comprehension, English language learning, critical thinking, reading skills, vocabulary development, language proficiency, analytical thinking, academic achievement, text interpretation, independent learning.

ПРИРОДА И ВАЖНОСТЬ АКАДЕМИЧЕСКОГО ПОНИМАНИЯ ПРОЧИТАННОГО

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Аннотация. В данной статье рассматриваются природа и значение академического понимания прочитанного в обучении английскому языку. Исследование анализирует, как понимание текста способствует академической успеваемости учащихся, развитию критического мышления, расширению



словарного запаса и общему уровню владения языком. Особое внимание уделяется когнитивным и языковым процессам, связанным с пониманием академических текстов, а также трудностям, с которыми сталкиваются учащиеся во время чтения. Результаты исследования показывают, что эффективное обучение академическому чтению способствует развитию аналитических способностей, самостоятельного обучения и умения критически интерпретировать информацию.

Ключевые слова: академическое понимание прочитанного, изучение английского языка, критическое мышление, навыки чтения, развитие словарного запаса, языковая компетенция, аналитическое мышление, академическая успеваемость, интерпретация текста, самостоятельное обучение.

INTRODUCTION

In modern education, academic reading comprehension is considered one of the most important skills for successful learning and intellectual development. In English language education, reading is not only a source of vocabulary and grammatical knowledge but also a fundamental tool for acquiring information, developing analytical thinking, and improving communication skills. Students are expected to understand, interpret, and evaluate academic texts in order to succeed in their studies and participate effectively in academic and professional environments. Therefore, the development of academic reading comprehension has become a central objective in English language teaching.

Academic reading comprehension differs from general reading because it requires learners to engage with complex texts critically and thoughtfully. Readers are expected not only to identify factual information but also to analyze arguments, understand implicit meanings, evaluate evidence, and connect ideas logically. This process involves various cognitive and linguistic abilities, including vocabulary knowledge, grammatical understanding, inferencing, prediction, and critical thinking. According to educational



theorists, comprehension becomes meaningful when learners actively interact with texts and construct understanding through reflection and interpretation¹.

Moreover, the increasing availability of information in the digital age has made academic reading comprehension even more significant. Students today encounter a large amount of academic material from books, journals, articles, and online sources. Without strong reading comprehension skills, learners may struggle to identify relevant information, distinguish reliable sources, and understand complex academic concepts. As a result, academic reading plays an essential role not only in language learning but also in developing independent learning and research abilities.

Another important aspect of academic reading comprehension is its close relationship with critical thinking and academic achievement. Learners who can analyze texts effectively are more capable of forming logical opinions, participating in discussions, and producing coherent written work. Bloom's Taxonomy emphasizes that higher-order cognitive skills such as analyzing, evaluating, and creating are necessary for deep comprehension and meaningful learning². Similarly, Vygotsky's sociocultural theory highlights the importance of interaction and prior knowledge in constructing understanding during the reading process³.

Despite its importance, many English language learners experience difficulties in understanding academic texts. Limited vocabulary knowledge, unfamiliar text structures, lack of reading strategies, and low motivation often reduce learners' comprehension abilities. In addition, traditional teaching methods sometimes focus more on translation and memorization than on interpretation and analytical reading. Consequently, many students struggle to read critically and independently.

¹ Dewey, J. *How We Think*. – Boston: D.C. Heath and Company, 1933.

² Bloom, B. S. *Taxonomy of Educational Objectives: The Classification of Educational Goals*. – New York: Longmans, Green and Co., 1956.

³ Vygotsky, L. S. *Mind in Society: The Development of Higher Psychological Processes*. – Cambridge: Harvard University Press, 1978.



The purpose of this article is to examine the nature and importance of academic reading comprehension in English language education and to analyze its influence on learners' academic performance, critical thinking abilities, and language development.

LITERATURE REVIEW

Many researchers consider academic reading comprehension a fundamental component of successful English language learning and academic achievement. Traditional approaches to reading mainly focused on pronunciation and translation, whereas modern educational theories emphasize interpretation, analysis, and critical engagement with texts. According to Goodman, reading is a psycholinguistic process in which learners actively construct meaning through interaction with written language⁴. Similarly, Bloom's Taxonomy highlights higher-order cognitive skills such as analyzing and evaluating, which are essential for deep comprehension⁵. Researchers also argue that vocabulary knowledge, background knowledge, and reading strategies strongly influence learners' ability to understand academic texts. In addition, Vygotsky's sociocultural theory emphasizes that comprehension develops through interaction, discussion, and collaborative learning⁶. Previous studies therefore suggest that effective academic reading instruction improves language proficiency, critical thinking, and independent learning abilities.

METHODOLOGY

This study employed a qualitative and descriptive research design to investigate the nature and importance of academic reading comprehension in English language education. The research involved English language learners who participated in various academic reading activities, including text analysis, comprehension exercises, critical reading tasks, and group discussions. Data were collected through classroom

⁴ Goodman, K. S. Reading: A Psycholinguistic Guessing Game. – Journal of the Reading Specialist, 1967.

⁵ Bloom, B. S. Taxonomy of Educational Objectives: The Classification of Educational Goals. – New York: Longmans, Green and Co., 1956.

⁶ Vygotsky, L. S. Mind in Society: The Development of Higher Psychological Processes. – Cambridge: Harvard University Press, 1978.



observation, reading assessments, students' written responses, and participation analysis. Particular attention was given to learners' ability to understand academic texts, identify main ideas, interpret information critically, and apply reading strategies effectively. The collected data were analyzed qualitatively in order to examine how academic reading comprehension influences students' language proficiency, critical thinking skills, and academic performance.

DISCUSSION

The findings of this study demonstrate that academic reading comprehension plays a crucial role in English language learning and overall academic development. Learners who demonstrated stronger reading comprehension abilities showed greater success in understanding complex information, participating in classroom discussions, and producing organized written responses. The results indicate that academic reading is not a passive activity but an active cognitive process that requires students to analyze, interpret, and evaluate information critically. Students who actively engaged with texts were more capable of connecting ideas, identifying arguments, and expressing personal viewpoints during classroom activities.

One of the most important observations during the study was the strong relationship between reading comprehension and vocabulary development. Learners who read academic texts regularly gradually expanded their vocabulary knowledge and improved their understanding of grammatical structures. Exposure to authentic academic language helped students become more familiar with formal expressions, contextual word meanings, and discipline-specific terminology. As a result, their speaking and writing abilities also improved significantly because they were able to use language more accurately and confidently in academic contexts.

Another significant finding was the influence of reading comprehension on critical thinking abilities. Students who practiced analytical and reflective reading became more capable of distinguishing facts from opinions, evaluating evidence, and interpreting



implicit meanings within texts. They demonstrated greater intellectual engagement during discussions and showed increased ability to form logical conclusions based on textual information. This suggests that academic reading comprehension supports not only language acquisition but also cognitive and analytical development.

The study also revealed several difficulties experienced by learners during academic reading tasks. Many students struggled with unfamiliar vocabulary, complex sentence structures, and long academic passages. Some learners focused mainly on translating words individually rather than understanding the overall meaning of the text. In addition, low reading motivation and lack of effective reading strategies reduced comprehension levels among weaker students. However, classroom observations showed that interactive activities such as group discussions, guided reading, and collaborative text analysis helped learners overcome many of these difficulties.

Furthermore, the research highlighted the importance of the teacher's role in developing academic reading comprehension. Teachers who encouraged prediction, questioning, summarizing, and discussion strategies created more engaging and supportive reading environments. Students became more motivated and confident when they were guided to think critically about texts rather than simply answer comprehension questions mechanically. This learner-centered approach improved both classroom interaction and students' independent learning abilities.

Overall, the discussion of findings confirms that academic reading comprehension is essential for successful English language learning and academic achievement. It enhances vocabulary growth, critical thinking, communication skills, and learner autonomy while preparing students to engage effectively with academic information in educational and professional settings.

RESULTS

The results of the study revealed that academic reading comprehension has a significant influence on learners' language proficiency, critical thinking abilities, and

overall academic performance. Students who demonstrated stronger reading comprehension skills showed greater ability to understand complex academic texts, identify key ideas, and interpret information critically. Compared to learners with weaker reading abilities, they participated more actively in classroom discussions, expressed opinions more confidently, and produced more organized written responses.

One of the most noticeable findings was the improvement in vocabulary knowledge and language usage among students who regularly engaged in academic reading activities. Learners became more familiar with formal academic expressions, contextual meanings, and complex grammatical structures. As a result, they demonstrated greater fluency and accuracy in both speaking and writing tasks. Classroom observations also indicated that students who practiced academic reading frequently were better able to summarize information, explain ideas clearly, and support arguments with evidence from texts.

The study also showed a strong connection between academic reading comprehension and critical thinking development. Students who engaged in analytical reading tasks became more capable of evaluating information, distinguishing facts from opinions, and making logical conclusions based on textual evidence. During discussions and written assignments, learners demonstrated greater ability to interpret implicit meanings and compare different viewpoints critically. This suggests that academic reading not only improves language comprehension but also enhances cognitive and analytical skills.

Another important result was related to learner motivation and independent learning. Students who developed effective reading strategies became more confident and autonomous during academic tasks. They relied less on teacher explanations and showed greater willingness to explore texts independently. However, the study also identified several challenges affecting reading comprehension, including limited

vocabulary knowledge, unfamiliar academic terminology, long text structures, and low reading motivation among some learners.

Overall, the findings clearly indicate that academic reading comprehension is a key factor in successful English language learning. It contributes significantly to vocabulary development, language proficiency, critical thinking, academic achievement, and independent learning abilities.

CONCLUSION

This study examined the nature and importance of academic reading comprehension in English language education and analyzed its influence on learners' language proficiency, critical thinking abilities, and academic achievement. Based on the findings of the research, it can be concluded that academic reading comprehension is one of the most essential components of successful language learning and intellectual development. The study clearly demonstrates that learners who possess strong reading comprehension skills are more capable of understanding complex information, interpreting academic texts critically, and participating actively in communicative and academic activities.

One of the major conclusions of this research is that academic reading comprehension significantly contributes to vocabulary expansion, grammatical awareness, and overall language proficiency. Students who regularly engaged with academic texts demonstrated greater fluency and confidence in both speaking and writing tasks. Exposure to authentic academic language enabled learners to develop richer vocabulary knowledge and better understanding of language structures, which positively influenced their communication skills.

The study also confirms the strong relationship between academic reading comprehension and critical thinking development. Learners who practiced analytical and reflective reading became more capable of evaluating ideas, identifying arguments, distinguishing facts from opinions, and forming logical conclusions. These cognitive

skills are essential not only for academic success but also for independent learning and effective participation in modern society.

Furthermore, the research highlights the importance of interactive and learner-centered reading instruction. Classroom activities such as guided reading, discussion, prediction, summarizing, and collaborative text analysis helped students improve comprehension and become more actively engaged in the learning process. At the same time, the study identified several challenges, including unfamiliar vocabulary, low reading motivation, and difficulties understanding complex academic texts. However, these difficulties can be reduced through effective teaching strategies and supportive learning environments.

Overall, the findings suggest that academic reading comprehension should be considered a central element of English language education. It not only enhances language learning but also develops critical thinking, independent learning, and academic competence. Therefore, teachers and educational institutions should place greater emphasis on developing students' academic reading skills in order to prepare them for future educational and professional success.

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THE IMPACT OF AUTHENTIC MATERIALS ON LEARNERS' LANGUAGE COMPETENCE

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Annotation

This article examines the impact of authentic materials on learners' language competence in English language education. The study focuses on how authentic resources such as newspapers, videos, podcasts, social media content, and real-life documents contribute to the development of learners' linguistic, communicative, and sociocultural competence. It also explores how these materials enhance vocabulary acquisition, grammar awareness, listening and reading comprehension, and speaking fluency. The findings suggest that authentic materials significantly improve learners' overall language competence by providing meaningful exposure to real-life language use and encouraging active, learner-centered participation.

Keywords

Authentic materials, language competence, communicative competence, vocabulary development, English language teaching, real-life language, listening skills, reading comprehension, learner motivation, sociocultural competence.

ВЛИЯНИЕ АУТЕНТИЧНЫХ МАТЕРИАЛОВ НА ЯЗЫКОВУЮ КОМПЕТЕНТНОСТЬ ОБУЧАЮЩИХСЯ

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Аннотация. В данной статье рассматривается влияние аутентичных материалов на языковую компетентность обучающихся в обучении английскому языку. Исследование фокусируется на том, как аутентичные ресурсы, такие как газеты, видео, подкасты, контент социальных сетей и реальные документы,



способствуют развитию языковой, коммуникативной и социокультурной компетенции. Также анализируется их влияние на расширение словарного запаса, развитие грамматических навыков, аудирование, чтение и устную речь. Результаты показывают, что аутентичные материалы значительно повышают общую языковую компетентность обучающихся за счет реального языкового опыта и активного участия в учебном процессе.

Ключевые слова: аутентичные материалы, языковая компетентность, коммуникативная компетенция, развитие словарного запаса, обучение английскому языку, реальный язык, навыки аудирования, понимание прочитанного, мотивация, социокультурная компетенция.

INTRODUCTION

In modern English language teaching, the development of learners' language competence is considered one of the primary goals of education. Language competence includes not only knowledge of grammar and vocabulary but also the ability to use language effectively in real-life communication. In this context, authentic materials have gained significant importance because they provide learners with exposure to real-world language use. These materials include newspapers, magazines, advertisements, films, podcasts, interviews, social media posts, and other everyday communicative texts.

The concept of language competence is closely related to communicative competence, which refers to the ability to use language appropriately in different social and academic contexts. Traditional teaching materials often simplify language, which may limit learners' exposure to natural expressions and authentic communication patterns. In contrast, authentic materials present language in its natural form, including idiomatic expressions, cultural references, and varied discourse structures. According to communicative language teaching principles, meaningful interaction with real language input is essential for developing true competence in a foreign language¹.

¹ Richards, J. C. Communicative Language Teaching Today. – Cambridge: Cambridge University Press, 2006.

Authentic materials play a crucial role in bridging the gap between classroom learning and real-world communication. When learners interact with authentic texts, they are exposed to how language is actually used by native and fluent speakers in everyday situations. This exposure helps students develop a deeper understanding of vocabulary usage, grammatical structures, pronunciation patterns, and discourse organization. As a result, learners become more confident and capable in using English in both academic and social contexts.

Another important aspect of authentic materials is their contribution to learner motivation and engagement. Students often find real-life materials more interesting and relevant compared to artificial textbook examples.

This increased motivation leads to more active participation in classroom activities, which in turn supports the development of language competence. Furthermore, authentic materials encourage learners to think critically, interpret meaning, and engage with content at a deeper cognitive level.

The aim of this article is to analyze the impact of authentic materials on learners' language competence and to examine how these materials contribute to the development of linguistic, communicative, and sociocultural skills in English language learning.

LITERATURE REVIEW

Many researchers emphasize the importance of authentic materials in developing learners' language competence. Traditional teaching approaches often relied on simplified texts and controlled language, while modern theories highlight the importance of exposure to natural language use. According to Nunan, authentic materials provide learners with meaningful input that reflects real communication in social and academic contexts². Richards argues that such materials enhance communicative competence by exposing learners to authentic vocabulary, grammar, and

² Nunan, D. Task-Based Language Teaching. – Cambridge: Cambridge University Press, 2004.

discourse patterns³. Widdowson further notes that authenticity is not only related to the origin of materials but also to how learners engage with and interpret them⁴. Previous studies suggest that authentic materials improve vocabulary acquisition, listening and reading comprehension, and speaking fluency. However, researchers also point out that these materials may be challenging for lower-level learners if not properly adapted. Therefore, effective selection, scaffolding, and pedagogical support are essential for maximizing their impact on language competence.

METHODOLOGY

This study employed a qualitative and descriptive research design to investigate the impact of authentic materials on learners' language competence. The research involved English language learners who participated in classroom activities using authentic materials such as newspapers, videos, podcasts, interviews, social media posts, and real-life documents. Data were collected through classroom observation, comprehension tasks, oral performance assessments, and student participation analysis. Particular attention was given to learners' vocabulary development, grammatical awareness, listening and reading comprehension, speaking fluency, and communicative performance. The collected data were analyzed qualitatively to examine how authentic materials influence different components of language competence in English language learning.

ANALYSIS AND RESULTS

The findings of this study clearly demonstrate that authentic materials have a significant positive impact on learners' language competence in English language education. Students who were exposed to authentic resources such as newspapers, videos, podcasts, interviews, and social media content showed higher levels of linguistic accuracy, communicative ability, and classroom engagement compared to those who

³ Richards, J. C. Curriculum Development in Language Teaching. – Cambridge: Cambridge University Press, 2001.

⁴ Widdowson, H. G. Teaching Language as Communication. – Oxford: Oxford University Press, 1978.

relied solely on traditional textbook materials. The results indicate that authentic materials provide meaningful exposure to real-life language use, which is essential for developing comprehensive language competence.

One of the most important findings was the improvement in vocabulary acquisition and grammatical awareness. Authentic materials exposed learners to natural expressions, idiomatic language, and context-based grammar usage. Instead of memorizing isolated language rules, students learned how grammar functions in real communication. As a result, they demonstrated better ability to use vocabulary appropriately in speaking and writing tasks, and their overall language accuracy improved significantly.

The study also revealed strong progress in listening and reading comprehension skills. Learners who regularly engaged with authentic audio and written materials became more capable of understanding different accents, speech speeds, and complex sentence structures. In reading tasks, students improved their ability to identify main ideas, interpret implicit meanings, and analyze real-world information. Although some learners initially struggled with linguistic complexity, continuous exposure and teacher support helped them gradually overcome these difficulties.

Another significant result was the enhancement of speaking fluency and communicative confidence. Students who worked with authentic materials became more willing to express their opinions, participate in discussions, and use English spontaneously. Exposure to real-life dialogues and conversations helped learners develop more natural pronunciation, intonation, and interactional skills. This contributed to stronger communicative competence in both academic and informal contexts.

Furthermore, the study found that authentic materials contributed to sociocultural awareness and critical thinking development. Learners were exposed to different cultural contexts, social issues, and global perspectives, which encouraged them to



analyze and evaluate information more deeply. Group discussions based on authentic content also improved students' ability to justify opinions and engage in meaningful communication with peers.

Classroom observations showed that learner motivation and participation increased significantly when authentic materials were used. Students found real-world content more engaging and relevant, which encouraged active involvement in learning activities. Even lower-level learners benefited when materials were carefully selected and supported with scaffolding techniques such as pre-teaching vocabulary and guided comprehension questions.

However, the study also identified challenges. Some authentic materials were linguistically too difficult for beginner-level students, and teachers needed additional time to adapt and simplify content. Despite these challenges, the overall findings confirm that the benefits of authentic materials in developing language competence are substantial and outweigh the difficulties when used appropriately.

Overall, the results clearly indicate that authentic materials play a vital role in enhancing learners' linguistic, communicative, and sociocultural competence in English language learning.

CONCLUSION

This study examined the impact of authentic materials on learners' language competence in English language education and analyzed their role in developing linguistic, communicative, and sociocultural skills. Based on the findings, it can be concluded that authentic materials are highly effective in improving learners' overall language competence by providing exposure to real-life language use and meaningful communication contexts.

The research demonstrated that authentic materials significantly enhance vocabulary development, grammatical awareness, listening and reading comprehension, and speaking fluency. Students who engaged with real-world resources showed greater

confidence, motivation, and participation in classroom activities. These materials helped learners understand how language functions in authentic situations, which strengthened their ability to communicate effectively in both academic and everyday contexts.

