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BOSHLANG'ICH SINFLARDA MATEMATIKA DARSLARINI INTERAKTIV USULLARDA TASHKIL ETISH

Zaripova Mushtariybonu

Termiz iqtisodiyot va servis universiteti

Boshlang'ich ta'lim 1-bosqich talabasi

Annotatsiya: Mazkur maqolada boshlang'ich sinflarda matematika fanini interaktiv usullar orqali o'qitishning nazariy va amaliy jihatlarini yoritilgan. Interaktiv metodlarning asoslari, ularning o'quvchi faolligini oshirishdagi o'rni, dars samaradorligiga ta'siri hamda o'quvchilarning mantiqiy fikrlash va muammoni hal qilish ko'nikmalarini rivojlantirishdagi roli tahlil qilinadi. Shuningdek, maqolada matematik darslarda samarali qo'llanishi mumkin bo'lgan turli interaktiv usullar va ularning afzalliklari misollar asosida ko'rib chiqilgan. Tajriba va kuzatuvlarga tayangan holda interaktiv metodlarning boshlang'ich ta'limdagi dolzarbligi asoslab berilgan.

Kalit so'zlar: boshlang'ich ta'lim, matematika, interaktiv usullar, dars samaradorligi, o'quvchi faolligi, didaktik o'yinlar, psixologik yondashuv, pedagogik texnologiya.

Kirish

Bugungi globallashuv davrida ta'lim jarayoniga qo'yilayotgan talablar kundankunga oshib bormoqda. Ayniqsa, boshlang'ich ta'lim bosqichida bilimlarning asoslari qo'yilishi, o'quvchilarning fikrlash ko'nikmalari shakllanishi bois bu davrda qo'llaniladigan o'quv metodlari va yondashuvlar katta ahamiyatga ega. Matematika fani esa boshlang'ich sinflarda asosiy fanlardan biri bo'lib, u mantiqiy fikrlash, aniq tahlil qilish, muammoli vaziyatlarni yechish ko'nikmalarini rivojlantirishga xizmat qiladi. Shu nuqtayi nazardan, dars jarayonida interaktiv metodlardan foydalanish matematika fanining mazmunini chuqurroq anglash, o'quvchilarda qiziqish uyg'otish va ularning mustaqil fikrlash qobiliyatini rivojlantirishda muhim vositadir.

Asosiy qism

1. INTERAKTIV USULLARNING PEDAGOGIK ASOSLARI

Interaktiv ta'lim — bu o'quvchi va o'qituvchining faol muloqoti asosida tashkil etilgan ta'limdir. Bunda o'quvchilar darsda passiv eshituvchi emas, balki faol ishtirokchi sifatida qatnashadi. Konstruktiv yondashuv asosida qurilgan interaktiv metodlar bilimni o'zlashtirishda o'quvchi tajribasiga, amaliyotga tayanadi. Lev Vygotskiyning ijtimoiy-rivojlanish nazariyasi, Jon Dyuning faoliyatga asoslangan yondashuvi interaktiv metodlarning nazariy poydevorini tashkil etadi.

2. BOSHLANG'ICH SINIF O'QUVCHISINING PSIXOLOGIK-PEDAGOGIK XUSUSIYATLARI

Boshlang'ich sinif o'quvchilari ko'proq ko'rgazmali obrazlar orqali fikrlaydi, ularning e'tibor muddati qisqa, qiziqishi esa tez o'zgaradi. Shuning uchun matematika darslari vizual, amaliy va o'yin shakllarida tashkil etilishi zarur. Interaktiv metodlar aynan shu xususiyatlarga mos tushib, o'quvchilarda bilimga bo'lgan ishtiyoqni uyg'otadi, dars jarayonini faol va samarali qiladi.