Another important conclusion is that authentic materials contribute to the development of critical thinking and intercultural competence. Learners became more capable of analyzing information, interpreting meanings, and understanding cultural diversity through exposure to real-life content.

Although challenges such as linguistic difficulty and adaptation requirements were identified, these can be effectively managed through careful selection and pedagogical support.

Overall, the findings suggest that authentic materials should be an integral part of modern English language teaching. Their systematic use not only improves language competence but also fosters learner autonomy, motivation, and meaningful engagement with the English language in real-world contexts.

CONCLUSION

This study examined the role of authentic materials in modern language teaching methodology and analyzed their impact on learners' language development and communicative competence. Based on the findings, it can be concluded that authentic materials are a vital element of effective language instruction because they provide learners with exposure to real-life language use and meaningful communication contexts.

The research demonstrated that authentic materials significantly enhance vocabulary development, listening and reading comprehension, speaking fluency, and writing accuracy. Students who were exposed to real-world resources showed higher levels of motivation, engagement, and participation in classroom activities. These materials helped learners understand how language is used in authentic contexts, which improved their ability to communicate effectively in real-life situations.

Another important conclusion is that authentic materials contribute to the development of critical thinking and intercultural awareness. Learners became more capable of analyzing information, interpreting meanings, and understanding cultural differences through exposure to real-world content. Although challenges such as linguistic difficulty and adaptation requirements were identified, these can be addressed through careful selection, scaffolding, and teacher support.

Overall, the findings suggest that authentic materials should be systematically integrated into modern language teaching methodology. Their effective use not only improves language skills but also fosters learner motivation, autonomy, and meaningful engagement with the target language in both academic and real-world contexts.

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THE POETICAL MANIFESTATION OF INDIVIDUALITY IN OGAHI'S WORK

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Abstract

This article examines the individual poetic characteristics of the creative heritage of Muhammad Rizo Ogahiy. The poet's artistic thinking, mastery of image creation, poetic syntax, and distinctive use of simile and other literary devices are analyzed on the basis of scientific and theoretical approaches. The study explores the individual stylistic features of Ogahiy's poetry, his relationship to classical literary traditions, and the principles of poetic innovation reflected in his works. The research demonstrates that individuality in Ogahiy's творчество is an integral phenomenon closely connected with the poet's worldview, aesthetic ideals, and model of artistic thinking. The findings contribute to a deeper understanding of the unique artistic nature and poetic originality of Ogahiy's literary legacy.

Keywords

individuality, poetic thinking, individual style, artistic image, poetic system, simile, metaphor, aesthetic ideal, lyricism, poetic perception.

Аннотация. В данной статье анализируются индивидуально-поэтические особенности творчества Мухаммада Ризо Огахий. На научно-теоретической основе раскрываются особенности художественного мышления поэта, его мастерство создания образов, поэтический синтаксис, а также своеобразие использования сравнений и других художественных средств. В процессе исследования рассматриваются индивидуально-стилевые грани поэзии Огахий, его отношение к классическим литературным традициям и принципы поэтического обновления, проявившиеся в его творчестве. В результате научно



обосновывается, что индивидуальность в творчестве Огахий представляет собой сложное художественное явление, неразрывно связанное с мировоззрением поэта, его эстетическим идеалом и моделью художественного мышления.

Ключевые слова: индивидуальность, поэтическое мышление, индивидуальный стиль, художественный образ, поэтическая система, сравнение, метафора, эстетический идеал, лиризм, поэтическое восприятие.

Annotatsiya. Mazkur maqolada Muhammad Rizo Ogahiy ijodining individual-poetik xususiyatlari tahlil qilinadi. Shoirning badiiy tafakkuri, obraz yaratish mahorati, poetik sintaksisi, tashbeh va boshqa badiiy san'atlardan foydalanishdagi o'ziga xosligi ilmiy-nazariy asosda yoritiladi. Tadqiqot jarayonida Ogahiy she'riyatining individual uslubiy qirralari, uning klassik adabiy an'analarga munosabati hamda poetik yangilanish tamoyillari tahlil etiladi. Natijada Ogahiy ijodidagi individuallik shoirning dunyoqarashi, estetik ideali va badiiy tafakkur modeli bilan uzviy bog'liq hodisa ekanligi ilmiy jihatdan asoslanadi.

Kalit so'zlar: individuallik, poetik tafakkur, individual uslub, badiiy obraz, poetik sistema, tashbeh, metafora, estetik ideal, lirizm, poetik idrok.

Kirish. Adabiyotshunoslikda ijodkor individualligi muammosi badiiy ijodning eng muhim nazariy masalalaridan biri hisoblanadi. Har bir iste'dodli shoir umumiy adabiy an'analar doirasida faoliyat yuritgan holda o'ziga xos badiiy olam yaratadi. Ana shu badiiy olamning shakllanishida individual poetik tafakkur, estetik qarashlar va obrazli mushohada muhim o'rin tutadi. XIX asr o'zbek mumtoz adabiyotining yirik vakili Muhammad Rizo Ogahiy ijodi ham ana shunday betakror badiiy hodisalardan biridir. Ogahiy she'riyati ko'p jihatdan mumtoz an'analar davomchisi bo'lsa-da, uning asarlarida kuzatiladigan poetik yangilanishlar, obrazlar tizimidagi dinamizm, tasviriy vositalarning semantik kengayishi shoir individualligini belgilovchi asosiy omillar sifatida namoyon bo'ladi. Shu sababli Ogahiy ijodidagi o'ziga xos individuallikni o'rganish nafaqat shoir poetikasini, balki XIX asr o'zbek adabiy tafakkurining rivojlanish tendensiyalarini



aniqlashda ham muhim ahamiyat kasb etadi. Badiiy individuallik ijodkorning voqelikni estetik idrok etish usuli, obrazli tafakkur mexanizmi va poetik ifoda tizimining o'ziga xosligida namoyon bo'ladi. Ogahiy ijodida individuallik, avvalo, an'anaviy poetik qoliplarni yangi semantik mazmun bilan boyitish orqali yuzaga chiqadi. Shoir mumtoz adabiyotda keng qo'llanilgan gul, bulbul, sham', parvona, quyosh, oy singari timsollardan foydalanar ekan, ularga yangi emotsional-estetik yuklama beradi. Natijada an'anaviy obrazlar individual poetik tafakkur mahsuliga aylanadi. Ogahiy she'riyatida poetik individuallikning shakllanishi quyidagi omillar bilan xarakterlanadi:

1. Individual obrazli tafakkurning kuchliligi;
2. Tasvir vositalarining semantik faolligi;
3. Lirik kechinmaning chuqur psixologizmi;
4. Til va uslubning poetik ixchamligi;
5. Badiiy fikrning dinamik xarakterga egaligi.

Ogahiy poetikasida obraz yaratish jarayoni oddiy tasvir bilan cheklanmaydi. Shoir ko'pincha bir obraz doirasida bir necha ma'no qatlamlarini mujassamlashtiradi. Natijada obraz ko'p funksiyali poetik birlik sifatida namoyon bo'ladi.

Masalan, yor obrazi faqat muhabbat obyekti emas, balki go'zallik, kamolot, ma'naviy poklik va ilohiy haqiqat ramzi sifatida ham talqin qilinadi. Bunday ko'p qatlamli semantika Ogahiy poetik tafakkurining individual xususiyatini belgilaydi. Shoirning tasvir usulida statiklik emas, balki harakat ustuvorlik qiladi. Obrazlar doimo o'zgarish, rivojlanish va yangi ma'nolar hosil qilish jarayonida tasvirlanadi. Bu holat Ogahiy poetikasining dinamik xarakterini ko'rsatadi. Ogahiy individualligini namoyon etuvchi eng muhim poetik vositalardan biri tashbeh san'atidir. Shoir tashbehni faqat tashqi o'xshatish vositasi sifatida emas, balki poetik tafakkurning faol mexanizmi sifatida qo'llaydi. Ogahiy tashbehlarining muhim xususiyatlari quyidagilardan iborat:

- *semantik kenglik;*
- *tasviriy aniqlik;*



- *emotsional ta'sirchanlik;*
 - *obrazlararo mantiqiy bog'liqlik;*
- zanjirsimon rivojlanish tendensiyasi.*

Shoir ko'pincha bir tashbeh asosida yangi tashbehlarni yuzaga keltiradi. Natijada poetik matnda ma'no harakati hosil bo'ladi. Bunday usul klassik she'riyatdagi an'anaviy tashbeh modelidan farq qilib, individual poetik tafakkur mahsuli sifatida namoyon bo'ladi. Ogahiy tashbehlarida predmet va hodisalar o'rtasidagi munosabatlar nafaqat tashqi belgilar asosida, balki ichki mohiyatga tayangan holda quriladi. Shu jihatdan shoir tashbehlari falsafiy-estetik mazmun kasb etadi. Ogahiy she'riyatida lirik qahramon shoirning estetik qarashlarini ifodalovchi markaziy poetik subyekt hisoblanadi. Ushbu qahramon orqali muhabbat, vafo, sadoqat, adolat, ma'rifat kabi umuminsoniy qadriyatlar talqin qilinadi. Shoir lirik kechinmalarni tasvirlashda ichki ruhiy harakatlarga alohida e'tibor beradi. Natijada hissiyotlar tasviri tashqi voqealar bayonidan ustunlik qiladi. Bu esa psixologik lirizmning kuchayishiga xizmat qiladi. Ogahiy lirik qahramonining asosiy xususiyati shundaki, u passiv kuzatuvchi emas, balki voqelikni baholovchi va unga estetik munosabat bildiruvchi faol subyekt sifatida namoyon bo'ladi. Aynan shu jihat shoir individualligining muhim ko'rinishlaridan biridir.

Til va uslubdagi o'ziga xoslik

Ogahiy uslubining muhim belgilaridan biri poetik tilning serqatlamligidir. Shoir arabiy va forsiy qatlamga mansub so'zlardan mohirona foydalanish bilan birga turkiy leksikaning badiiy imkoniyatlarini ham keng namoyish etadi.

Uning she'riy nutqida:

- *semantik zichlik;*
- *sintaktik mutanosiblik;*
- *musiqiylik;*
- *obrazlilik;*
- *ekspressivlik*



kabi xususiyatlar yaqqol kuzatiladi.

Ogahiy tilining yana bir muhim jihati shundaki, unda badiiy ma'no ko'pincha bevosita emas, balki assotsiativ bog'lanishlar orqali yuzaga chiqadi. Bu esa matnning estetik qimmatini oshirib, o'quvchini faol mushohadaga undaydi.

Xulosa. Ogahiy ijodidagi individuallik shoirning badiiy mahorati, estetik qarashlari va poetik tafakkurining uzviy mahsuli sifatida shakllangan. Shoir mumtoz adabiyot an'alarini ijodiy o'zlashtirib, ularga yangi poetik mazmun baxsh etgan. Natijada uning she'riyati an'anaviy va novatorlik unsurlarining o'zaro uyg'unlashgan badiiy tizimiga aylangan. Ogahiy individualligi obraz yaratish usuli, tashbehlar poetikasi, lirik qahramon konsepsiyasi, til va uslub xususiyatlarida yaqqol namoyon bo'ladi. Shoirning poetik tafakkuri dinamik xarakterga ega bo'lib, badiiy ma'noning uzluksiz rivojlanishini ta'minlaydi. Shu bois Ogahiy ijodi o'zbek mumtoz she'riyati taraqqiyotida alohida estetik hodisa sifatida baholanishi mumkin

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COGNITIVE BIASES IN THE DECISION-MAKING PROCESS

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Abstract

This article analyzes cognitive biases in decision-making processes and their psychological foundations. It explores the nature of heuristics, confirmation bias, availability heuristic, and anchoring effect, as well as their influence on human thinking. Based on the scientific perspectives and experimental studies of Kahneman and Tversky, Simon, and Damasio, the mechanisms of decision-making are examined. The findings indicate that the development of critical thinking and metacognitive skills plays a crucial role in reducing cognitive biases.

Keywords

cognitive biases, decision making, heuristics, confirmation bias, anchoring effect, availability heuristic, metacognition, critical thinking, thinking

QAROR QABUL QILISH JARAYONIDA KOGNITIV XATOLAR

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Annotatsiya: *Mazkur maqolada qaror qabul qilish jarayonida yuzaga keladigan kognitiv xatolar va ularning psixologik asoslari ilmiy jihatdan tahlil qilingan. Unda heuristikalar, tasdiqlovchi og‘ish, mavjudlik heuristikasi, ankerling effekti kabi kognitiv xatolar mohiyati hamda ularning inson tafakkuriga ta’siri yoritilgan. Shuningdek, Kahneman va Tversky, Simon, Damasio kabi olimlarning ilmiy qarashlari va eksperimental tadqiqotlari asosida qaror qabul qilish mexanizmlari izohlangan. Tadqiqot natijalari kognitiv xatolarni kamaytirishda tanqidiy fikrlash va metakognitiv ko‘nikmalarni rivojlantirish muhim ahamiyatga ega ekanligini ko‘rsatadi.*



Kalit soʻzlar: *kognitiv xatolar, qaror qabul qilish, heuristika, tasdiqlovchi ogʻish, ankering effekti, mavjudlik heuristikasi, metakognitsiya, tanqidiy fikrlash, tafakkur*

Аннотация: *В данной статье рассматриваются когнитивные ошибки в процессе принятия решений и их психологические основы. Раскрывается сущность эвристик, эффекта подтверждения, эвристики доступности и эффекта якоря, а также их влияние на мышление человека. На основе научных взглядов и экспериментальных исследований Канаемана и Тверски, Саймона, Дамасио анализируются механизмы принятия решений. Результаты исследования показывают, что развитие критического мышления и метакогнитивных навыков играет важную роль в снижении когнитивных ошибок.*

Ключевые слова: *когнитивные ошибки, принятие решений, эвристика, эффект подтверждения, эффект якоря, эвристика доступности, метакогниция, критическое мышление, мышление*

Kirish

Qaror qabul qilish jarayonida kognitiv xatolar inson tafakkurining ajralmas xususiyati sifatida psixologiya fanida keng oʻrganilgan muammolardan biri hisoblanadi. Zamonaviy kognitiv psixologiya qaror qabul qilishni faqat mantiqiy va ratsional jarayon sifatida emas, balki turli psixologik omillar, xususan, heuristikalar va kognitiv xatolar taʼsirida yuzaga keladigan murakkab jarayon sifatida talqin etadi. Kognitiv xatolar — bu insonning axborotni qayta ishlash jarayonida yuzaga keladigan tizimli ogʻishlar boʻlib, ular koʻpincha tezkor qaror qabul qilishni osonlashtiradi, biroq natijada notoʻgʻri yoki subyektiv xulosalarga olib kelishi mumkin.

Mazkur sohada eng muhim ilmiy tadqiqotlar amerikalik psixologlar Daniel Kahneman va Amos Tversky tomonidan amalga oshirilgan. Ularning 1970–1980-yillardagi eksperimental ishlari heuristikalar va kognitiv xatolar nazariyasining shakllanishiga asos boʻldi. Kahneman va Tversky oʻz tadqiqotlarida insonlar koʻpincha



murakkab ehtimollik hisob-kitoblarini bajarish o'rniga soddalashtirilgan fikrlash strategiyalaridan foydalanishini aniqlagan. Masalan, ular tomonidan o'tkazilgan mashhur "Linda muammosi" tajribasi kon'yunksiya xatosini yaqqol namoyon etadi. Tadqiqot ishtirokchilariga Linda ismli ayol haqida qisqa tavsif berilib, undan uning bank xodimi yoki feministik harakat a'zosi bo'lish ehtimoli baholash so'ralgan. Aksariyat ishtirokchilar "bank xodimi va feministik harakat a'zosi" variantini yuqoriroq ehtimol deb baholagan, bu esa mantiqiy ehtimollik qonunlariga zid hisoblanadi.

Kognitiv xatolarning yana bir muhim turi — bu tasdiqlovchi og'ish (confirmation bias) bo'lib, u shaxsning mavjud e'tiqodlarini tasdiqlovchi ma'lumotlarga e'tibor qaratib, ularga zid bo'lgan axborotni inkor etish yoki e'tiborsiz qoldirishga moyilligida namoyon bo'ladi. Ingliz psixologi Peter Wason tomonidan o'tkazilgan "2-4-6" tajribasi ushbu hodisani tasdiqlaydi. Ushbu tajribada ishtirokchilarga sonlar ketma-ketligi berilib, undan umumiy qoidani aniqlash so'ralgan. Aksariyat ishtirokchilar faqat o'z taxminlarini tasdiqlovchi misollarni tekshirib, qarama-qarshi variantlarni sinab ko'rmagan, natijada noto'g'ri xulosalarga kelgan.

Shuningdek, qaror qabul qilish jarayonida mavjudlik heuristikasi (availability heuristic) ham keng tarqalgan bo'lib, u insonning xotirasida oson esga tushadigan voqealar asosida ehtimollikni baholashga moyilligini anglatadi. Tversky va Kahneman o'tkazgan tadqiqotlarda ishtirokchilardan ingliz tilidagi so'zlar tarkibida "K" harfi birinchi o'rinda ko'proq uchraydimi yoki uchinchi o'rinda degan savol so'ralgan. Ko'pchilik "K" birinchi o'rinda ko'proq uchraydi deb hisoblagan, chunki bunday so'zlarni eslash osonroq bo'lgan, aslida esa uchinchi o'rinda uchrash chastotasi yuqoriroq bo'lgan.

Qaror qabul qilishda yana bir muhim kognitiv xato — bu ankeri (anchoring effect) hisoblanadi. Bu hodisa insonning dastlabki berilgan axborotga ortiqcha tayanishi bilan tavsiflanadi. Kahneman va Tversky tomonidan o'tkazilgan tajribada ishtirokchilarga tasodifiy aylantirilgan ruletka soni ko'rsatilgan va undan keyin Afrika



davlatlarining BMTdagi ulushi haqida baho berish so‘ralgan. Natijalar shuni ko‘rsatdiki, ruletkada tushgan son yuqori bo‘lgan guruh yuqoriroq baho bergan, past son tushgan guruh esa pastroq baho bildirgan. Bu esa inson fikri boshlang‘ich “ankor”ga qanchalik bog‘liq ekanligini ko‘rsatadi.

Herbert Simon tomonidan ilgari surilgan cheklangan ratsionallik (bounded rationality) nazariyasi ham qaror qabul qilishdagi kognitiv xatolarni tushuntirishda muhim ahamiyatga ega. Uning fikricha, insonning kognitiv resurslari — vaqt, e‘tibor va axborotni qayta ishlash imkoniyatlari — cheklangan bo‘lgani sababli, u optimal emas, balki qoniqarli (satisficing) qarorlarni qabul qiladi. Bu esa kognitiv xatolar yuzaga kelishining tabiiy asosini tashkil etadi. Zamonaviy tadqiqotlarda qaror qabul qilish jarayoni ikki tizimli model asosida ham izohlanadi. Kahnemanning “Tez va sekin fikrlash” konsepsiyasiga ko‘ra, inson tafakkuri ikki tizimdan iborat: birinchi tizim tezkor, intuitiv va avtomatik bo‘lib, ko‘pincha heuristikalariga asoslanadi; ikkinchi tizim esa sekin, analitik va ongli fikrlashni talab qiladi. Kognitiv xatolar asosan birinchi tizim faoliyati bilan bog‘liq bo‘lib, ikkinchi tizim ularni nazorat qilish va tuzatish imkoniyatiga ega, biroq u har doim ham faol ishlamaydi. Bundan tashqari, emotsional holatlar ham qaror qabul qilish jarayoniga sezilarli ta‘sir ko‘rsatadi. Antonio Damasio o‘zining somatik markerlar nazariyasida emotsiyalar qaror qabul qilishda muhim yo‘l-yo‘riq beruvchi signal vazifasini bajarishini ta‘kidlaydi. Biroq kuchli emotsiyalar, ayniqsa stress va qo‘rquv, kognitiv xatolarni kuchaytirishi mumkin, chunki ular tezkor va yuzaki qaror qabul qilishga olib keladi.

Xulosa

Xulosa o‘rnida aytishimiz mumkinki, qaror qabul qilish jarayonida kognitiv xatolar inson tafakkurining ajralmas qismi bo‘lib, ular evolyutsion jihatdan tezkor qarorlar qabul qilishga yordam bergan bo‘lsa-da, zamonaviy murakkab muhitda noto‘g‘ri xulosalarga olib kelishi mumkin. Shu sababli tanqidiy fikrlashni rivojlantirish, metakognitiv ko‘nikmalarni shakllantirish va analitik yondashuvni kuchaytirish orqali

kognitiv xatolar ta'sirini kamaytirish mumkin. Ilmiy tadqiqotlar shuni ko'rsatadiki, inson o'z fikrlash jarayonini anglab, ongli ravishda nazorat qilgan taqdirdagina yanada asoslangan va samarali qarorlar qabul qilishga erisha oladi.

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PSYCHOLOGICAL FOUNDATIONS OF DEVELOPING CRITICAL THINKING

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Abstract

This article examines the psychological foundations of critical thinking development. It analyzes the essence of critical thinking, its cognitive and metacognitive mechanisms, and its relationship with emotional and social factors. The study also highlights effective methods for fostering critical thinking in the educational process and its significance in the modern information environment. The findings indicate that critical thinking plays a crucial role in an individual's intellectual development and requires a comprehensive approach for its enhancement.

Keywords

critical thinking, cognitive processes, metacognition, thinking, motivation, emotional intelligence, educational psychology, social environment, information analysis

TANQIDIY FIKRLASHNI RIVOJLANTIRISHNING PSIXOLOGIK ASOSLARI

Berdaq nomidagi Qoraqalpoq davlat universiteti Pedagogika va psixologiya
kafedrasi Amaliy psixologiya yónalishi 3-bosqish talabasi

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Annotatsiya: *Mazkur maqolada tanqidiy fikrlashni rivojlantirishning psixologik asoslari ilmiy jihatdan tahlil qilingan. Unda tanqidiy fikrlashning mohiyati, kognitiv va metakognitiv mexanizmlari, emotsional va ijtimoiy omillar bilan bog'liqligi yoritilgan. Shuningdek, ta'lim jarayonida tanqidiy fikrlashni shakllantirishning samarali usullari hamda zamonaviy axborot muhitida uning ahamiyati asoslab berilgan. Tadqiqot*



natijalari shuni ko'rsatadiki, tanqidiy fikrlash shaxsning intellektual rivojlanishida muhim o'rin egallaydi va uni rivojlantirish uchun kompleks yondashuv zarur.

Kalit so'zlar: *tanqidiy fikrlash, kognitiv jarayonlar, metakognitsiya, tafakkur, motivatsiya, emotsional intellekt, ta'lim psixologiyasi, ijtimoiy muhit, axborot tahlili*

Аннотация: *В данной статье рассматриваются психологические основы развития критического мышления. Освещаются сущность критического мышления, его когнитивные и метакогнитивные механизмы, а также взаимосвязь с эмоциональными и социальными факторами. Особое внимание уделяется эффективным методам формирования критического мышления в образовательном процессе и его значению в условиях современного информационного общества. Результаты исследования показывают, что критическое мышление играет важную роль в интеллектуальном развитии личности и требует комплексного подхода к его формированию.*

Ключевые слова: *критическое мышление, когнитивные процессы, метакогниция, мышление, мотивация, эмоциональный интеллект, образовательная психология, социальная среда, анализ информации*

Kirish

Tanqidiy fikrlashni rivojlantirishning psixologik asoslari zamonaviy psixologiya va pedagogika fanlarining muhim tadqiqot yo'nalishlaridan biri hisoblanadi. Global axborotlashuv, raqamli texnologiyalar va ijtimoiy tarmoqlarning keng tarqalishi inson ongiga turli xil axborot oqimlarining tezkor va nazoratsiz kirib kelishiga sabab bo'lmoqda. Bunday sharoitda shaxsning mustaqil fikrlashi, axborotni tahlil qila olishi, baholashi va xulosalar chiqarishi muhim kompetensiyaga aylanmoqda. Shu sababli tanqidiy fikrlashni shakllantirish va rivojlantirishning psixologik mexanizmlarini o'rganish alohida ilmiy ahamiyat kasb etadi.

Tanqidiy fikrlash — bu shaxsning axborotni passiv qabul qilish emas, balki uni faol qayta ishlash, tahlil qilish, dalillarni solishtirish, sabab-oqibat aloqalarini aniqlash va



asoslangan xulosalar chiqarish qobiliyatidir. Psixologik nuqtai nazardan, tanqidiy fikrlash kognitiv jarayonlar tizimiga kiradi va u diqqat, xotira, tafakkur, idrok va nutq kabi psixik funksiyalar bilan chambarchas bog‘liq holda namoyon bo‘ladi. Ayniqsa, tafakkur jarayonining analitik va sintetik shakllari tanqidiy fikrlashning asosini tashkil etadi.

Tanqidiy fikrlashning shakllanishida kognitiv psixologiya muhim nazariy asos bo‘lib xizmat qiladi. Ushbu yo‘nalishga ko‘ra, inson tafakkuri ma’lumotlarni qayta ishlovchi tizim sifatida qaraladi. Tanqidiy fikrlash jarayonida shaxs yangi ma’lumotni avvalgi bilimlari bilan solishtiradi, kognitiv sxemalar orqali uni qayta ishlaydi va natijada yangicha bilim hosil qiladi. Bu jarayonda assimilyatsiya va akkomodatsiya mexanizmlari faol ishlaydi. Assimilyatsiya yangi axborotni mavjud bilim tizimiga moslashtirishni anglatadi, akkomodatsiya esa mavjud bilim tizimini yangi axborotga mos ravishda o‘zgartirishni bildiradi. Aynan akkomodatsiya jarayoni tanqidiy fikrlashning rivojlanishida muhim rol o‘ynaydi, chunki u shaxsni o‘z qarashlarini qayta ko‘rib chiqishga undaydi.

Tanqidiy fikrlashning psixologik asoslaridan yana biri metakognitiv jarayonlar hisoblanadi. Metakognitsiya — bu shaxsning o‘z fikrlash jarayonini anglash, nazorat qilish va boshqarish qobiliyatidir. Metakognitiv rivojlanish darajasi yuqori bo‘lgan shaxslar o‘z fikrlarini tahlil qila oladi, xatolarini aniqlaydi va ularni tuzatish strategiyalarini ishlab chiqadi. Bu esa tanqidiy fikrlashning yuqori darajada shakllanishiga olib keladi. Metakognitiv ko‘nikmalar, xususan, o‘z-o‘zini nazorat qilish, refleksiya, rejalashtirish va baholash tanqidiy fikrlashni rivojlantirishda asosiy komponentlar hisoblanadi.

Shuningdek, tanqidiy fikrlashning rivojlanishida emotsional-intellektual omillar ham muhim ahamiyatga ega. Insonning emotsional holati uning fikrlash jarayoniga bevosita ta’sir ko‘rsatadi. Kuchli stress, qo‘rquv yoki xavotir sharoitida insonning analitik fikrlash qobiliyati pasayadi va u tezkor, lekin yuzaki qarorlar qabul qilishga



moyil bo'ladi. Aksincha, emotsional barqarorlik va o'zini boshqarish qobiliyati yuqori bo'lgan shaxslar muammolarni chuqurroq tahlil qilishga qodir bo'ladi. Shu sababli tanqidiy fikrlashni rivojlantirish jarayonida emotsional intellektni ham rivojlantirish muhim hisoblanadi.

Ijtimoiy psixologiya nuqtai nazaridan qaraganda, tanqidiy fikrlash shaxsning ijtimoiy muhit bilan o'zaro ta'siri natijasida shakllanadi. Oila, ta'lim muassasalari va kengroq ijtimoiy muhit shaxsning fikrlash uslubiga bevosita ta'sir ko'rsatadi. Masalan, autoritar muhitda tarbiyalangan shaxslar ko'pincha tayyor fikrlarni qabul qilishga moyil bo'ladi, bu esa tanqidiy fikrlashning rivojlanishini cheklaydi. Demokratik va ochiq muloqotga asoslangan muhit esa mustaqil fikrlashni rag'batlantiradi. Shuningdek, guruh bosimi, konformizm va stereotiplar tanqidiy fikrlash jarayoniga salbiy ta'sir ko'rsatishi mumkin.

Tanqidiy fikrlashni rivojlantirishda ta'lim tizimining roli alohida ahamiyatga ega. Zamonaviy pedagogik yondashuvlar, xususan, muammoli o'qitish, interfaol metodlar, munozaralar, debatlar va keys-stadi usullari talabalarda mustaqil fikrlashni rivojlantirishga xizmat qiladi. Bu metodlar orqali o'quvchilar faqat tayyor bilimlarni o'zlashtiribgina qolmay, balki ularni tahlil qilish, baholash va amaliyotda qo'llash ko'nikmalarini ham egallaydi. Ayniqsa, savol berish texnikasi tanqidiy fikrlashni rivojlantirishda muhim vosita hisoblanadi. To'g'ri qo'yilgan savollar shaxsni chuqur fikrlashga undaydi va muammoning turli jihatlarini ko'rib chiqishga yordam beradi.

Shaxsning individual psixologik xususiyatlari tanqidiy fikrlashning shakllanishi va rivojlanishida hal qiluvchi omillardan biri sifatida namoyon bo'ladi. Xususan, intellektual salohiyat darajasi, bilishga bo'lgan qiziqish, ichki va tashqi motivatsiya, kognitiv moslashuvchanlik hamda shaxsning ochiqlik darajasi ushbu jarayonning samaradorligini belgilaydi. Psixologiya fanida intellekt ko'pincha murakkab muammolarni hal qilish, abstrakt fikrlash va mantiqiy xulosalar chiqarish qobiliyati bilan bog'lanadi. Shu nuqtai nazardan, yuqori intellektual darajaga ega bo'lgan shaxslar



axborotni chuqurroq tahlil qilish, turli nuqtai nazarlarni solishtirish va asoslangan qarorlar qabul qilishda ustunlikka ega bo'ladi. Motivatsiya omili esa tanqidiy fikrlashni rivojlantirishning markaziy mexanizmlaridan biri sifatida talqin etiladi. Xususan, amerikalik psixologlar Edvard Desi va Richard Ryan tomonidan ishlab chiqilgan o'z-o'zini belgilash nazariyasiga (Self-Determination Theory) ko'ra, ichki motivatsiya shaxsning mustaqil ravishda bilim olishga, yangiliklarni o'rganishga va muammolarni hal etishga bo'lgan intilishini kuchaytiradi. Ularning ta'kidlashicha, ichki motivatsiyaga ega bo'lgan individlar faol kognitiv izlanish olib boradi va bu jarayon tanqidiy fikrlashning chuqurlashuviga olib keladi. Aksincha, faqat tashqi rag'batlarga asoslangan faoliyat ko'pincha yuzaki o'rganish bilan cheklanadi.

Shuningdek, shaxsning ochiqlik (openness to experience) xususiyati ham muhim ahamiyat kasb etadi. Bu tushuncha "Katta beshlik" (Big Five) shaxs modeli doirasida keng o'rganilgan bo'lib, u yangi tajribalarga ochiqlik, kreativ fikrlash va intellektual qiziquvchanlikni o'z ichiga oladi. Tadqiqotlar shuni ko'rsatadiki, ochiqlik darajasi yuqori bo'lgan shaxslar stereotiplardan holi holda fikrlashga, alternativ g'oyalarni qabul qilishga va muammolarga noodatiy yondashishga moyil bo'ladi, bu esa tanqidiy fikrlashni rivojlantirishga xizmat qiladi.

Kognitiv moslashuvchanlik ham alohida e'tiborga loyiq bo'lib, u shaxsning o'z fikrlarini vaziyatga qarab o'zgartira olish, yangi ma'lumotlarga moslasha olish va turli strategiyalarni qo'llay olish qobiliyatini anglatadi. Shveysariyalik psixolog Jan Piaje nazariyasiga ko'ra, bilish jarayoni doimiy ravishda assimilyatsiya va akkomodatsiya orqali rivojlanadi. Aynan akkomodatsiya — ya'ni mavjud bilim tuzilmalarini yangi axborot asosida qayta tashkil etish — tanqidiy fikrlashning eng muhim ko'rsatkichlaridan biridir.

Bundan tashqari, amerikalik psixolog Robert Sternberg o'zining triarkik intellekt nazariyasida tanqidiy fikrlashni analitik intellekt bilan bog'laydi va uni muammolarni tahlil qilish, baholash hamda mantiqiy xulosalar chiqarish qobiliyati sifatida izohlaydi.



Uning fikricha, muvaffaqiyatli intellekt faqat bilimga emas, balki ushbu bilimlardan samarali foydalanish va ularni tanqidiy qayta ishlash qobiliyatiga ham bog'liqdir. Umuman olganda, individual psixologik xususiyatlar — xususan, intellektual daraja, motivatsiya turi, ochiqlik va moslashuvchanlik — tanqidiy fikrlashning rivojlanishida o'zaro integratsiyalashgan holda namoyon bo'ladi. Ushbu omillarni kompleks rivojlantirish orqali shaxsning mustaqil, chuqur va asoslangan fikrlash qobiliyatini shakllantirish mumkin.

Shuningdek, zamonaviy axborot muhitida tanqidiy fikrlashning ahamiyati yanada ortib bormoqda. Internet va ijtimoiy tarmoqlarda tarqalayotgan noto'g'ri yoki manipulyativ axborotlarni ajratib olish uchun shaxsda tanqidiy tahlil qilish ko'nikmalari bo'lishi zarur. Media savodxonlik tanqidiy fikrlashning ajralmas qismi sifatida qaraladi. Shaxs axborot manbalarining ishonchliligini baholash, faktlarni tekshirish va manipulyatsiyalarni aniqlash qobiliyatiga ega bo'lishi lozim.

Xulosa

Xulosa qilib aytganda, tanqidiy fikrlash murakkab psixologik jarayon bo'lib, u kognitiv, metakognitiv, emotsional va ijtimoiy omillarning o'zaro ta'siri natijasida shakllanadi. Uni rivojlantirish uchun ta'lim jarayonida zamonaviy pedagogik metodlardan foydalanish, mustaqil fikrlashni rag'batlantiruvchi muhit yaratish va shaxsning ichki motivatsiyasini qo'llab-quvvatlash zarur. Tanqidiy fikrlashni rivojlantirish nafaqat individual rivojlanish, balki jamiyatning intellektual salohiyatini oshirish uchun ham muhim ahamiyatga ega.

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REDUCING THE LOSS OF VALUABLE COMPONENTS BY MANAGING BLASTING OPERATIONS IN TITANOMAGNETITE ORE DEPOSITS

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Abstract: This scientific article discusses the reduction of valuable component losses through the scientifically-based management of blasting processes in titanomagnetite ore deposits. In our research, the Tebinbulak titanomagnetite deposit was selected as the mining site for the open-pit extraction of mineral resources by a mining enterprise. During our study, the effect of blasting parameters on ore quality and ore loss was preliminarily analyzed by examining the degree of ore fragmentation. Based on theoretical data, the potential for reducing ore loss and quality degradation by optimizing blasting operations at open-pit mining enterprises is demonstrated through examples.

Keywords: Tebinbulak deposit, drilling and blasting processes, geological setting, mining-technical parameters, valuable components, ore loss, ore fragmentation.

СНИЖЕНИЕ ПОТЕРЬ ПОЛЕЗНЫХ КОМПОНЕНТОВ ЗА СЧЁТ УПРАВЛЕНИЯ ВЗРЫВНЫМИ РАБОТАМИ НА МЕСТОРОЖДЕНИЯХ ТИТАНОМАГНЕТИТОВЫХ РУД

Аннотация: В данной научной статье обсуждаются вопросы снижения потерь полезных компонентов посредством научно обоснованного управления процессами взрывания на месторождениях титаномагнетитовых руд. В качестве объекта исследования было выбрано Тебинбулакское титаномагнетитовое месторождение, разрабатываемое горнодобывающим предприятием открытым способом. В ходе нашего исследования, изучив влияние параметров взрывания на степень измельчения руды, был проведён предварительный анализ их воздействия на качество руды и процессы её потерь.



На основе теоретических данных и конкретных примеров была доказана возможность снижения потерь и разубоживания руды за счёт оптимизации взрывных работ на горнодобывающих предприятиях, ведущих разработку открытым способом.