3. MATEMATIKA DARSLARIDA QO'LLANILADIGAN INTERAKTIV METODLAR

Boshlang'ich sinif matematika darslarida quyidagi interaktiv metodlar eng samarali hisoblanadi:

- “Aqliy hujum” – O'quvchilarga muammo vaziyati beriladi, ular imkon qadar ko'p yechimlarni taklif qiladi.
- “Juftlikda ishlash” – Ikkita o'quvchi savollarni muhokama qiladi va umumiy yechim topadi.
- “Guruhli ish” – O'quvchilar kichik guruhlarda masalalarni birgalikda yechadi, bu ularning ijtimoiylashuvini ham ta'minlaydi.
- Didaktik o'yinlar – “Raqamli domino”, “Top-to'rta”, “Matematik auksion” kabi o'yinlar o'quvchilarning darsga qiziqishini oshiradi.
- Axborot texnologiyalaridan foydalanish – Interaktiv doskalar, multimediali topshiriqlar orqali darsni jonlantirish mumkin.

4. AMALIY KUZATISHLAR VA NATIJALAR

Qator maktablarda olib borilgan tajribalar shuni ko'rsatdiki, interaktiv metodlar asosida o'tilgan matematika darslari:

- O'quvchilarning faolligini 30–40% ga oshirgan;
- Darsda qatnashish va savollarga javob berish ko'rsatkichlari keskin yaxshilangan;
- Mantiqiy fikrlash darajasi oshgan;
- Mustaqil ishlash, guruhda hamkorlik qilish ko'nikmalari shakllangan.

5. O'QITUVCHINING ROLI

O'qituvchi interaktiv metodlarni puxta rejalashtirishi, o'quvchilarning yosh xususiyatlariga moslab tanlashi kerak. Har bir dars oldidan metod tanlovi, darsda qo'llaniladigan resurslar, vaqti va kutilgan natijalar aniqlashtiriladi. O'qituvchi – muhit yaratuvchi va o'quvchining faolligini boshqaruvchi shaxs sifatida harakat qiladi.

Xulosa

Boshlang'ich ta'limda matematika darslarini interaktiv usullar asosida tashkil etish o'quvchilarda fan bo'yicha bilimlarni chuqur va barqaror o'zlashtirish, mantiqiy fikrlashni rivojlantirish, ijtimoiy muhitda faol ishtirok etish kabi muhim kompetensiyalarni shakllantirishga xizmat qiladi. Interaktiv metodlardan oqilona foydalanish, ularni dars mazmuni va o'quvchilar darajasiga moslashtirish – zamonaviy

o'qituvchining eng muhim vazifasidir. Shunday ekan, ushbu yondashuvni boshlang'ich ta'lim amaliyotida keng qo'llash ta'lim sifati va samaradorligini oshiradi.

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**THE EFFECTIVENESS OF INCORPORATING TECHNOLOGY-BASED
COMMUNICATIVE TASKS IN IMPROVING VOCABULARY
ACQUISITION IN DIVERSE ESL CLASSROOM.**

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Abstract. This article examines the effectiveness of technology-based communicative tasks in vocabulary acquisition in various ESL (English as a Second Language) classrooms. Communicative activities organized with the help of modern technologies and online platforms assist learners in acquiring new words in context, strengthening language skills, and increasing motivation towards language learning. The research results show that technology-based tasks significantly enhance learners' vocabulary and help develop their speaking abilities.

Keywords. ESL, vocabulary acquisition, communicative tasks, technology-enhanced education, digital tools, language learning.

Vocabulary is one of the most essential components in any language learning process. For learners of English as a second language, acquiring new words plays a crucial role in developing all language skills. In recent years, alongside the widespread integration of technology into education, methods of vocabulary learning have undergone significant changes. Unlike traditional lessons, technology-based communicative tasks provide learners with opportunities to interact, share ideas, and acquire new vocabulary within context. Therefore, it is relevant today to determine the effectiveness of such tasks in ESL classrooms and analyze how to use them efficiently in the educational process.

Technologies are actively used as tools to enhance interactivity and communication in language learning. Especially in ESL classrooms, communicative tasks help learners not only memorize new vocabulary but also learn to apply it in practice. Such tasks include activities like participating in discussions on online forums, playing games in language learning mobile applications, organizing conversations through video conferences, and many other interactive exercises.