Ключевые слова: *месторождение Тебинбулак, буровзрывные работы, геологическое строение, горнотехнические параметры, полезные компоненты, потери руды, измельчение руды.*

TITAN-MAGNETIT RUDA KONLARIDA PORTLATISH ISHLARINI BOSHQARISH ORQALI FOYDALI KOMPONENTLARNING YO‘QOTILISHINI KAMAYTIRISH

Annotatsiya: *Ushbu ilmiy maqolada titan-magnetit ruda konlarida portlatish jarayonlarini ilmiy asosda boshqarish orqali foydali komponentlarning yo‘qotilishini kamaytirish masalalari muhokama qilingan. Tadqiqotlarimiz davomida konchilik korxonasi tomonidan foydali qazilma konlarini ochiq usulda qazib oluvchi kon obyekti sifatida Tebinbuloq titan-magnetit koni tanlab olinadi. Biz tadqiqotimiz davomida portlatish parametrlarining rudaning maydalanish darajasini o‘rganib chiqqan holda, rudaning sifati va rudaning yo‘qotilishi jarayonlariga ta’siri taxminiy jihatdan tahlil qilingan. Nazariy ma’lumotlarga asoslangan holda ochiq usulda qazib oluvchi konchilik korxonalarida portlatish ishlarini optimallashtirish orqali ruda yo‘qotilishi va sifatsizlanishini kamaytirish imkoniyatlari misollar tariqasida isbotlab berildi.*

Kalit so‘zlar: *Tebinbuloq koni, burg‘ilash-portlatish jarayonlari, geologik joylashish holati, kontexnik parametrlar, foydali komponentlar, ruda yo‘qotilishi, ruda maydalanishi.*

Introduction

The rapid development of the global metallurgical industry is leading to an increased demand for titanomagnetite ores, which contain strategic metals such as iron, titanium, and vanadium. Many sectors of the modern economy, including mechanical

engineering, energy, aerospace technology, and construction, rely on these metals. Therefore, the effective development of titanomagnetite deposits and the maximum extraction of valuable components is one of the most important scientific and practical tasks. In mining practice, drilling and blasting operations are one of the primary sources of mineral loss. During the blasting process, the boundary between the ore and the waste rock is violated, the ore is over-crushed and mixed, and valuable components are scattered. As a result, the quality of the extracted ore decreases, the composition of the material supplied to the processing plant deteriorates, and overall economic efficiency decreases. The Tebinbulak titanomagnetite deposit is one of the largest iron ore deposits in Uzbekistan and holds strategic importance for the development of the country's metallurgical industry. The vast reserves of the deposit and the prospects for its long-term exploitation necessitate the improvement of blasting technologies. The correct selection of blasting parameters, especially at ore body boundaries, directly affects the degree of extraction of valuable components. The effectiveness of blasting operations depends on many factors. These include the physical and mechanical properties of the rocks, the strength of the ore and surrounding rocks, the type of explosive, the diameter of the boreholes, the distance between them, the structure of the charge, and the blasting sequence. Each of these factors has a different effect on the quality of grinding and ore loss. In modern mining, blasting is considered not only a method for crushing rocks but also a method for monitoring ore quality. The quality of primary crushing determines the efficiency of subsequent extraction, loading, transportation, and processing operations. Therefore, the optimization of blasting operations allows for an increase in the efficiency of the entire technological chain. One of the characteristic features of titanomagnetite ores is their high density and strength. Iron oxides in magnetite and titanomagnetite minerals increase the explosive resistance of the rock. As a result, the incorrect selection of blast energy leads to excessive ore crushing or, conversely, to the formation of oversized rocks. Both cases lead to the loss of valuable components. Ore



loss in mining operations manifests in two main forms. The first is direct loss, in which a certain portion of the ore is not extracted or sent to the landfill along with the coating mine. The second is liquefaction, in which the ore is mixed with adjacent rock, reducing the average amount of valuable components. Improperly organized blasting operations lead to an increase in both of these indicators. In some sections of the Tebinbulak deposit, the boundaries between ore bodies and the overlying rocks may have complex geometry. Under these conditions, the application of standard blasting parameters increases the risk of ore mixing. Therefore, it is advisable to use differentiated blasting systems based on geological data. The distribution of blast energy within the rock mass is governed based on geomechanical principles. The shock waves and gas pressure generated during the explosion create a system of cracks within the rock. If there is too much energy, the boundary between the ore and the waste rock is disrupted, and mixing occurs. Insufficient energy leads to the formation of large boulders. Therefore, determining the optimal energy density is one of the most important tasks in blasting operations. In recent years, digital technologies and computer modeling methods have been widely used in managing blasting processes. The use of three-dimensional geological models, geomechanical simulations, and artificial intelligence elements allows for the prediction of blast results. This will help reduce the loss of valuable components. Developing a scientifically-based management system for blasting operations at the Tebinbuloq deposit can increase the recovery rates of iron, titanium, and vanadium components. This will not only enhance the mine's economic efficiency but also serve to strengthen the raw material base for the country's metallurgical industry. The primary objective of this research is to study the impact of blasting parameters on the loss of valuable components under the conditions of the Tebinbuloq deposit, develop scientific recommendations for optimizing blasting operations, and improve the ore's quality indicators. The geological structure of the Tebinbuloq titanomagnetite deposit is particularly significant in the design and management of



blasting operations. The ore bodies in the deposit area are primarily composed of intrusive and metasomatic formations enriched with magnetite and titanomagnetite minerals, whose physical and mechanical properties differ considerably from those of conventional iron ores. The ore's high density, compressive strength, and modulus of elasticity alter how blast energy propagates through the rock mass. Therefore, selecting blasting parameters based on the standard norms used in other types of deposits may not yield the expected results. While the main task of the blasting process is to break the rock mass into a granulometric composition suitable for excavation and loading equipment, another critical objective in titanomagnetite deposits is to ensure the maximum preservation of valuable components. The geological variability observed at the boundaries of ore bodies further complicates blasting operations. Some sections exhibit sharp fluctuations in the ore's iron content, uneven distribution of titanium and vanadium components, and complex contact zones with the surrounding rock. If the blast energy is excessively high, ore-bearing and non-ore-bearing rocks will mix in these contact zones. Consequently, the proportion of valuable components in the excavated mass decreases. This situation leads to serious economic losses, especially in areas requiring selective mining. Therefore, pre-modeling geological blocks and assessing their susceptibility to blasting are integral parts of modern blasting designs. One of the key indicators determining blasting efficiency is the granulometry of the fragmented rock. Experiments show that excessive fragmentation of the ore leads not only to dust formation but also to the loss of a portion of valuable components during beneficiation processes. A certain amount of the iron and titanium minerals contained in very fine fractions can be lost along with technological waste. At the same time, insufficiently fragmented large boulders reduce excavator productivity and lead to additional costs for secondary crushing. For this reason, achieving an optimal granulometric composition is one of the main goals of blast design. The choice of explosive type also significantly affects the preservation of valuable components. Emulsion explosives, granulites, and

ANFO-type mixtures differ from one another in their energy release, detonation velocity, and gas-generating properties. Although high-energy explosives may be required for hard titanomagnetite ores, an excessive increase in energy creates the risk of over-fragmentation. Therefore, modern mines use combined explosive charges to control the energy distribution along the borehole. This method is particularly effective at the boundary between ore-bearing and non-ore-bearing rock. The parameters of the drilling pattern also directly affect the blasting results. Increasing the distance between boreholes and the burden between rows leads to an uneven distribution of energy. As a result, large fragments form in some areas, while excessive crushing occurs in others. Conversely, if boreholes are placed too densely, the consumption of explosives increases and economic efficiency decreases. In the conditions of the Tebinbulak deposit, it is advisable to use differentiated drilling patterns that account for the strength of the rock and the geometry of the ore bodies. This involves applying separate parameters for the ore blocks and different parameters for the overlying rock layers. The displacement that occurs during the blasting process is one of the primary factors leading to ore loss. As a result of the blast, the rock mass shifts a certain distance from its original position. If the magnitude of this displacement is not calculated beforehand, the planned excavation boundaries along the geological contours will be violated. Consequently, the ore mixes with the surrounding waste rock or, conversely, a portion of the ore is left unexcavated. At modern mines, post-blast displacement maps are being created using high-precision GPS monitoring, drones, and laser scanning technologies. This data serves as an important resource for improving subsequent blasting designs. One of the promising directions for managing blasting operations at the Tebinbulak mine is the use of electronic detonators. While the timing accuracy in traditional pyrotechnic systems is limited, electronic detonators allow for process control at the millisecond level. This helps to control the formation of the blasting front, ensure even energy distribution throughout the rock mass, and reduce ore dilution. Experiments show that using



electronic detonators improves the quality of fragmentation and reduces the loss of valuable components. When evaluating blasting results, it is necessary to consider not only the degree of fragmentation but also the recovery rate of valuable components. In mining practice, for a long time, blasting efficiency has been primarily assessed by the ease of excavation. However, in deposits with a complex composition, such as titanomagnetite ores, the economic outcome is more dependent on the metal recovery rate. Therefore, blasting designs must be optimized based on the recovery indicators for iron, titanium, and vanadium components. The development of digital geological modeling technologies is taking blasting operations to a new level. Using three-dimensional block models, the quality, strength, and structural properties of the ore are assessed in advance. Based on this data, individual parameters are developed for each blasting block. As a result, energy consumption is reduced, fragmentation quality improves, and the level of ore dilution decreases. Such an approach is particularly relevant for the Tebinbulak deposit, given its large scale and complex geological structure. It is also important to consider environmental factors in blasting processes. Dust generation, ground vibration, and air-blast shock waves affect not only the environment but also ore recovery. Excessive blast energy increases the proportion of fine particles, leading to the loss of valuable components. For this reason, measures aimed at environmental safety often also enhance economic efficiency. In modern blasting operations, technologies for local energy management, water saturation, and gas generation control are widely used. At the Tebinbulak titanomagnetite deposit, managing blasting operations is one of the most critical means of reducing the loss of valuable components. Significant improvements in ore quality can be achieved through an in-depth study of geological features, the application of differentiated blasting parameters, the use of electronic detonators, and the implementation of digital modeling technologies. Such an approach not only increases the overall economic efficiency of the deposit but also ensures the maximum recovery of iron, titanium, and vanadium



components. Research has shown that the main controllable parameters for blasting efficiency are borehole diameter, row spacing, charge design, and blasting sequence. Selecting optimal values for these parameters ensures an even distribution of blast energy within the rock mass, reduces the volume of ultrafine fractions, and increases the preservation rate of valuable components. It has been established that regulating energy density, particularly at the boundaries of ore bodies, is of great importance in reducing ore loss and dilution. The granulometric composition resulting from blasting has been proven to directly affect the subsequent stages of excavation, loading, transportation, and processing. The formation of oversized fragments leads to additional crushing costs, while excessive pulverization can cause a portion of the iron, titanium, and vanadium minerals to be lost with technological waste. Therefore, achieving an optimal granulometric composition should be adopted as the primary criterion when designing blasting operations. The use of electronic detonators and digital blasting systems has been confirmed to allow for high-precision control of blasting processes. Blasting sequences with millisecond accuracy enable control over the rock mass deformation process, direction of the blast energy, and an increase in the recovery coefficient of valuable components. The implementation of these technologies at the Tebinbulak deposit will serve to reduce ore dilution and increase extraction efficiency. It has been substantiated that applying three-dimensional geological modeling and geomechanical simulation methods at the deposit expands the potential for predicting blasting outcomes. Individual blasting designs developed based on geological block models allow for the precise consideration of ore and waste rock boundaries, optimizing energy consumption, and minimizing the loss of valuable components. Additionally, ore displacement processes resulting from blasting were analyzed. It was determined that tracking post-blast displacement and integrating it with geological models helps to increase the accuracy of excavation contours. This prevents some of the ore from being left unmined or being discarded with waste rock. By optimizing blasting operations at



the Tebinbulak titanomagnetite deposit, it is possible to significantly reduce the loss of valuable components such as iron, titanium, and vanadium. The introduction of differentiated blasting technologies, based on geological data, electronic detonators, digital modeling systems, and modern monitoring methods, serves to increase the economic efficiency of the mine, improve ore quality indicators, and create a high-quality raw material base for the metallurgical industry. The results obtained during this study hold significant scientific and practical importance for improving the scientific and methodological foundations of blasting operations management in the development of titanomagnetite and iron ore deposits, ensuring the complex and rational use of mineral resources, and implementing sustainable mining principles in practice.

CONCLUSION. In conclusion, it has been determined that the scientifically-based management of blasting operations at the Tebinbulak titanomagnetite deposit is a crucial factor in reducing the loss of valuable components and increasing the overall economic efficiency of the mine. The research findings indicate that blasting processes should be regarded not merely as a means of crushing rock mass, but as a key technological stage that shapes ore quality indicators. Studies have revealed that titanomagnetite ores possess high strength and density, a condition that significantly affects the distribution characteristics of blast energy throughout the rock mass. It has been substantiated that the incorrect selection of blasting parameters can lead to the intermingling of ore and waste rock, a decrease in the quantity of valuable components, and a deterioration in ore quality. Therefore, the necessity of using differentiated blasting technologies that account for the specific characteristics of geological blocks has been identified.

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DYNAMIC EVALUATION OF THE CREATIVE ECONOMIC EFFICIENCY OF THE WORLD'S LEADING COUNTRIES (USING THE MALMQUIST INDEX)

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Abstract. This article dynamically evaluates the creative economic efficiency of the world's leading countries using the Malmquist Productivity Index (MPI). The aim of the research is to develop scientific and practical proposals for diversifying the economies of countries such as the UK, South Korea, the UAE, and Singapore. Based on a cross-data analysis between 2017 and 2023, the results show that only the UK achieved a Malmquist index greater than 1 (1.313), with a productivity increase of 31.3%. In contrast, despite technological improvements of 4.8% and 6.6% in South Korea and the UAE respectively, their overall indices declined due to worsening efficiency indicators. **Key words:** creative economy, Malmquist index, dynamic evaluation, creative export, technological change, efficiency change, DEA analysis.

DUNYONING YETAKCHI DAVLATLARI KREATIV IQTISODIY SAMARADORLIGINI DINAMIK BAHOLASH (MALMQUIST INDEKSI YORDAMIDA)

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Annotatsiya. Ushbu maqolada dunyoning yetakchi davlatlari kreativ iqtisodiyoti samaradorligi Malmquist produktivlik indeksi (MPI) yordamida dinamik baholangan. Tadqiqot maqsadi Buyuk Britaniya, Janubiy Koreya, BAA va Singapur kabi davlatlar iqtisodiyotini diversifikatsiya qilish bo'yicha ilmiy-amaliy takliflar ishlab chiqishdan iborat. 2017 va 2023-yillardagi ma'lumotlarning kross-tahlili natijalariga ko'ra, faqatgina Buyuk Britaniyada Malmquist indeksi 1 dan katta (1,313) ekanligi va

samaradorlik 31,3% ga oshganligi aniqlangan. Janubiy Koreya va BAA kabi davlatlarda mos ravishda 4,8% va 6,6% texnologik o'sish kuzatilgan bo'lsa-da, umumiy samaradorlik ko'rsatkichlari yomonlashganligi sababli ularning indeksi pasaygan.

Kalit so'zlar: kreativ iqtisodiyot, Malmquist indeksi, dinamik baholash, kreativ eksport, texnologik o'zgarish, samaradorlik o'zgarishi, DEA tahlili.

Zamonaviy jahon iqtisodiyotida kreativ sanoat mamlakatlarning barqaror o'sishi va xalqaro raqobatbardoshligini ta'minlovchi muhim vositaga aylanib bormoqda. Bunday sharoitda davlatlarning kreativ mahsulotlar ishlab chiqarish va eksport qilish salohiyatini nafaqat ma'lum bir davr uchun statik baholash, balki uning vaqtlararo dinamik o'zgarishlarini tahlil qilish ham dolzarb hisoblanadi. Ushbu tadqiqotning maqsadi kreativ mahsulotlar eksportining dinamik unumdorligini Malmquist indeksi (MPI) orqali vaqtlararo (2017 va 2023-yillar ma'lumotlari asosida) tahlil qilish orqali Buyuk Britaniya, Janubiy Koreya, BAA, Singapur davlatlari iqtisodiyotini diversifikatsiya qilish bo'yicha ilmiy-amaliy takliflar ishlab chiqishdan iborat. Tadqiqotda aholi jon boshiga YaIM va patentlar soni kabi kirish faktorlarining kreativ eksport hajmi chiquvchi ko'rsatkichiga ta'siri asosida texnologiya va unumdorlik o'zgarishlari hisoblab chiqilgan.

*Tadqiqot maqsadi: Kreativ mahsulotlar eksportining dinamik unumdorligini **Malmquist indeksi (MPI)** orqali vaqtlararo tahlil qilish orqali Buyuk Britaniya, Janubiy Koreya, BAA, Singapur davlatlari iqtisodiyotini diversifikatsiya qilish bo'yicha ilmiy-amaliy takliflar ishlab chiqishdan iborat. (1-ilovadagi ma'lumotlar asosida bajarildi)*

Mos ravishda, har bir DMU uchun quyidagi vektorlar shakllantirildi:

$$x_t = (\text{GDP_PCA}_{2017}, \text{Patents}_{2017}), y_t = \text{Creative_export}_{2017}$$

$$x_{t+1} = (\text{GDP_PCA}_{2023}, \text{Patents}_{2023}), y_{t+1} = \text{Creative_export}_{2023}$$

$$M_0 = \sqrt{\frac{D_{2017}(x_{2023}, y_{2023})}{D_{2017}(x_{2017}, y_{2017})} \times \frac{D_{2023}(x_{2023}, y_{2023})}{D_{2023}(x_{2017}, y_{2017})}}$$

Bu yerda $D_{2017}(x_{2017}, y_{2017})$ va $D_{2023}(x_{2023}, y_{2023})$ kabi datalar 2017- va 2023- yillar

uchun DEA tahlili natijalari hisoblanadi. $D_{2017}(x_{2023}, y_{2023})$ va $D_{2023}(x_{2017}, y_{2017})$ esa kross-datalar sanaladi. Ya'ni 2023-yil texnologiya bo'lmaganda, 2017 yilda qanday natija ko'rsatish imkoniyati, yoki aksincha 2017 yil natijalar yangi texnologiya sharoitida qancha qiymatga ega bo'lishi hisoblab ko'riladi. 2- ilovada R yordamida hisoblangan oddiy DEA 2017 va 2023 yillar uchun qiymati va krossdatalar berilgan shunga ko'ra, Buyuk Britaniya uchun Malmquist samaradorlik indeksini hisoblab ko'ramiz:¹

$$M_0^{Uk} = \sqrt{\frac{1.2966394}{1.000000} \times \frac{1.027222}{0.7726614}} = 1,313$$

Huddi shu asnoda ma'lumotlar jadvalimiz uchun hisoblangan Malmquist indeksi natijalari quyidagi 1-jadvalda berildi.

Jadvaldan ko'rishimiz mumkinki, Janubiy Koreya uchun Malmquist indeksi 0,649 ni tashkil etgan. Ya'ni samaradorlik 2017 yilga nisbatan 35% ga pasaygan. Texnologiya 4,8% yaxshilangan bo'lsada, samaradorlik o'zgarishi 61,9% pasaygani hisobiga indeksda pasayish kuzatilgan. Ya'ni texnologiyada bo'lgan 4,8% lik o'zgarish samaradorlikdagi 61,9% pasayishni qoplay olmagan. Indeks bo'yicha Buyuk Britaniyada 31,3% oshish kuzatilgan. BAA da esa 90,8 yani qariyb 9% ga pasaygan. Bunda ham texnologik o'zgarish 6,6% bo'lsa ham, samaradorlikning 85,2% yomonlashuvini to'xtatib qola olmagan.

Singapur uchun bu ko'rsatkichlarni hisoblashning imkoni bo'lmadi, chunki ma'lumotlar jadvalini shakllantirishda rasmiy saytlardan olingan ma'lumotlar davlatlar uchun ayrim statistik ko'rsatkichlarning turlicha hisoblangani sabab, R dasturida bu davlat uchun aniq bir qiymat berilishi imkonsiz deya ko'rsatildi. 1- rasmda Malmquist samaradorlik indeksi natijalariga ko'ra DMU lar uchun grafik berilgan. Bunda faqat Buyuk Britaniyaning 1 dan katta qiymatga ega bo'lganligini

¹ Färe, R., Grosskopf, S., Lindgren, B., & Roos, P. (1992). Productivity changes in Swedish pharmacies 1980-1989: A non-parametric Malmquist approach. Journal of Productivity Analysis, 3(1-2), 85-101.



kuzatishimiz mumkin. Ushbu rasmdan ko'rish mumkinki, Buyuk Britaniyada Malmquist indeksi 1 dan oshgan xolos. Yaponiya, Misr, BAA va Shri Lanka davlatlari nisbatan 1 ga yaqinlashgan. Ya'ni pasayish kamroq kuzatilgan. Singapur uchun aniqlanmagan. Janubiy Koreya uchun esa pasayish 40% dan oshganini ko'rish mumkin.