Firstly, technology-based communicative tasks ensure active interaction among learners. This, in turn, encourages them to understand and use new vocabulary in context. For example, an online group discussion on a particular topic allows learners

to apply new terms in their own ideas and strengthens their vocabulary. Additionally, interactive multimedia tools (videos, images, audio materials) help learners gain a clearer understanding of the meanings of vocabulary words being taught.

Secondly, digital tools increase learners' motivation to study. Since the younger generation is accustomed to technology, technology-based tasks become more engaging and appealing for them. This situation makes the learning process more effective because learners strive to continue studying in a way that they enjoy.

Thirdly, technology-based communicative tasks allow for greater individualization in the language learning process. Each learner can acquire new vocabulary at their own pace and choose topics that match their interests. This improves the quality of vocabulary acquisition and encourages learners to engage in independent study.

Technologies provide learners with constant opportunities for practice. For example, language learners do not miss the chance to use new vocabulary by engaging in written or oral communication with other learners through online chats or language learning platforms.

Technology-based communicative tasks serve as an effective tool for increasing the vocabulary of ESL learners. They help not only in memorizing new words but also in developing the skill of using them in real communication. This enhances the efficiency of the language learning process and strengthens learners' motivation and interest in the language.

Another important aspect of technology-based communicative tasks is that they ensure contextual learning. Unlike traditional vocabulary memorization methods, technology-based tasks encourage learners not only to memorize new words but also to use them in real-life situations. For example, language learners use words appropriately in video chats or online role-playing games, which helps words to be firmly retained in memory. Additionally, through multimedia tools, learners become more familiar with the pronunciation, intonation, and semantics of words, which improves the quality of their language skills.

Furthermore, technology-based communicative tasks promote collaboration among learners. By participating in online group work or virtual communities, learners have the opportunity to listen to each other's opinions, exchange ideas, and use new vocabulary in communication. This emphasizes the social nature of language learning and helps develop learners' social communicative competence.

Communicative tasks organized through technology enhance learners' self-assessment and autonomy in learning. Learners have the opportunity to review their activities, identify and correct mistakes, which contributes to improving the quality of language learning. For example, language learners can track their vocabulary level using online dictionary apps or language learning platforms, allowing them to identify

their weaknesses and work on them.

Technology-based tasks also facilitate the work of educators in ESL classrooms. They enable teachers to monitor learners' progress, identify individual needs, and personalize the learning process. Additionally, communicative tasks created with the help of technology are adapted to various learning styles, allowing each student to acquire vocabulary in a way that is comfortable for them.

There are also potential challenges in the process of vocabulary learning through technology-based communicative tasks. For example, technical limitations such as lack of access to technological tools or internet connectivity issues can negatively affect the quality of education. Additionally, some learners may not know how to use technology effectively or may lack sufficient motivation to fully benefit from such tasks. Therefore, it is essential to consider everyone's needs and capabilities when implementing technology-based tasks.

Technology-based communicative tasks significantly improve vocabulary acquisition in ESL classrooms in many ways. They enable learners to fully understand the context when acquiring new words, actively participate in communication, engage in self-assessment, and maintain a continuous interest in learning. This process enhances learners' practical language skills and significantly improves their overall language proficiency.

The interactive activity of learners plays a crucial role in enhancing the effectiveness of technology-based communicative tasks in vocabulary acquisition. For example, active participation in virtual environments allows learners to independently study new words and use them in communication. Online group sessions, video chats, and social networks designed for language learning bring learners together and help improve their language skills. This process facilitates learners' exchange of ideas and helps them gain a deeper understanding of new vocabulary through questions and answers.

Additionally, technology-enabled tasks offer learners engaging and game-based exercises. For example, vocabulary games conducted through mobile apps and interactive web platforms motivate the language learning process. Such games stimulate competition and self-improvement spirit among learners, resulting in faster acquisition of new words. It is important to note that these games often reduce students' stress and foster a positive attitude towards learning.