1-jadval

Malmquist produktivlik indeksi natijalari: Kreativ eksport samaradorligining o'zgarishi (2017–2023)

Mamlakat	Samaradorlik_ozgarishi	Texnologik_ozgarish	Malmquist_indeksi
Uzbekistan	0.251	1.132	0.284
Kazakhstan	0.735	0.984	0.723
Kyrgyzstan	1.000	0.000	0.000
South Korea	0.619	1.048	0.649
Indonesia	1.000	NaN	NaN
Cambodia	1.000	NaN	NaN
Malaysia	0.798	0.983	0.784
Singapore	1.000	0.000	0.000
India	1.000	0.000	0.000
Pakistan	0.101	0.000	0.000
Philippines	0.528	0.964	0.508
Japan	0.893	1.053	0.940
Armenia	0.058	1.060	0.061
Jordan	0.174	1.338	0.233
Turkiye	0.685	0.935	0.640
UAE	0.852	1.066	0.908
UK	1.027	1.278	1.313
Sri Lanka	0.916	0.966	0.884
Morocco	0.876	0.964	0.844

Egypt

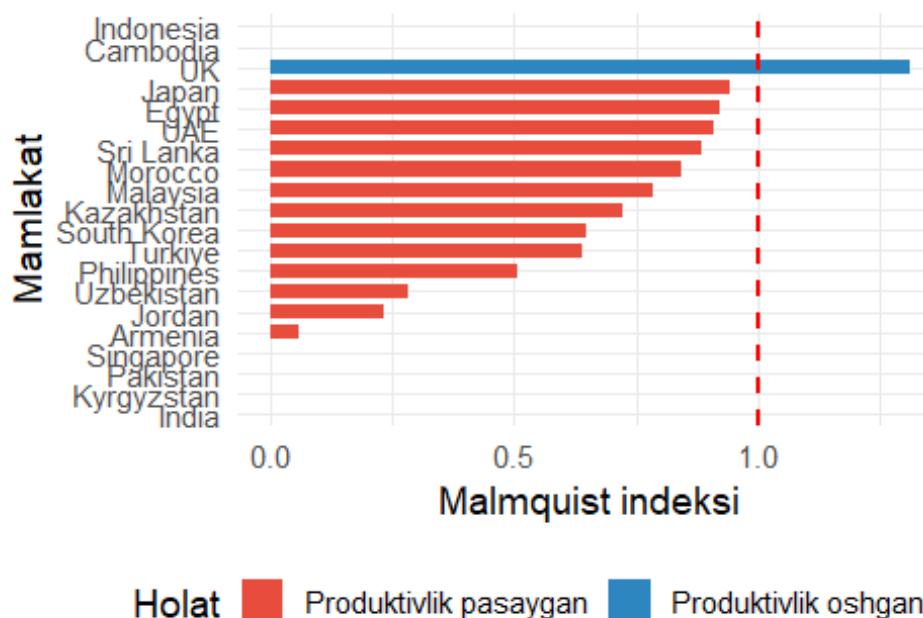
0.904

1.021

0.923

Mazkur tahlilimiz yordamida kreativ eksport samaradorligi yuqori bo'lgan mamlakatlarni ajratib oldik. Shuningdek, innovatsiya va patentlarning eksportga ta'siri va kreativ iqtisodiyotdagi texnologik rivojlanishni o'rganishimiz mumkin bo'ldi. Bu natijalar kreativ sanoatni rivojlantirish bo'yicha iqtisodiy siyosat ishlab chiqishda muhim ahamiyatga ega.

Bundan tashqari yana bir metod borki, undan ham foydalanilsa, tadqiqot yanada mukammal amalga oshirilgan bo'ladi. Bu SFA (Stochastic frontier analysis) tahlilidir. DEA usuli Malmquist indeksning asosida yotsa ham, joriy yil bo'yicha samaradorlik tahlilni aynan shu metod yordamida quriladi. Malmquist indeksida esa har bir yil uchun qurilgan DEA tahlillari solishtiriladi. Shu orqali texnologik va samaradorlik o'zgarishlari to'g'risida xulosa qilinadi. SFA esa stoxastik frontier quradi va samaradorlikni hisoblashda oq shovqin o'zgarishini baholaydi.



1-rasm. Kreativ eksport samaradorligidagi o'zgarishlar

Xulosa. Dunyoning yetakchi davlatlari kreativ eksport produktivligidagi o'zgarishlarni 2017 va 2023-yillar kesimida Malmquist indeksi yordamida tahlil qilish orqali quyidagi xulosalarga kelindi:



- Tadqiqot etilgan mamlakatlar orasida faqatgina Buyuk Britaniyada Malmquist indeksi 1 dan yuqori (1,313) qiymatni qayd etgan bo'lib, unumdorlikning 31,3% ga oshishi kuzatildi.
- Janubiy Koreya iqtisodiyotida 4,8% lik texnologik yaxshilanish bo'lishiga qaramay, samaradorlik o'zgarishida 61,9% lik pasayish yuz bergan; oqibatda ushbu davlat uchun Malmquist indeksi 0,649 ni tashkil etib, samaradorlik jami 35% ga pasaygani ma'lum bo'ldi.
- Xuddi shunday tendensiya BAAda ham kuzatilib, texnologik o'zgarish 6,6% ni tashkil etgan bo'lsa-da, samaradorlik 85,2% ga yomonlashgan va yakuniy indeks qariyb 9% ga pasaygan (0,908).
- Yaponiya (0,940), Misr (0,923), BAA (0,908) va Shri Lanka (0,884) kabi davlatlarning ko'rsatkichlari nisbatan 1 ga yaqinlashgan bo'lib, ularda pasayish sur'ati kamroq ekanligi kuzatildi.
- Singapur uchun rasmiy saytlardan olingan ma'lumotlar ayrim statistik ko'rsatkichlarning turlicha hisoblangani sababli, R dasturida ushbu davlat uchun aniq bir indeks qiymatini hisoblashning imkoni bo'lmadi.
- Mazkur DEA modeliga asoslangan Malmquist tahlili texnologik va samaradorlik o'zgarishlarini yaxshi ochib bersa-da, kelgusida tadqiqotni yanada mukammal qilish uchun stoxastik frontier quradigan va oq shovqin o'zgarishini baholaydigan SFA (Stochastic frontier analysis) tahlilidan foydalanish amaliy ahamiyatga ega bo'ladi.

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1-ilova

Malmquist samaradorlik indeksini hisoblash uchun davlatlar bo'yicha kreativ eksport, aholi jon boshiga YAIM miqdori va patentlar bo'yicha ma'lumotlar jadvali²

<i>Economy</i>	<i>year</i>	<i>Creative_export³</i>	<i>GDP_PCA⁴</i>	<i>Patents_by origin⁵</i>
<i>Uzbekistan</i>	2017	117	2191	357
<i>Uzbekistan</i>	2018	138	1813	470
<i>Uzbekistan</i>	2019	229	2041	374
<i>Uzbekistan</i>	2020	201	1978	356
<i>Uzbekistan</i>	2021	277	2259	413
<i>Uzbekistan</i>	2022	405	2579	458
<i>Uzbekistan</i>	2023	485	2879	518
<i>Kazakhstan</i>	2017	64	8943	1140
<i>Kazakhstan</i>	2018	85	9472	887
<i>Kazakhstan</i>	2019	111	9457	780
<i>Kazakhstan</i>	2020	68	8782	780

² Ma'lumotlar rasmiy manbalar asosida 2026-yil 15 -yanvar holatiga ko'ra muallif tomonidan shakllantirildi.

³ <https://unctadstat.unctad.org/datacentre/dataviewer/US.CreativeGoodsValue>

⁴ <https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?end=2024&start=2024&view=map&year=2023>

⁵ <https://www.wipo.int/gii-ranking/en/indicators/611>



<i>Kazakhstan</i>	2021	40	9984	781
<i>Kazakhstan</i>	2022	46	11255	782
<i>Kazakhstan</i>	2023	89	12879	781
<i>Kyrgyzstan</i>	2017	7	1221	140
<i>Kyrgyzstan</i>	2018	17	1284	100
<i>Kyrgyzstan</i>	2019	17	1422	80
<i>Kyrgyzstan</i>	2020	11	1230	70
<i>Kyrgyzstan</i>	2021	9	1350	86
<i>Kyrgyzstan</i>	2022	122	1740	75
<i>Kyrgyzstan</i>	2023	48	2138	75
<i>South Korea</i>	2017	6451	33297	159
<i>South Korea</i>	2018	6862	35364	162
<i>South Korea</i>	2019	9069	33827	171
<i>South Korea</i>	2020	14063	33646	180
<i>South Korea</i>	2021	17861	37518	186
<i>South Korea</i>	2022	18238	34822	184
<i>South Korea</i>	2023	9964	35674	191
<i>Indonesia</i>	2017	5648	3799	2
<i>Indonesia</i>	2018	5246	3861	1
<i>Indonesia</i>	2019	5393	4107	3
<i>Indonesia</i>	2020	4724	3854	1
<i>Indonesia</i>	2021	6944	4287	1
<i>Indonesia</i>	2022	8503	4731	2
<i>Indonesia</i>	2023	9505	4876	2
<i>Cambodia</i>	2017	180	1826	3
<i>Cambodia</i>	2018	412	2037	1
<i>Cambodia</i>	2019	1089	2226	1



<i>Cambodia</i>	2020	1291	2082	1
<i>Cambodia</i>	2021	1858	2167	0
<i>Cambodia</i>	2022	2202	2325	2
<i>Cambodia</i>	2023	2112	2430	2
<i>Malaysia</i>	2017	7706	9863	1170
<i>Malaysia</i>	2018	8598	10902	1120
<i>Malaysia</i>	2019	8624	10920	1070
<i>Malaysia</i>	2020	9783	9958	989
<i>Malaysia</i>	2021	11171	10903	883
<i>Malaysia</i>	2022	12459	11755	820
<i>Malaysia</i>	2023	9845	11386	843
<i>Singapore</i>	2017	10658	61236	2
<i>Singapore</i>	2018	11039	66882	2
<i>Singapore</i>	2019	10043	65952	2
<i>Singapore</i>	2020	9434	61410	2
<i>Singapore</i>	2021	10716	80056	2
<i>Singapore</i>	2022	11783	90299	2
<i>Singapore</i>	2023	12374	85412	2
<i>India</i>	2017	19766	1950	15
<i>India</i>	2018	19709	1966	16
<i>India</i>	2019	21273	2041	19
<i>India</i>	2020	13876	1907	23
<i>India</i>	2021	18909	2240	26
<i>India</i>	2022	21028	2347	39
<i>India</i>	2023	20595	2530	49
<i>Pakistan</i>	2017	817	1519	193
<i>Pakistan</i>	2018	700	1569	306



<i>Pakistan</i>	2019	708	1390	313
<i>Pakistan</i>	2020	715	1278	338
<i>Pakistan</i>	2021	861	1455	426
<i>Pakistan</i>	2022	928	1538	371
<i>Pakistan</i>	2023	829	1360	459
<i>Philippines</i>	2017	999	3038	323
<i>Philippines</i>	2018	989	3169	529
<i>Philippines</i>	2019	1135	3401	501
<i>Philippines</i>	2020	856	3228	476
<i>Philippines</i>	2021	1167	3484	490
<i>Philippines</i>	2022	1661	3548	533
<i>Philippines</i>	2023	1967	3804	786
<i>Japan</i>	2017	8061	38834	260
<i>Japan</i>	2018	8863	39751	253
<i>Japan</i>	2019	8061	40416	245
<i>Japan</i>	2020	7546	40029	227
<i>Japan</i>	2021	8969	40095	222
<i>Japan</i>	2022	8320	34066	219
<i>Japan</i>	2023	8516	33836	229
<i>Armenia</i>	2017	37	3869	110
<i>Armenia</i>	2018	58	4196	103
<i>Armenia</i>	2019	56	4597	117
<i>Armenia</i>	2020	38	4269	65
<i>Armenia</i>	2021	86	4685	42
<i>Armenia</i>	2022	153	6572	21
<i>Armenia</i>	2023	555	8159	25
<i>Jordan</i>	2017	222	4066	26



<i>Jordan</i>	2018	178	4145	24
<i>Jordan</i>	2019	114	4170	21
<i>Jordan</i>	2020	117	4022	38
<i>Jordan</i>	2021	266	4183	24
<i>Jordan</i>	2022	773	4332	25
<i>Jordan</i>	2023	917	4466	21
<i>Turkiye</i>	2017	9602	10756	9
<i>Turkiye</i>	2018	10142	9684	8
<i>Turkiye</i>	2019	11270	9395	8
<i>Turkiye</i>	2020	9628	8798	9
<i>Turkiye</i>	2021	14635	9982	9
<i>Turkiye</i>	2022	15927	10898	9
<i>Turkiye</i>	2023	15811	13375	9
<i>UAE</i>	2017	17531	43734	96
<i>UAE</i>	2018	19240	47135	92
<i>UAE</i>	2019	20171	45939	96
<i>UAE</i>	2020	9374	37992	71
<i>UAE</i>	2021	13918	44119	69
<i>UAE</i>	2022	17376	50760	112
<i>UAE</i>	2023	19302	49851	273
<i>UK</i>	2017	21953	40917	19
<i>UK</i>	2018	22744	43703	19
<i>UK</i>	2019	29247	43159	18
<i>UK</i>	2020	15610	49813	18
<i>UK</i>	2021	15959	47691	17
<i>UK</i>	2022	17395	47057	17
<i>UK</i>	2023	16370	49944	17



<i>Sri Lanka</i>	2017	231	4399	277
<i>Sri Lanka</i>	2018	232	4359	343
<i>Sri Lanka</i>	2019	236	4082	356
<i>Sri Lanka</i>	2020	191	3848	353
<i>Sri Lanka</i>	2021	288	3997	266
<i>Sri Lanka</i>	2022	302	3343	171
<i>Sri Lanka</i>	2023	261	3799	185
<i>Morocco</i>	2017	232	3297	198
<i>Morocco</i>	2018	247	3502	187
<i>Morocco</i>	2019	229	3508	199
<i>Morocco</i>	2020	174	3268	250
<i>Morocco</i>	2021	223	3786	243
<i>Morocco</i>	2022	255	3463	246
<i>Morocco</i>	2023	275	3814	301
<i>Egypt</i>	2017	868	2395	1020
<i>Egypt</i>	2018	846	2485	997
<i>Egypt</i>	2019	768	2963	1030
<i>Egypt</i>	2020	871	3511	978
<i>Egypt</i>	2021	1080	3827	881
<i>Egypt</i>	2022	917	4233	589
<i>Egypt</i>	2023	999	3457	695

2-ilova

Davlat kreativ eksporti samaradorligini hisoblash uchun 2017 va 2023 yillar uchun oddiy DEA va kross-datalar qiymati bo'yicha R da hisoblangan natijalar

```
result <- data.frame(  
  DMU = data2017$economy,  
  Dt_xt = eff_t,
```

```

Dt1_xt1 = eff_t1,
Dt_xt1 = cross_2017,
Dt1_xt = cross_2023
)
result
##      DMU   Dt_xt  Dt1_xt1   Dt_xt1   Dt1_xt
## 1  Uzbekistan 169.055588 42.463918 40.8621399 127.0191464
## 2  Kazakhstan 314.976219 231.404494 228.9818394 321.7968750
## 3  Kyrgyzstan  1.000000  1.000000 412.0114873   -Inf
## 4  South Korea  3.336743  2.066941  2.1736993  3.1925283
## 5  Indonesia  1.000000  1.000000   -Inf  1.1373896
## 6  Cambodia  1.000000  1.000000   -Inf   -Inf
## 7  Malaysia  2.622646  2.091925  2.0615124  2.6725928
## 8  Singapore  1.000000  1.000000  0.8618735   -Inf
## 9   India  1.000000  1.000000  0.9613281   -Inf
## 10 Pakistan  9.894819  1.000000  4.5530652   -Inf
## 11 Philippines 19.846910 10.470259 10.1017055 20.6156156
## 12   Japan  2.708857  2.418389  2.5311864  2.5548939
## 13  Armenia 537.127101 31.132297 36.2423000 556.6216216
## 14   Jordan 89.570988 15.627476 21.7090611 69.4936352
## 15  Turkiye  1.460182  1.000000  0.9012216  1.5067381
## 16   UAE  1.252239  1.066988  1.1373433  1.1747761
## 17   UK  1.000000  1.027222  1.2966394  0.7726614
## 18  Sri Lanka 86.162116 78.908046 76.1294025 89.1558442
## 19  Morocco 85.524136 74.890909 72.2567851 88.7715517
## 20   Egypt 22.800663 20.615616 19.8704499 21.0994328

```

**CLINICAL AND FUNCTIONAL ASPECTS AND IMPROVEMENT
OF THE TREATMENT OF PERENNIAL POLYPOUS
RHINOSINUSITIS IN CHILDREN**

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Abstract

The aggressive tissue remodeling defining perennial polypous rhinosinusitis inflicts severe functional degradation upon the pediatric respiratory tract. This study systematically quantifies biophysical deficits and validates a mucosa-sparing therapeutic protocol designed to circumvent surgical intervention. A prospective, randomized clinical trial monitored 186 children (aged 7-15) with bilateral nasal polyposis utilizing Lund-Kennedy Endoscopic Scoring, acoustic rhinometry, and olfactometry. Empirical data proves traditional low-volume intranasal corticosteroid sprays fail to penetrate the middle meatus, permitting continuous polypoid expansion. Integrating a top-down medical rehabilitation regimen—high-volume transnasal budesonide lavages combined with 12 weeks of systemic low-dose macrolides—yielded profound recovery. Statistical modeling indicates the optimized protocol expanded the minimum cross-sectional area (MCA) of the nasal valve by 188% from baseline, restoring olfactory threshold scores to a near-physiological norm of 31.4 $\pm$ 2.2 points ($p < 0.001$). Transitioning to active hydrostatic mucosal regeneration establishes a paradigm shift in pediatric otorhinolaryngology, offering non-invasive clinical algorithms to prevent irreversible craniofacial maldevelopment.

Keywords

Perennial polypous rhinosinusitis, pediatric otorhinolaryngology, acoustic rhinometry, mucosal remodeling, olfactory dysfunction, functional endoscopic evaluation, immunomodulation.

Introduction

The pediatric sinonasal corridor dictates the trajectory of early craniofacial development. When afflicted by perennial polypous rhinosinusitis, this architecture endures relentless inflammatory destruction. Chronic exposure to perennial antigens triggers an intense localized cascade, driving massive subepithelial accumulation of eosinophils, neutrophils, and pro-inflammatory cytokines (IL-4, IL-5, IL-13). This sustains a pathological environment characterized by extreme stromal edema, epithelial desquamation, and bilateral polypoid masses entirely obliterating the middle meatus.

Consequently, afflicted children suffer unremitting nasal obstruction, profound anosmia, and severely compromised sleep architecture. Left unmanaged, continuous mechanical pressure from expanding polyps induces irreversible skeletal deformities. Classical pharmacological interventions exhibit massive failure rates in children. Standard synthetic intranasal corticosteroid sprays merely coat the anterior polyp surface, completely failing to penetrate the obstructed osteomeatal complex. This biophysical failure perpetually pushes otolaryngologists toward premature functional endoscopic sinus surgery, a procedure carrying immense long-term risks of synechiae and disrupted facial bone growth.

The primary objective of this investigation is to rigorously quantify functional mucosal deficits in pediatric polyposis and construct a modernized, non-invasive therapeutic protocol. By statistically evaluating the regenerative capacity of a combined high-volume hydrostatic corticosteroid delivery system and systemic immunomodulation against conventional monotherapy, this study provides a definitive, empirically verifiable blueprint for reversing severe pediatric polyposis conservatively.

Materials and Methods

To capture the biophysical variables governing mucosal repair, this prospective, randomized, parallel-group clinical trial aggregated comprehensive anatomical data from 186 pediatric patients (aged 7-15) formally diagnosed with moderate-to-severe perennial polypous rhinosinusitis at the Andijan State Medical Institute over 24 months. Inclusion mandated a minimum 12-month history of bilateral polyposis and a baseline Lund-Mackay CT score ≥ 12 . Patients with cystic fibrosis, primary ciliary dyskinesia, antrochoanal polyps, or acute purulent complications were excluded.

The cohort was randomized into two equal arms. The Control Group (N = 93) received the standard institutional protocol: mometasone furoate aqueous nasal spray (100 micrograms/nostril twice daily) alongside oral antihistamines. The Experimental Group (N = 93) received an optimized non-surgical protocol: a high-volume, low-pressure transnasal irrigation delivering 0.5 mg of liquid budesonide suspension dissolved in 240 mL of isotonic saline twice daily. This hydrostatic delivery was seamlessly integrated with a 12-week course of low-dose oral clarithromycin (5 mg/kg daily), utilized strictly for its profound immunomodulatory properties. Primary endpoints were evaluated at 24 weeks.

Clinical efficacy was quantified utilizing Lund-Kennedy Endoscopic Scoring (LKES), acoustic rhinometry for Minimum Cross-Sectional Area (MCA in cm²), and the Sniffin' Sticks (TDI) test for olfactory function. Quantitative processing utilized SPSS (v.28.0) applying repeated-measures ANOVA and Student's t-tests ($p < 0.05$).

Results

Computational processing of clinical registries exposes a profound discrepancy between standard symptom management and active hydrostatic tissue remodeling. Baseline evaluations confirmed exceptional cohort homogeneity: initial LKES registered at 8.4 ± 1.2 (Control) and 8.6 ± 1.1 (Experimental), indicating massive bilateral obstruction. Baseline MCA stood at a critically constricted 0.18 ± 0.04 cm², while baseline TDI scores averaged a severely hyposmic 16.5 ± 2.3 out of 48.

Following the 24-week macrocycle, quantitative divergence became starkly evident across all parameters:

Direct tissue regression metrics demonstrated minimal structural change in the Control Group, with LKES dropping only to 6.2 ± 1.4 . This confirms low-volume sprays fundamentally fail to reach the middle meatus. Conversely, the Experimental Group exhibited a massive collapse in polypoid tissue, dropping to 2.1 ± 0.8 points ($p < 0.001$). The high-volume saline acted as a physical wedge, forcing the corticosteroid deep into the ethmoid infundibulum.

Aerodynamic architecture assessments via acoustic rhinometry revealed standard monotherapy increased MCA to only 0.24 ± 0.05 cm². The regenerative protocol restored massive aerodynamic flow, expanding MCA to a highly functional 0.52 ± 0.07 cm² ($p < 0.01$). This 188% volumetric expansion mathematically proves the absolute resolution of physical obstruction, terminating chronic mouth breathing.

Tracking olfactory regeneration, the Control Group's TDI score remained abnormally low at 21.4 ± 2.5 points. The Experimental Group recorded robust sensory recovery, achieving a TDI score of 31.4 ± 2.2 points, signifying complete functional restoration of the olfactory neuro-epithelium. Statistically, pediatric patients receiving the integrated protocol exhibit a 4.6-fold higher probability of avoiding endoscopic sinus surgery entirely.

Discussion

Evaluated through modern cellular immunology, the dramatic polyp regression in the Experimental Group aligns precisely with the pharmacodynamics of sub-antimicrobial macrolides and targeted topical steroids. Clarithromycin acts as an aggressive systemic catalyst for downregulating pro-inflammatory cytokine transcription within nasal fibroblasts. Halting the migration of eosinophils and neutrophils entirely neutralizes the biological engine driving polypoid expansion.

These clinical findings correlate strongly with 2024 European Rhinologic Society cohort analyses documenting a severe pharmacokinetic ceiling effect for standard pump sprays, where up to 85% of standard volume is immediately deposited anteriorly. The methodology deployed here mathematically circumvents this barrier. The massive 240 mL hydrostatic lavage physically displaces obstructing pathological mucus, actively forcing budesonide into the deepest recesses of the ethmoid cavities.

Traditional approaches utilizing generic topical sprays are clinically obsolete in chronic pediatric polyposis. Perennial polypous rhinosinusitis must be treated as a volumetric mechanical failure combined with deep tissue immunological dysregulation. While the 24-week observation captures acute mucosal healing, subsequent studies utilizing advanced non-invasive transcriptomic swabbing remain required to map the cellular mechanisms maintaining prolonged remission post-macrolide therapy.

Scientific Novelty and Practical Significance

This investigation achieves definitive scientific novelty by engineering the first mathematically verified, functional spatial mapping of the pediatric sinonasal cavity undergoing combined targeted hydrostatic and immunomodulatory therapy. The established statistical indices provide an immediate clinical blueprint for outpatient algorithms. Replacing standard low-volume steroid sprays with high-volume budesonide lavages and systemic immunomodulation allows specialists to exponentially amplify drug efficacy, restore innate olfaction, and definitively intercept the disease trajectory years before surgical excision becomes necessary.

Conclusion

Arresting the relentless tissue remodeling and aggressive obstruction inherent to pediatric perennial polypous rhinosinusitis demands a paradigm shift from ineffective low-volume topical monotherapies toward deep-tissue mucosal rehabilitation. Empirical data definitively establishes that severe polypoid degeneration is fully reversible when targeted hydrostatic corticosteroid delivery is integrated with systemic

immunomodulatory intervention. Managing an architecturally blocked nasal cavity purely through superficial chemical symptom suppression is biologically flawed; rigid execution of mechanical fluid displacement alongside targeted intracellular downregulation is the only viable therapeutic strategy.

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**THE ROLE OF SELF-ESTEEM LEVEL AND REFLECTION IN THE
CONSTRUCTIVE RESOLUTION OF CONFLICT SITUATIONS
AMONG YOUNG PEOPLE**

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Abstract

This article examines, from a scientific and theoretical perspective, the significance of the level of self-esteem and the process of reflection in the constructive resolution of conflict situations among young people. In contemporary society, various social, psychological, and interpersonal conflicts frequently arise in the lives of youth, and the effective resolution of such conflicts largely depends on the individual's internal psychological resources. In particular, a stable and adequate level of self-esteem helps young people correctly understand their own capabilities, maintain emotional stability, ensure balance in communication, and develop a rational attitude toward conflict situations. At the same time, well-developed reflection enables an individual to analyze their feelings, behavior, decisions, and communication process, recognize mistakes, understand the causes of conflict more deeply, and reach constructive solutions. The article discusses low, high, and adequate levels of self-esteem, as well as the cognitive, emotional, and behavioral aspects of reflection and their manifestations in conflict situations. In addition, the study substantiates the role of these psychological factors in developing constructive communication, self-regulation, empathy, compromise, and social adaptation among young people.

Keywords

youth, self-esteem, reflection, conflict situation, constructive resolution, interpersonal relations, psychological stability, emotional intelligence, communication culture, self-awareness, social adaptation.



**YOSHLAR O'RTASIDA KONFLIKTLARNI KONSTRUKTIV HAL ETISHDA
O'Z-O'ZINI BAHOLASH DARAJASI VA REFLEKSIYANING O'RNI**

Annotatsiya: Mazkur maqolada yoshlar o'rtasidagi konfliktli vaziyatlarni konstruktiv hal etishda o'z-o'zini baholash darajasi va refleksiya jarayonining ahamiyati ilmiy-nazariy jihatdan ko'rib chiqiladi. Zamonaviy jamiyatda yoshlar hayotida turli ijtimoiy, psixologik va shaxslararo mojarolar tez-tez uchrab turadi. Bunday ziddiyatlarni samarali bartaraf etish esa ko'p jihatdan shaxsning ichki psixologik resurslariga bog'liqdir. Xususan, o'z-o'zini baholashning barqaror va adekvat darajasi yoshlarga o'z imkoniyatlarini to'g'ri anglash, hissiy turg'unlikni saqlash, muloqotda muvozanatni ta'minlash hamda ziddiyatli vaziyatlarga oqilona yondashuvni shakllantirishga yordam beradi. Shu bilan birga, yaxshi rivojlangan refleksiya qobiliyati shaxsga o'z his-tuyg'ulari, xatti-harakati, qarorlari va muloqot jarayonini tahlil qilish, xatolarini tan olish, mojarolar sabablarini chuqurroq anglash hamda konstruktiv yechimga kelish imkonini beradi. Maqolada o'z-o'zini baholashning past, yuqori va adekvat darajalari, shuningdek, refleksiyaning kognitiv, emotsional va xulq-atvorga oid jihatlari hamda ularning ziddiyatli vaziyatlardagi namoyon bo'lish xususiyatlari muhokama qilinadi. Bundan tashqari, tadqiqotda ushbu psixologik omillarning yoshlarda konstruktiv muloqot, o'z-o'zini boshqarish, empatiya, murosaga kelish va ijtimoiy moslashuv ko'nikmalarini rivojlantirishdagi o'rni asoslab berilgan.

Kalit so'zlar: yoshlar, o'z-o'zini baholash, refleksiya, konfliktli vaziyat, konstruktiv yechim, shaxslararo munosabatlar, psixologik turg'unlik, emotsional intellekt, muloqot madaniyati, o'z-o'zini anglash, ijtimoiy moslashuv.

**УРОВЕНЬ САМООЦЕНКИ И РОЛЬ РЕФЛЕКСИИ В
КОНСТРУКТИВНОМ РАЗРЕШЕНИИ КОНФЛИКТОВ СРЕДИ МОЛОДЕЖИ**

Аннотация: В данной статье с научно-теоретической точки зрения рассматривается значение уровня самооценки и процесса рефлексии в конструктивном разрешении конфликтных ситуаций среди молодежи. В



современном обществе в жизни молодых людей часто возникают различные социальные, психологические и межличностные конфликты, и эффективное разрешение таких конфликтов во многом зависит от внутренних психологических ресурсов личности. В частности, стабильный и адекватный уровень самооценки помогает молодым людям правильно оценивать свои возможности, сохранять эмоциональную устойчивость, обеспечивать равновесие в общении и вырабатывать рациональное отношение к конфликтным ситуациям. В то же время хорошо развитая рефлексия позволяет человеку анализировать свои чувства, поведение, решения и процесс коммуникации, признавать ошибки, глубже понимать причины конфликтов и находить конструктивные решения. В статье обсуждаются низкий, высокий и адекватный уровни самооценки, а также когнитивные, эмоциональные и поведенческие аспекты рефлексии и их проявление в конфликтных ситуациях. Кроме того, в исследовании обосновывается роль этих психологических факторов в развитии у молодежи конструктивной коммуникации, саморегуляции, эмпатии, способности к компромиссу и социальной адаптации.

Ключевые слова: *молодежь, самооценка, рефлексия, конфликтная ситуация, конструктивное решение, межличностные отношения, психологическая устойчивость, эмоциональный интеллект, культура общения, самосознание, социальная адаптация.*

INTRODUCTION

Young people represent a decisive social force in the development of society. The intellectual potential, spiritual maturity, social activity, and psychological stability of the younger generation determine not only their personal future but also the future progress of society as a whole. Therefore, it is highly important to study the factors influencing the formation of youth as individuals, especially the psychological mechanisms that affect how they perceive and resolve conflicts arising in interpersonal



relationships. In the context of globalization and rapid informatization, young people today live under the influence of various social environments, viewpoints, values, and expectations. Family, educational institutions, peer groups, mass media, the internet, and social platforms directly affect the worldview of young people, their self-awareness, and their style of interaction with others. As a result, different clashes of opinions, contradictions of interests, misunderstandings, competition, and emotional tension often give rise to conflict situations. Conflict is a natural phenomenon of social life and appears in almost every sphere of human activity, especially during youth. This is because, during this period, an individual begins to understand their own “self,” strives to express independent opinions, seeks to defend their position, and has a strong need to be recognized by others. There are various factors that can lead to conflicts among young people: emotional instability, lack of life experience, inability to express one’s thoughts properly, unwillingness to accept the viewpoints of others, excessively low or excessively high self-esteem, internal contradictions, anxiety, jealousy, competition, and underdeveloped communication skills. In such situations, the way a conflict is resolved largely depends on the person’s psychological readiness, level of self-awareness, and internal self-regulation mechanisms. One of the most important factors influencing a person’s attitude toward conflict situations and their way of resolving them is self-esteem. Self-esteem refers to an individual’s system of perceptions about their own abilities, qualities, shortcomings, social status, and personal value. It determines a person’s attitude toward themselves, confidence in their own abilities, approach to success and failure, activity in communication with others, and inner stability. If a young person has an adequately formed level of self-esteem, they are able to remain calm in conflict situations, defend their point of view respectfully, listen to others, and direct the problem toward a solution. Conversely, low or inadequately inflated self-esteem may intensify conflict and lead to aggression, resentment, insecurity, or inflexibility. Another significant factor in the constructive resolution of conflict situations is reflection.



Reflection refers to a person's ability to analyze, understand, and evaluate their own thoughts, feelings, actions, relationships, and behavior. Through reflection, an individual becomes aware of their role in a conflict, recognizes their mistakes, understands their strengths and weaknesses, comprehends the condition of the opposing side, and identifies the true causes of the problem. This, in turn, enables the individual to avoid impulsive decisions, analyze the situation deeply, distance themselves from purely emotional reactions, and choose an appropriate solution. In modern psychology, self-esteem and reflection are considered important indicators of personality development. Particularly during adolescence and youth, the formation of these two factors determines social adaptation, academic achievement, professional orientation, communication culture, and behavior in conflict situations. From this perspective, studying this issue has not only theoretical but also practical significance. Educational institutions, families, and communities all face the urgent task of ensuring the psychological stability of young people, developing a healthy culture of communication, and forming skills for resolving conflicts without violence or aggression. The purpose of this article is to reveal the essence of self-esteem and reflection among young people, to analyze their influence on the constructive resolution of conflict situations from a scientific and psychological perspective, and to substantiate approaches aimed at developing these qualities.

The psychological essence of self-esteem in youth

Self-esteem is an individual's evaluation of their own personality, abilities, opportunities, moral qualities, social position, and place in relationships with others. In psychology, it is considered one of the key components of the "self-concept." Self-esteem shapes the internal image of the self and influences a person's activity, aspirations, decision-making, communication with others, and resistance to stress. During youth, self-esteem develops particularly actively. At this stage, a person discovers their abilities, compares themselves with others, tries to define their place in



a group, and strives for independent thinking and decision-making. Questions such as “Who am I?”, “What are my capabilities?”, and “How do others perceive me?” become especially significant. The answers to these questions determine the content and level of self-esteem. Self-esteem is generally manifested in three forms: low, adequate, and inflated. Young people with low self-esteem usually lack confidence in their abilities, take criticism very personally, become excessively dependent on external evaluation, and either fail to defend themselves in problematic situations or, on the contrary, express their inner anxiety through aggression. In conflict situations, such individuals may avoid expressing their opinions, fail to defend their rights, or perceive even minor disagreements as personal threats. Inflated self-esteem, in contrast, is characterized by overestimating one’s own abilities, refusing to acknowledge mistakes, denying the opinions of others, showing intolerance toward criticism, and striving for dominance. In conflict situations, this may lead to inflexibility, belittling others, considering oneself always right, and constantly placing blame on the opposing side. Adequate self-esteem is expressed in a person’s realistic awareness of their strengths and weaknesses, respect for themselves, willingness to acknowledge shortcomings, readiness to work on self-improvement, and ability to accept external evaluations appropriately. Young people with adequate self-esteem can control excitement in conflict situations, perceive the problem not as a personal insult but as a social and psychological issue that needs to be resolved. It should be emphasized that self-esteem is not a fixed and unchanging structure. It is formed under the influence of family upbringing, educational environment, peer relationships, social experience, personal achievements and failures, moral support, cultural context, and the digital environment. If a young person is constantly criticized, humiliated, compared with others, or subjected to excessive pressure, unhealthy tendencies may emerge in their self-esteem. Conversely, trust, respect for their opinions, recognition of achievements, and constructive explanation of mistakes help to form healthy self-esteem.



The concept of reflection and its role in personality development

Reflection is the process through which an individual becomes aware of and analyzes their internal state, thoughts, feelings, behavior, goals, and relationships with others. It enables a person to look at themselves from an external perspective, evaluate the causes and consequences of their actions, and recognize the aspects that need change. Reflection is not only an element of thinking but also an important mechanism of self-education, self-regulation, and self-development. The development of reflection during youth plays a major role in personal maturation. At this stage, young people form their life position, values, goals, and system of social relations. Reflection helps them observe their own actions, understand how they affect others, identify and regulate their feelings, draw conclusions, and adjust future behavior. Reflection manifests itself in several dimensions. Cognitive reflection is associated with analyzing one's thinking processes and understanding the logical basis of decision-making. Emotional reflection involves recognizing one's feelings, understanding their causes, and learning to regulate them. Communicative reflection refers to a person's awareness of their words, tone, attitudes, influence, and how they are perceived by others during communication. All of these forms are directly relevant to the way young people behave in conflict situations. A developed capacity for reflection encourages young people to ask themselves questions such as: "Why did I respond in this way?", "Why did the other person become offended?", "Did my words intensify the conflict or help to reduce it?", and "Could I have acted differently in this situation?" Such internal analysis allows an individual to understand not only the external signs of a conflict but also its underlying causes. Conflict is a state of contradiction between two or more individuals, groups, or internal motives, involving clashes of interests, contradictions of values, or disagreements in relationships. Although conflict is often perceived as a negative phenomenon, it does not always carry a destructive meaning. If managed properly and resolved constructively, conflict can serve to clarify relationships, eliminate misunderstandings,



promote personal growth, and enrich social experience. Conflict situations among young people may appear in various forms: disagreements with parents in the family, misunderstandings with teachers or classmates in educational institutions, conflicts among friends related to trust, competition, and communication, disputes in social networks, and emotional tensions in personal relationships. The way a young person reacts in such situations is determined by their character traits, emotional stability, communication experience, level of self-esteem, and capacity for reflection. There are both destructive and constructive ways of resolving conflict. A destructive approach is characterized by blaming, insulting, threatening, denial, revenge, avoidance of communication, or the use of force. A constructive approach, by contrast, is based on understanding the problem, listening to one another, reducing emotional tension, mutual respect, compromise, cooperation, and balancing interests. The formation of a constructive style of conflict resolution largely depends on self-esteem and reflection. The way a young person evaluates themselves significantly determines how they enter into and exit from conflict situations. Young people with low self-esteem often perceive conflict as an internal threat. Under the influence of thoughts such as “I must have said something wrong,” “No one will understand me,” or “I cannot defend myself,” they may withdraw from communication, suppress their resentment, or suddenly display strong emotional reactions at unexpected moments. This deepens the conflict rather than resolving it. In such cases, the person is forced to struggle not with the problem itself but with their own fear and insecurity. Young people with excessively high self-esteem often consider themselves absolutely right in a conflict. They may ignore the opinions of the opposing side, strive to dominate the conversation, perceive compromise as weakness, and refuse to admit mistakes. Although such behavior may appear outwardly confident, it often intensifies tension, increases social distance, and reduces opportunities for cooperation. Young people with adequate self-esteem, on the other hand, are able to defend their own interests while also taking into account the rights and



viewpoints of others. They can accept criticism not as a personal attack but as part of communication. Such individuals are inclined to express their opinions with justification, listen to the opposing side, reconsider their own position when necessary, and evaluate the problem from the perspective of common interest. Therefore, adequate self-esteem creates an important basis for psychological stability, communication culture, and constructive solutions in conflict situations. Reflection serves as a unique internal mechanism of analysis in the process of conflict resolution. It allows a person not to remain limited to the external appearance of a conflict but to understand its inner causes. For example, during a conflict, a young person with reflective capacity does not focus solely on the mistakes of the opposing side but also analyzes their own attitude, style of speaking, emotional reactions, and decisions. This analysis is the first step toward a constructive solution. The first important function of reflection is emotional self-control. In a conflict situation, a person may experience anger, resentment, a sense of injustice, fear, or sadness. If these feelings are not recognized, they begin to control behavior. Reflection helps the individual understand: "I am angry right now," "I took these words personally," or "This situation touched a painful point for me." Such awareness helps pause immediate reaction and reconsider the situation more rationally. The second function of reflection is multidimensional analysis of the situation. In a conflict, each participant perceives events from their own point of view. A reflective person, however, is able to consider not only their own position but also the state, intentions, needs, and feelings of the opposing side. This strengthens empathy, shifts attention from blame to understanding, and creates a softer, more constructive style of communication. The third function of reflection is the development of the ability to recognize one's own mistakes and correct behavior. In conflict situations, some young people deny their mistakes in order to protect their position. However, a reflective individual can conclude: "I spoke too harshly," "I did not listen carefully," or "I judged the person rather than the problem." This, in turn, creates the basis for reducing tension,



apologizing, restoring relationships, and avoiding similar mistakes in the future. The fourth function of reflection is choosing a constructive strategy. In a conflict, a person usually chooses one of several paths: confrontation, withdrawal, compromise, adaptation, or cooperation. A young person with developed reflection is able to evaluate these options depending on the situation, make decisions based on logic rather than emotion, and take into account the long-term consequences of the conflict. This increases the likelihood of constructive resolution. Self-esteem and reflection are closely interconnected psychological phenomena. Through reflection, an individual analyzes their abilities, shortcomings, behavior, and relationships; as a result of this analysis, self-esteem is formed and adjusted. At the same time, the quality of self-esteem influences the nature of reflection. For example, a young person with very low self-esteem may use reflection mainly to search for their own faults and belittle themselves. Conversely, a person with inflated self-esteem may fail to notice their own mistakes and conduct one-sided analysis. Adequate self-esteem creates a favorable psychological basis for healthy reflection. Healthy reflection combined with adequate self-esteem strengthens personal growth, communication culture, and the ability of young people to resolve conflicts. Such individuals respect themselves while also recognizing the value of others, draw proper conclusions from criticism, understand their internal experiences, and regulate themselves effectively. As a result, in conflict situations they are more likely to choose thoughtful, responsible, and constructive approaches rather than impulsive emotional reactions.