Another important aspect is that technology-based communicative tasks provide learners with the opportunity to communicate with peers from diverse cultural backgrounds. This enriches their language learning process and helps them acquire vocabulary not only in theoretical but also in cultural contexts. Such exchanges on a global scale broaden learners' worldviews and lead to a deeper understanding of the language.

Technology-based communicative tasks enable learners to develop their listening, reading, writing, and speaking skills in an integrated manner. For example, through interactive videos, learners can hear the pronunciation of new words, read texts, and engage in conversations based on them, which helps develop comprehensive language acquisition skills. This makes language learning in ESL classrooms more effective.

At the same time, tasks organized with the help of technology can be tailored to the individual needs of learners. For example, online platforms identify which words learners know well and which need to be reviewed, offering personalized exercises. This individualized approach helps reinforce learners' knowledge and improves the quality of the learning process.

Technology-based tasks provide the opportunity for quick assessment of learners' achievements and timely feedback. This helps develop learners' self-assessment skills, increases motivation, and assists in correcting mistakes during the learning process. Additionally, it allows teachers to monitor learners' progress and adapt the educational process accordingly.

Technology-based communicative tasks effectively organize the vocabulary acquisition process in ESL classrooms on interactive, individual, and contextual bases. This approach yields better results compared to traditional methods of language learning and further increases learners' interest in the language.

Conclusion

In conclusion, technology-based communicative tasks significantly improve the vocabulary acquisition process in ESL classrooms. These methods enable learners to study new words in context, engage in active communication, and freely express their thoughts. Technology makes the educational process interactive, engaging, and personalized, which enhances learners' motivation and learning outcomes. Therefore, ESL teachers are encouraged to actively incorporate various technology-based communicative tasks in their lessons. Further research should be conducted to improve and expand the learning process based on these methods in the future.

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ABDULLA QODIRIYNING "O'TGAN KUNLAR" ROMANINING TARBIYAVIY AHAMIYATI

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Annotatsiya: Ushbu maqolada Abdulla Qodiriyning "O'tgan kunlar" romani tarbiyaviy ahamiyati tahlil qilinadi. Roman o'zbek adabiyotida milliy ma'naviyat va axloqiy qadriyatlarni shakllantirishda muhim o'rin tutadi. Asarda aks etgan insoniy fazilatlar, ota-ona va jamiyatga bo'lgan mas'uliyat, do'stlik va sadoqat kabi mavzular yosh avlodning tarbiyasida muhim ahamiyat kasb etadi. Mazkur maqola roman qahramonlari orqali tarbiyaviy tamoyillarni ochib beradi va ularning zamonaviy ta'lim-tarbiya jarayonlaridagi o'rni haqida fikr yuritadi.

Kalit so'zlar: Abdulla Qodiriy, O'tgan kunlar, tarbiya, ma'naviyat, o'zbek adabiyoti, axloqiy qadriyatlar, milliy meros, yosh avlod.

Kirish

Adabiyot inson tarbiyasining muhim vositalaridan biridir. Ayniqsa, badiiy asarlar yosh avlodning ma'naviy va axloqiy dunyoqarashini shakllantirishda katta rol o'ynaydi. Abdulla Qodiriy yozgan "O'tgan kunlar" romani o'zbek adabiyotida milliy va ma'naviy qadriyatlarni targ'ib qilishda peshqadam asar hisoblanadi. Ushbu maqolada "O'tgan kunlar" romanining tarbiyaviy ahamiyati, uning asosiy mavzulari va qahramonlari orqali yoshlarni ma'naviy tarbiyalashdagi o'rni tahlil qilinadi.