Conclusion

The level of self-esteem and reflection among young people is one of the key psychological factors in the constructive resolution of conflict situations. While self-esteem determines an individual's perception of their own abilities, dignity, and social position, reflection enables them to analyze, understand, and adjust their thoughts, feelings, and behavior. Young people with adequate self-esteem and developed



reflection are more likely to resist emotional pressure in conflict situations, understand the essence of the problem, take into account the viewpoint of the opposing side, maintain communication, and reach acceptable solutions. By contrast, low or inadequately inflated self-esteem may lead to the escalation of conflict, aggression, discouragement, rigidity, or avoidance of communication. For this reason, the educational and upbringing process should focus on forming healthy self-esteem, developing reflection, and cultivating emotional self-regulation, empathy, communication culture, and peaceful conflict resolution skills among young people. This not only ensures the personal stability and social adaptation of youth but also contributes to strengthening a healthy atmosphere of relationships and tolerance in society.

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PEDAGOGICAL FOUNDATIONS FOR DEVELOPING INTEREST IN ROBOTICS AMONG PRESCHOOL CHILDREN

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Abstract

This article examines the pedagogical foundations for fostering interest in robotics in preschool children. In the modern educational process, robotics is considered one of the effective tools for developing children's intellectual potential, problem-solving, creative thinking, algorithmic thinking, and developing teamwork skills.

Keywords

preschool education, robotics, STEAM, pedagogical technologies, interest, algorithmic thinking, creativity, educational game.

MAKTABGACHA YOSHDAGI BOLALARDA ROBOTOTEXNIKAGA QIZIQISHNI SHAKLLANTIRISHNING PEDAGOGIK ASOSLARI

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Annotatsiya. Mazkur maqolada maktabgacha yoshdagi bolalarda robototexnikaga qiziqishni shakllantirishning pedagogik asoslari yoritilgan. Zamonaviy ta'lim jarayonida robototexnika bolalarning intellektual salohiyatini rivojlantirish, muammoli vaziyatlarni hal etish, ijodiy fikrlash, algoritmik tafakkur va jamoada ishlash ko'nikmalarini shakllantirishning samarali vositalaridan biri sifatida qaralmoqda.

Kalit so'zlar: maktabgacha ta'lim, robototexnika, STEAM, pedagogik texnologiyalar, qiziqish, algoritmik fikrlash, ijodkorlik, ta'limiy o'yin.

Аннотация. В данной статье раскрываются педагогические основы формирования интереса к робототехнике у дошкольников. В современном



образовательном процессе робототехника рассматривается как одно из эффективных средств развития интеллектуального потенциала детей, решения проблемных ситуаций, творческого мышления, алгоритмического мышления и формирования навыков работы в команде.

Ключевые слова: дошкольное образование, робототехника, STEAM, педагогические технологии, интерес, алгоритмическое мышление, творчество, образовательная игра.

So‘nggi yillarda dunyo ta’lim tizimida raqamli texnologiyalarni ta’lim jarayoniga keng joriy etish ustuvor yo‘nalishlardan biriga aylandi. Ayniqsa, maktabgacha ta’lim bosqichida bolalarning tabiiy qiziqishini qo‘llab-quvvatlash, ularning ijodiy va intellektual salohiyatini rivojlantirish hamda kelajak kasblariga tayyorlash maqsadida robototexnika elementlaridan foydalanishga alohida e’tibor qaratilmoqda. Robototexnika mashg‘ulotlari nafaqat texnik ko‘nikmalarni shakllantiradi, balki bolalarning mantiqiy fikrlashi, kuzatuvchanligi, tahlil qilish qobiliyati, muammolarni hal etish malakasi va jamoaviy hamkorlik kompetensiyalarini ham rivojlantiradi.

Maktabgacha yosh bolalikning eng muhim rivojlanish davri bo‘lib, aynan shu bosqichda bolaning bilishga bo‘lgan ehtiyoji va yangi faoliyat turlariga qiziqishi faol shakllanadi. Shu sababli robototexnikani maktabgacha ta’lim mazmuniga pedagogik jihatdan to‘g‘ri integratsiya qilish bolalarning kelgusidagi ta’lim faoliyatiga mustahkam zamin yaratadi.

Robototexnika mashg‘ulotlari an’anaviy o‘yin faoliyatini zamonaviy texnologiyalar bilan uyg‘unlashtiradi. Konstruktor detallari bilan ishlash, oddiy mexanizmlarni yig‘ish, harakatlanuvchi modellarni yaratish va ularni sinovdan o‘tkazish bolalarda tadqiqotchilik ruhini shakllantiradi. Bunday faoliyat davomida bola o‘zining bilimini amaliy faoliyat orqali boyitadi hamda yangi bilimlarni mustaqil egallashga intiladi.

Maktabgacha ta'limda robototexnikadan foydalanish bo'yicha olib borilgan ilmiy tadqiqotlar ushbu texnologiyaning bolalar rivojlanishiga kompleks ta'sir ko'rsatishini tasdiqlaydi. Zamonaviy pedagogik yondashuvlarda robototexnika STEAM ta'limining muhim tarkibiy qismi sifatida qaraladi. Mazkur yondashuv fan, texnologiya, muhandislik, san'at va matematikani yagona integratsiyalashgan ta'lim muhiti sifatida tashkil etishni nazarda tutadi.

Psixologik tadqiqotlarda ta'kidlanishicha, 5–7 yoshli bolalar predmetlar bilan amaliy faoliyat olib borish jarayonida yangi bilimlarni tezroq o'zlashtiradilar. Konstruktorlar va robototexnika to'plamlari bilan ishlash bolalarda fazoviy tasavvur, mantiqiy bog'lanishlarni aniqlash, sabab-oqibat munosabatlarini tushunish va ijodiy yechimlar topish ko'nikmalarini rivojlantiradi.

Shuningdek, ilmiy adabiyotlarda robototexnikaning bolalarda kommunikativ kompetensiyalarni rivojlantirishdagi o'rni ham alohida qayd etiladi. Guruh bo'lib bajariladigan loyihalar davomida bolalar fikr almashishni, o'zaro yordam berishni, mas'uliyatni bo'lishishni va umumiy maqsad sari hamkorlikda ishlashni o'rganadilar.

Pedagogik adabiyotlar tahlili shuni ko'rsatadiki, robototexnikaga qiziqishni shakllantirish uchun tarbiyachining innovatsion yondashuvi, zamonaviy didaktik vositalardan foydalanishi hamda rivojlantiruvchi ta'lim muhitini yaratishi muhim pedagogik shartlardan biri hisoblanadi.

Tahlillar shuni ko'rsatdiki, robototexnika mashg'ulotlari maktabgacha yoshdagi bolalarda bilishga bo'lgan ehtiyojni sezilarli darajada kuchaytiradi. An'anaviy mashg'ulotlarga nisbatan robototexnika elementlari bilan boyitilgan ta'lim faoliyati bolalarni faol ishtirok etishga undaydi, ularning mustaqil fikrlashiga va yangi g'oyalarni ilgari surishiga imkon yaratadi.

Robototexnika bilan shug'ullanish jarayonida bolalar konstruktor detallari bilan ishlash, modellarni yig'ish, ularning harakatini kuzatish va natijalarni tahlil qilish orqali amaliy tajriba orttiradilar. Ushbu faoliyat ularda kuzatuvchanlik, tafakkur



moslashuvchanligi va algoritmik fikrlashni shakllantiradi. Tadqiqot davomida robototexnikaga qiziqishni shakllantirishga ta'sir etuvchi asosiy pedagogik omillar quyidagilar ekanligi aniqlandi:

Birinchidan, rivojlantiruvchi ta'lim muhiti. Robototexnika jihozlari, konstruktor to'plamlari, interaktiv o'yin vositalari va STEAM markazlarining mavjudligi bolalarda tabiiy qiziqishni uyg'otadi.

Ikkinchidan, tarbiyachining kasbiy mahorati. Tarbiyachi faqat bilim beruvchi emas, balki tashkilotchi, yo'naltiruvchi va motivator sifatida faoliyat yuritishi zarur. Uning innovatsion pedagogik texnologiyalarni qo'llashi mashg'ulotlarning samaradorligini oshiradi.

Uchinchidan, o'yin texnologiyalaridan foydalanish. Maktabgacha yoshdagi bolalar uchun o'yin yetakchi faoliyat hisoblanadi. Robototexnika elementlarini syujetli-rolli o'yinlar, konstruktorlik faoliyati va muammoli vaziyatlar bilan uyg'unlashtirish qiziqishni yanada kuchaytiradi.

To'rtinchidan, ota-onalar bilan hamkorlik. Oilada robototexnikaga oid oddiy konstruktorlar bilan shug'ullanish, bolani qo'llab-quvvatlash va uning yutuqlarini rag'batlantirish ta'lim samaradorligini oshiradi.

Shuningdek, robototexnika mashg'ulotlari bolalarda quyidagi kompetensiyalarni rivojlantirishi kuzatildi: tanqidiy fikrlash, algoritmik tafakkur, ijodkorlik, kommunikativ kompetensiya, hamkorlikda ishlash, muammolarni hal qilish ko'nikmalari va texnologik savodxonlik.

Bugungi kunda robototexnika faqat texnik yo'nalish emas, balki maktabgacha ta'limning barcha rivojlantiruvchi sohalari bilan integratsiyalashgan pedagogik vosita sifatida qaralmoqda. Uni matematika, nutqni rivojlantirish, tasviriyl faoliyat, atrof-muhit bilan tanishtirish va konstruktorlik mashg'ulotlari bilan uyg'unlashtirish bolalarning har tomonlama rivojlanishiga xizmat qiladi. Natijalar shuni ko'rsatadiki, robototexnika elementlarini muntazam ravishda ta'lim jarayoniga kiritish bolalarning o'quv



motivatsiyasini oshiradi, ularni mustaqil izlanishga undaydi hamda zamonaviy texnologiyalarni ongli ravishda o'zlashtirishga tayyorlaydi.

Maktabgacha yoshdagi bolalarda robototexnikaga qiziqishni shakllantirish zamonaviy maktabgacha ta'limning ustuvor yo'nalishlaridan biri hisoblanadi. Robototexnika mashg'ulotlari bolalarning bilish faolligi, ijodiy va mantiqiy fikrlashi, kommunikativ kompetensiyasi hamda muammolarni hal qilish ko'nikmalarini rivojlantirishda muhim pedagogik vosita bo'lib xizmat qiladi. Robototexnikaga qiziqishni shakllantirishning samaradorligi rivojlantiruvchi ta'lim muhiti, tarbiyachining innovatsion faoliyati, STEAM texnologiyalaridan foydalanish, o'yin metodlari va ota-onalar bilan hamkorlikka bevosita bog'liq.

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Learning mathematics through the Brainstorming method

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Abstract

This work covers the theoretical and practical aspects of using the Brainstorming method in teaching mathematics. The importance of the Brainstorming method in developing students' creative, logical and independent thinking is revealed. It also explains the methods and advantages of using the method in mathematics lessons, as well as practical examples on the topics of equations, geometry and fractions. The possibilities of easy, fast and high-quality learning of mathematics using this method are shown.

Keywords

Brainstorming method, Brainstorming, interactive method, , creative thinking, logical thinking, independent thinking, innovative education, problem situation, educational effectiveness, mathematical competence, , creative approach.

Aqliy hujum (Brainstorming) metodi orqali matematika fanini o'rganish

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Annotatsiya: *Ushbu ishda matematika fanini o'qitishda aqliy hujum (Brainstorming) metodidan foydalanishning nazariy va amaliy jihatlari yoritilgan. Aqliy hujum metodining o'quvchilarning kreativ, mantiqiy va mustaqil fikrlashini rivojlantirishdagi ahamiyati ochib berilgan. Shuningdek, metodning matematika darslarida qo'llanish usullari, afzalliklari hamda tenglama, geometriya va kasrlar mavzulariga oid amaliy misollar orqali tushuntirilgan. Mazkur metod yordamida matematika fanini oson, tez va sifatli o'rganish imkoniyatlari ko'rsatib berilgan.*

Kalit so'zlar: *Aqliy hujum metodi, Brainstorming, interfaol metod, , kreativ fikrlash, mantiqiy tafakkur, mustaqil fikrlash, innovatsion ta'lim, muammoli vaziyat, ta'lim samaradorligi, matematik kompetensiya, , ijodiy yondashuv.*



Изучение математики методом мозгового штурма

Аннотация: В данной работе рассматриваются теоретические и практические аспекты использования метода мозгового штурма в преподавании математики. Раскрывается важность метода мозгового штурма в развитии творческого, логического и самостоятельного мышления учащихся. Также объясняются методы и преимущества использования метода на уроках математики, а также приводятся практические примеры по темам уравнений, геометрии и дробей. Показаны возможности легкого, быстрого и качественного изучения математики с использованием этого метода.

Ключевые слова: метод мозгового штурма, интерактивный метод, креативное мышление, логическое мышление, независимое мышление, инновационное образование, проблемная ситуация, эффективность образования, математическая компетентность, творческий подход.

Aqliy hujum (Brainstorming) metodi — bu o'quvchilarning erkin fikrlashi, yangi g'oyalar topishi va masalalarni turli usullar bilan yechishga o'rganishiga yordam beruvchi zamonaviy interfaol metoddir. Ushbu metod matematika fanini o'qitishda juda samarali hisoblanadi. Chunki matematika faqat formulalarni yodlash emas, balki fikrlash, tahlil qilish va muammoni hal qilish fanidir.

Aqliy hujum metodida o'qituvchi o'quvchilarga savol yoki muammo beradi. O'quvchilar esa shu muammo yuzasidan o'z fikrlarini erkin aytadilar. Eng muhimi- hech bir fikr noto'g'ri deb tanqid qilinmaydi. Shu sababli o'quvchilar qo'rqmasdan fikr bildiradilar va yangi g'oyalarni o'ylab topishga harakat qiladilar.

Aqliy hujum metodining asosiy maqsadi:

1. O'quvchilarning mustaqil fikrlashini rivojlantirish
2. Matematik tafakkurni kuchaytirish
3. Masalalarni turli usullar bilan yechishga o'rgatish
4. Kreativ yondashuvni shakllantirish



5. Matematikaga qiziqishni oshirishdan iborat

Aqliy hujum metodining ishlash jarayoni. Ushbu metod quyidagi bosqichlarda amalga oshiriladi:

1-bosqich. Muammo beriladi .O'qituvchi savol yoki masala orqali o'quvchilarni faolligini oshiradi.

2-bosqich. Fikrlar yig'iladi. O'quvchilar masalani qanday yechish mumkinligi haqida turli g'oyalarni aytadilar.

3-bosqich. Tahlil qilinadi. Bildirilgan fikrlar tahlil qilinadi va shu orqali masalaga qanday yondashuv asosida ishlash yo'lini topadi.

4-bosqich. Xulosa chiqariladi. Eng qulay va to'g'ri yechim tanlanadi.

Matematikada aqliy hujum metodidan foydalanish

1-misol: Tenglama yechish. O'qituvchi savol beradi:

“Quyidagi tenglamani nechta usul bilan yechish mumkin?”

$$2x + 6 = 14$$

O'quvchilar turli javoblarni aytadilar masalan :

1. Oddiy algebraik usul
2. Teskari amal yordamida
3. Grafik usulda

1-MISOL: TENGLAMA YECHISH

Savol: Quyidagi tenglamani nechta usul bilan yechish mumkin?

$2x + 6 = 14$

O'quvchilar turli javoblarni aytadilar:

1-USUL: ODDIY ALGEBRAIK USUL

Avval 6 ni o'ng tomonga o'tkazamiz:

$$\begin{array}{r} 2x + 6 = 14 \\ -6 \quad -6 \\ \hline 2x = 14 - 6 \\ 2x = 8 \end{array}$$

Endi ikkala tomonni 2 ga bo'lamiz:

$$\begin{array}{r} 2x = 8 \\ \div 2 \\ \hline x = 4 \end{array}$$

Javob: $x = 4$

2-USUL: TESKARI AMAL YORDAMIDA

Bu usulda amalning teskari ishlantiriladi.

1 +6 ning teskari -6
2 $\times$ 2 ning teskari $\div$ 2

14 dan 6 ni aytramiz:

$$14 - 6 = 8$$

8 ni 2 ga bo'lamiz:

$$8 : 2 = 4$$

Javob: $x = 4$

3-USUL: GRAFIK USULDA

Tenglamaning chap va o'ng tomoni alohida funksiya sifatida olinadi.

Chap tomon: $y = 2x + 6$
O'ng tomon: $y = 14$

Ikki chiziq (4; 14) nuqtada kesishadi.
Demak, $x = 4$

Javob: $x = 4$

Xulosa: Tenglama uch xil usulda yechildi va javob bir xil bo'ldi.

Bu metod orqali o'quvchilar:

- ✓ bir masalani turli usulda yechishni o'rganadilar;
- ✓ mantiqiy va mustaqil fikrlash rivojlanadi;
- ✓ matematikaga qiziqish ortadi.

Yakuniy javob: $x = 4$



2-misol: To'g'ri to'rtburchak yuzasi

Savol: "To'g'ri to'rtburchak yuzasini qanday topamiz?"

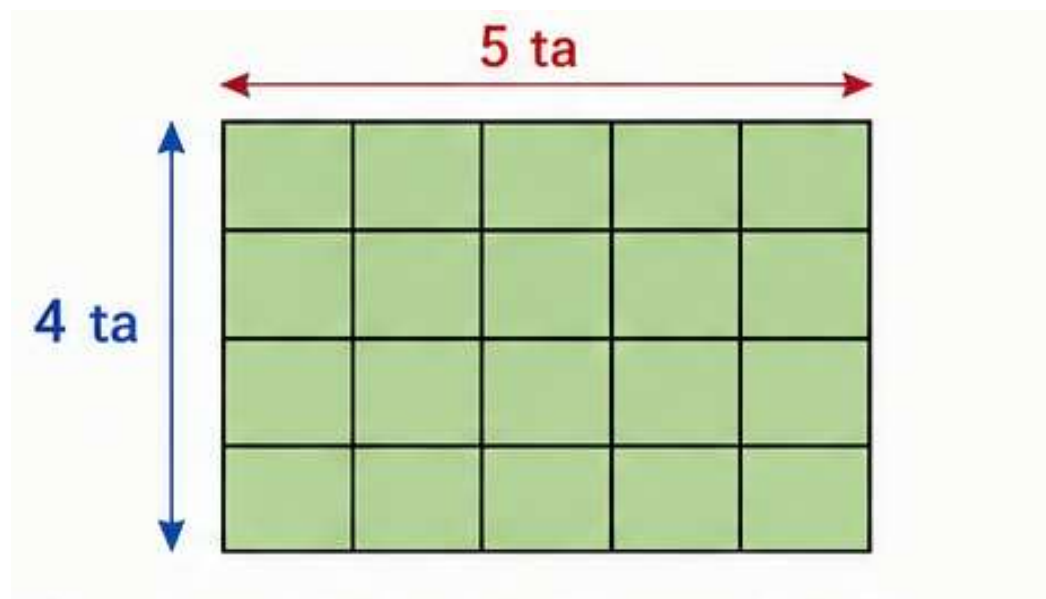
O'quvchilar:

1. Formula orqali
2. Katakli qog'oz yordamida sanash usuli orqali javob beradilar.

Formula orqali to'g'ri to'rtburchak yuzasini topish formulasi: $S = a \cdot b$. Bu yerda a – uzunlik (sm), b – kenglik (sm)

Masalan: $a = 5, b = 4$. $S = 5 \cdot 4 = 20 (sm^2)$. Demak ,to'g'ri to'rtburchak yuzasi $20 sm^2$ ga teng.

Katakli qog'oz yordamida to'g'ri to'rtburchakni chizib olamiz.



Uzunligi 5 ta katak, kengligi 4 ta katak. Barcha kataklarni sanaymiz $5 \cdot 4 = 20(katak)$, demak yuzasi $20 sm^2$ ga teng.

3-misol: Kasrlarni qo'shish

Savol: "Kasrlarni qo'shishning qanday usullari mavjud?" $\frac{1}{2} + \frac{1}{4} = ?$

O'quvchilar:

1. Umumiy maxrajga keltirish
2. Rasm yordamida



3. Ulushlarga bo'lish orqali javob beradilar.

Shu orqali o'quvchilar kasrlarni qo'shish mohiyatini tushunib oladilar.

3-MISOL: KASRLARNI QO'SHISH

Savol: Kasrlarni qo'shishning qanday usullari mavjud? $\frac{1}{2} + \frac{1}{4}$

O'quvchilar turli usullarni taklif qiladilar:

1 Umumiy maxrajga keltirish

2 Rasm yordamida

3 Ulushlarga bo'lish orqali

1. Umumiy maxrajga keltirish usuli

Qadamlar:

- Kasrlarning maxrajlari tenglashtiramiz.
- $\frac{1}{2}$ ni 4 ga keltiramiz.
- Kasrlarni qo'shamiz.

Yechish:

$$\frac{1}{2} = \frac{2}{4}$$

$$\frac{1}{2} + \frac{1}{4} = \frac{2}{4} + \frac{1}{4} = \frac{3}{4}$$

Natija: $\frac{3}{4}$

2. Rasm yordamida usuli

- $\frac{1}{2}$ ni rasmda bo'yaymiz.
- $\frac{1}{4}$ ni rasmda bo'yaymiz.
- Bo'yalgan qismlarni birlashtiramiz.

Natija: $\frac{3}{4}$

3. Ulushlarga bo'lish usuli

- Butunni 4 ta teng qismga bo'lamiz.
- $\frac{1}{2} = 2$ ta $\frac{1}{4}$
- $\frac{1}{4} = 1$ ta $\frac{1}{4}$
- Jami ulushlar: 2 ta $+ 1$ ta $= 3$ ta $\frac{1}{4} = \frac{3}{4}$

Natija: $\frac{3}{4}$

Xulosa: Kasrlarni qo'shishda turli usullar mavjud. Lekin barchasi bir xil natijaga olib keladi.

Yechish yakuni: $\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$

Natija: $\frac{3}{4}$

Aqliy hujum metodining afzalliklari

1. O'quvchilarning kreativ fikrlashini rivojlantiradi
2. Darsni qiziqarli qiladi
3. O'quvchilarni faol ishtirok etishga undaydi
4. Muammolarni tez va oson yechishga yordam beradi
5. O'ziga ishonchni oshiradi.

Matematikani oson va sifatli o'rganishda aqliy hujum metodining o'rni. Aqliy hujum metodidan foydalanilganda o'quvchilar: formulalarni tushunib o'rganadilar, masalalarni bir nechta usul bilan yechadilar, mustaqil fikrlashga o'rganadilar, matematikaga qiziqishlari ortadi. Natijada matematika darslari oddiy yodlash emas, balki fikrlash va izlanish jarayoniga aylanadi.

Xulosa: Aqliy hujum (Brainstorming) metodi matematika fanini oson, tez va sifatli o'rganishga yordam beruvchi samarali interfaol metodlardan biridir. Ushbu metod orqali o'quvchilar mustaqil va kreativ fikrlashga, matematik muammolarni turli usullar bilan yechishga hamda mantiqiy xulosa chiqarishga o'rganadilar. Matematika darslarida aqliy



hujum metodidan foydalanish dars samaradorligini oshiradi va o'quvchilarning fanga bo'lgan qiziqishini kuchaytiradi.

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Mathematical Modeling: Methods of Representing Real Processes

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Abstract: This article describes the essence of mathematical modeling, its scientific and practical significance, and the ways of representing real processes through mathematical methods. By means of mathematical models, the possibilities of analyzing, forecasting, and managing natural, technical, economic, and social processes are considered. In addition, information is provided about the stages and main methods of mathematical modeling.

Keywords: mathematical modeling, mathematical model, real process, function, differential equation, optimization, modeling methods.

Matematik modellashtirish: real jarayonlarni ifodalash usullari

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Annotatsiya: Ushbu maqolada matematik modellashtirishning mazmuni, uning ilmiy va amaliy ahamiyati hamda real jarayonlarni matematik usullar orqali ifodalash yo'llari yoritilgan. Matematik modellar yordamida tabiat, texnika, iqtisodiyot va ijtimoiy jarayonlarni tahlil qilish, bashoratlash hamda boshqarish imkoniyatlari ko'rib chiqiladi. Shuningdek, matematik modellashtirish bosqichlari va asosiy usullari haqida ma'lumot berilgan.

Kalit so'zlar: matematik modellashtirish, matematik model, real jarayon, funksiya, differensial tenglama, optimallashtirish, modellashtirish usullari.

Hozirgi zamon fan va texnika taraqqiyotida matematik modellashtirish muhim o'rin egallaydi. Murakkab jarayonlarni bevosita o'rganish har doim ham qulay yoki iqtisodiy jihatdan samarali bo'lmaganligi sababli, ularni matematik modellar yordamida ifodalash keng qo'llaniladi. Matematik modellashtirish real obyekt yoki hodisaning



muhim xususiyatlarini matematik belgilar, formulalar, tenglamalar va funksiyalar orqali tasvirlash jarayonidir. Matematik modellashtirish usullari fizika, iqtisodiyot, biologiya, tibbiyot, muhandislik va axborot texnologiyalarida keng qo'llaniladi. Ushbu usullar yordamida jarayonlarni oldindan bashorat qilish, natijalarni tahlil qilish va optimal yechimlarni topish mumkin.

Matematik model — bu real obyekt, hodisa yoki jarayonning matematik ifodasidir. Model yordamida murakkab tizimlarning asosiy qonuniyatlari o'rganiladi. Masalan, jismning tekis harakati quyidagi formula orqali ifodalanadi: $s = vt$

Bu yerda: (s) — masofa, (v) — tezlik, (t) — vaqt.

Mazkur formula real harakat jarayonining matematik modeli hisoblanadi.

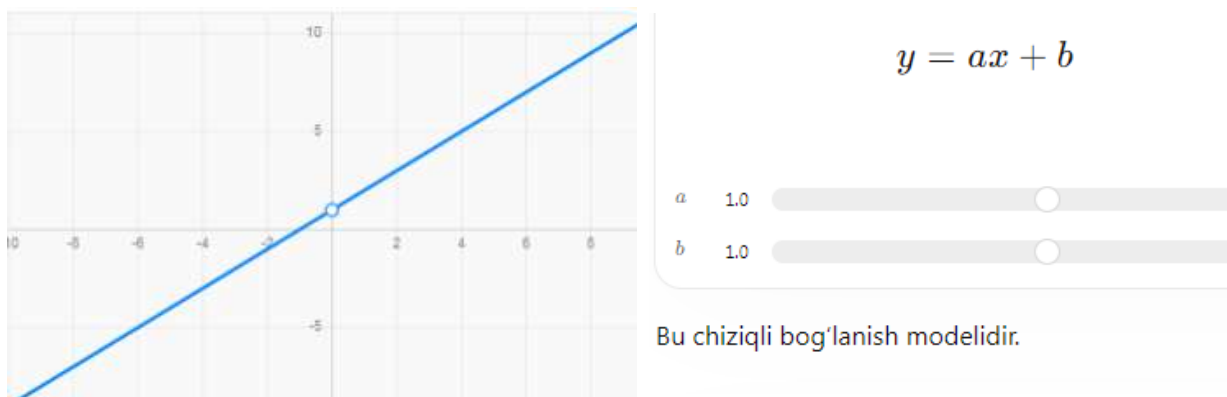
Matematik modellashtirish bir necha bosqichda amalga oshiriladi:

1. Muammoni o'rganish. Dastlab real jarayon yoki obyekt tahlil qilinadi. Jarayonning asosiy xususiyatlari aniqlanadi.
2. Matematik model tuzish. Jarayon matematik formulalar, tenglamalar yoki funksiyalar yordamida ifodalanadi. Masalan, aholi sonining o'sishi eksponensial model orqali ifodalanadi: $P(t) = P_0 e^{kt}$
3. Modelni yechish. Hosil qilingan matematik model turli matematik usullar yordamida yechiladi.
4. Natijalarni tahlil qilish. Olingan natijalar real jarayon bilan taqqoslanadi va modelning aniqlik darajasi baholanadi.

Real jarayonlarni ifodalash usullari

1. Algebraik modellar- Bu usulda jarayon algebraik tenglamalar yordamida ifodalanadi. Oddiy iqtisodiy yoki fizik jarayonlarni tasvirlashda qo'llaniladi.

Masalan:



Bu chiziqli bog'lanish modelidir.

2. Differensial tenglamalar yordamida modellashtirish- Vaqt bo'yicha o'zgaruvchi jarayonlar differensial tenglamalar orqali ifodalanadi. Masalan, radioaktiv parchalanish jarayoni: $\frac{dN}{dt} = -\lambda N$

Bu model fizika va kimyo fanlarida keng qo'llaniladi.

3. Statistik modellar- Tasodifiy hodisalarni o'rganishda statistik modellar qo'llaniladi. Bu usul iqtisodiyot va sotsiologiyada muhim ahamiyatga ega.

Masalan, regressiya modellari yordamida iqtisodiy ko'rsatkichlar tahlil qilinadi.

4. Kompyuter modellashtirish- Murakkab jarayonlarni kompyuter dasturlari yordamida modellashtirish zamonaviy ilm-fanning asosiy yo'nalishlaridan biridir. Sun'iy intellekt, ob-havo prognozi va texnologik tizimlarni boshqarishda keng foydalaniladi.

Matematik modellashtirish quyidagi imkoniyatlarni yaratadi:

- 1) murakkab jarayonlarni soddalashtirib o'rganish
- 2) tajriba xarajatlarini kamaytirish
- 3) jarayonlarni oldindan bashorat qilish
- 4) optimal qarorlar qabul qilish
- 5) xavfli jarayonlarni virtual tarzda sinash.

Bugungi kunda aerokosmik texnologiyalar, tibbiyot va iqtisodiy rejalashtirishda matematik modellashtirishsiz samarali faoliyat yuritish qiyin. Matematik modellashtirish quyidagi sohalarda keng qo'llaniladi: fizika, iqtisodiyot, biologiya, ekologiya, tibbiyot, muhandislik, kompyuter texnologiyalari. Masalan, epidemiologiyada kasallik tarqalishini prognoz qilish uchun matematik modellar qo'llaniladi.

Xulosa. Matematik modellashtirish real jarayonlarni o'rganishning samarali usullaridan biridir. U yordamida murakkab tizimlarning ishlash qonuniyatlari aniqlanadi va kelajakdagi holatlar bashorat qilinadi. Matematik modellar fan va texnika rivojida muhim o'rin tutib, turli sohalarda samarali qarorlar qabul qilish imkonini beradi. Shu sababli matematik modellashtirish zamonaviy ilm-fanning ajralmas qismi hisoblanadi.

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Chemical composition and medicinal properties of Bo'znoh (*Helichrysum arenarium*)

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Annotation

The sandy everlasting (*Helichrysum arenarium*) has long been used in folk medicine for the treatment of various diseases. Recent scientific studies have shown that this plant is rich in biologically active compounds and possesses hepatoprotective, choleric, and antimicrobial properties.

Keywords

Helichrysum arenarium, sandy everlasting, flavone, flavonol, flavanone, coumarin, sterol, carotenoid, antioxidant.

Bo'znoh (*Helichrysum arenarium*) o'simligining kimyoviy tarkibi va shifobaxsh xususiyatlari

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Annotatsiya: Bo'znoh o'simligi qadimdan xalq tabobatida turli kasalliklarni davolashda ishlatilib kelinadi. So'nggi yillarda olib borilgan ilmiy tadqiqotlar bu o'simlikning biologik faol moddalarga boyligini hamda jigarni himoya qiluvchi, safro haydovchi va antimikrob xususiyatlarga egaligini ko'rsatadi.

Аннотация: Бессмертник песчаный (*Helichrysum arenarium*) издавна используется в народной медицине для лечения различных заболеваний. В последние годы проведённые научные исследования показали, что это растение богато биологически активными веществами и обладает гепатопротекторными, желчегонными и антимикробными свойствами.

Kalit so'zlar: (*Helichrysum arenarium*, bo'znoh, flavon, flavonol, flavanon, kumarin, sterin, karotinoid, antioksidant.



Ключевые слова: *Helichrysum arenarium*, бессмертник песчаный, флавоон, флавонол, флаванон, кумарин, стерин, каротиноид, антиоксидант.

Tabiiy dorivor o'simliklar tibbiyotda katta ahamiyatga ega bo'lib, ularning tarkibi va xususiyatlari doimiy ravishda o'rganib borilmoqda. Bo'znoch (*Helichrysum arenarium*) shunday o'simliklardan biri hisoblanadi.

Bo'znoch (*Helichrysum arenarium*) — murakkabguldoshlar oilasiga mansub dorivor o'simlik bo'lib, u oddiy shuvoq barglariga o'xshagan nozik bargli va hayotiy shakliga ko'ra ko'p yillik o't hisoblanadi. Bo'znoch asosan qumloq va quruq yerlarda, cho'l zonasida, daryo bo'ylarida o'sadi. O'zbekistonning cho'l hududlarida, shuningdek, Qozog'iston, Rossiya va Sharqiy Yevropa mamlakatlarida ham keng tarqalgan Boshchasi dumaloq va oltin rangda, jambil boshchasiga o'xshaydi. Bo'yi 15-30 sm ga boradi, poyalari to'g'ri o'sadi. Ildiz yonbarglari kalta bandli, teskari, tuxumsimon, ustki barglari poyasiga tarqalgan, navbatma-navbat joylashgan, chiziqli nashtarsimon. Poyalari bilan barglari kigizdek qalin, oqish tuklar bilan qoplangan. Sariq gullari sharsimon savatchalarga to'plangan bo'lib, mevasi — kichkina popukli cho'zinchoq urug'. May-sentabrda gullaydi. Mevalari (urug'lari) iyul-oktabrda yetiladi [1].

Bo'znoch (*Helichrysum arenarium*) o'simligi o'zining boy kimyoviy tarkibi bilan ajralib turadi. Tadqiqotlar shuni ko'rsatadiki, o'simlikning gullari, barglari va poyasi turli sinfdagi biologik faol moddalarga boy. Ular orasida flavonoidlar, fenolik kislotalar, efir moylari, kumarinlar, steroidlar, karotinoidlar va organik kislotalar muhim o'rin egallaydi. Asosan, gul savatchalari ishlatiladi. To'p gullarida flavonoidlar (0,25%), kumarinlar, sterinlar, efir moyi yuqori (0,05%), vitaminlar, smolalar, oshlovchi va boshqa moddalar bor [1,2].

Flavonoidlar bo'znochning asosiy faol komponentlar bolib, ular o'simlikning farmakologik ta'sirini belgilovchi asosiy birikmalardir. Czinner va hamkorlari (1999) olib borgan tadqiqotlarda o'simlik gullaridan isosalipurposid, naringenin, apigenin, luteolin, kaempferol va ularning glikozidlari ajratib olingan [3].



Bu moddalar antioksidant, yallig‘lanishga qarshi, jigarni himoya qiluvchi va safro haydovchi xususiyatlarga ega. Pljevljakušić esa 2018-yilda o‘simlikda flavon, flavonol, flavanon sinfidagi 20 dan ortiq flavonoid turlarini aniqlashgan. Shuningdek, arenol va arzanol kabi noyob birikmalar ham topilgan. Bu flavonoidlar yallig‘lanishni kamaytiruvchi va bakteriyalarga qarshi ta’sir ko‘rsatadi [4].

Bundan tashqari, o‘simlikda kaliy, magniy, temir, rux kabi mikroelementlar mavjud bo‘lib, ular organizmdagi moddalar almashinuvini faollashtiradi. Olingan ma’lumotlarga ko‘ra, *Helichrysum arenarium* ekstrakti jigarni toksinlardan tozalashda va hujayralarni yangilashda yordam beradi [5].

Bo‘znochning dorivor qiymati uning kimyoviy tarkibi bilan chambarchas bog‘liq. O‘simlikning gullaridan tayyorlangan damlama va ekstraktlar safro haydovchi, yallig‘lanishga qarshi, antimikrob va antiallergik ta’sir ko‘rsatadi. Flavonoid va efir moylari jigar faoliyatini yaxshilaydi, safro ajralishini kuchaytiradi, ovqat hazm qilishni normallashtiradi. Shu bois o‘simlik surunkali gepatit, xolesistit va gastrit kasalliklarini davolashda tavsiya etiladi [6].

Bo‘znoch shuningdek, teri kasalliklarida ham samarali vosita sifatida ishlatiladi. U yallig‘lanishni kamaytiradi va terining holatini yaxshilaydi. O‘simlik tarkibidagi antioksidantlar esa immun tizimini mustahkamlaydi, tanani erkin radikallardan himoya qiladi. Xalq tabobatida bo‘znoch yurak-qon tomir tizimi faoliyatini yaxshilash, qon bosimini me’yorda ushlab turish va modda almashinuvini faollashtirish uchun ham qo‘llaniladi [7].

Bo‘znoch o‘simligi o‘zining boy kimyoviy tarkibi va tabiiy biofaol moddalari tufayli xalq tabobatida ham, farmatsevtika sohasida ham muhim ahamiyatga ega. Undan tayyorlangan preparatlar inson salomatligini saqlash, jigarni himoya qilish, immunitetni mustahkamlash va turli kasalliklarning oldini olishda samarali vosita sifatida ishlatiladi. Foydalanilgan adabiyotlar

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