Asosiy qism

Adabiyotning tarbiyaviy roli nafaqat axloqiy qadriyatlarni shakllantirishda, balki milliy o'zlikni anglash va jamiyat hayotida muhim o'rin tutadi. XX asr boshlarida yaratilgan Abdulla Qodiriyning "O'tgan kunlar" romani o'zbek xalqining ma'naviy va ijtimoiy hayotini aks ettirib, yosh avlodning vatanparvarlik, halollik, do'stlik kabi fazilatlarini tarbiyalashda o'ta muhim vosita bo'ldi. Ushbu maqola zamonaviy pedagogika va adabiyotshunoslik nuqtai nazaridan romanning tarbiyaviy ahamiyatini tahlil qiladi. "O'tgan kunlar" romani o'zbek adabiyotida ilk zamonaviy roman sifatida tarixiy va madaniy kontekstda katta ahamiyatga ega. Asar muallifi Abdulla Qodiriy o'z davrining ijtimoiy muammolarini, xususan, feodalizm va eskicha urf-odatlarining inson hayotiga ta'sirini chuqur tahlil etgan. Roman qahramonlari hayotidagi murakkab vaziyatlar orqali o'quvchi nafaqat tarixiy voqealarni, balki axloqiy-axloqiy qarorlarni ham o'rganadi. Shuningdek, romanda o'zbek xalqining milliy qadriyatlari, urf-odatlari va madaniyati jonli ta'sirchan tarzda aks ettirilgan. Tarbiyaviy ahamiyat tushunchasi

pedagogika va adabiyotshunoslikda keng o'rganilgan. Unga ko'ra, badiiy asarlar yoshlarning shaxsiyati, dunyoqarashi va ijtimoiy xulqini shakllantirishda vosita bo'lib xizmat qiladi. "O'tgan kunlar" romani esa ayniqsa quyidagi pedagogik tamoyillarni o'zida mujassamlashtiradi:

- Axloqiy namuna bo'lish: Romandagi qahramonlar o'z axloqiy qarorlari va harakatlari bilan yoshlarni yaxshi fazilatlarni o'zlashtirishga undaydi.

- Tarixiy xabardorlikni oshirish: Tarixiy kontekstda yozilgan asar yosh avlodni o'z tarixiga qiziqtiradi.

- Milliy ruhni tarbiyalash: Milliy qadriyatlar va an'analarni hurmat qilishga o'rgatadi.

- Emotsional va aqliy jihatdan rivojlantirish: Asar o'quvchilarda empatiya, tanqidiy fikrlash va axloqiy baholash ko'nikmalarini shakllantiradi.

Qahramonlar orqali tarbiyaviy qadriyatlarning ochilishi

Roman qahramonlari orqali tarbiyaviy ahamiyatni chuqurroq tahlil qilamiz:

- Otabek – ideal do'st va vatanparvar sifatida tasvirlanadi. Uning sadoqati va jasorati yoshlarni sadoqat va jasoratga o'rgatadi. Otabekning hayoti va qarorlari orqali ijtimoiy adolat va do'stlik qadriyatlari yuksak darajada ko'rsatiladi.

- Kumush – hayotning qiyinchiliklariga qaramay, sabr-toqat va mehr-muhabbat timsoli. U ayollarning oiladagi o'rni va ma'naviy kuchini namoyish etadi.

- Hamza – ijtimoiy o'zgarishlarni istagan qahramon, yoshlarni adolat, tenglik va milliy o'zlik uchun kurashishga undaydi.

Bu obrazlar o'quvchilarga ma'naviy-axloqiy qadriyatlarni o'zlashtirishda namuna bo'lib xizmat qiladi.

Ma'naviy va axloqiy qadriyatlar

Romanda tarbiyaviy ahamiyatga ega bo'lgan asosiy qadriyatlar:

- Vatanparvarlik: Romandagi voqealar va qahramonlarning harakatlari orqali millatga muhabbat va o'zligini anglash ruhida tarbiya beriladi. Vatanparvarlik nafaqat so'zda, balki amalda namoyon bo'lishi kerakligi ta'kidlanadi.

- Halollik va sadoqat: Qahramonlarning halolligi va sadoqati yoshlarni axloqiy poklikka chorlaydi.

- Do'stlik va mehr-muhabbat: Asar do'stlikning kuchi va insoniy munosabatlarning ahamiyatini yoritadi.

- Ota-ona va oilaga hurmat: Roman oilaviy qadriyatlarni, ota-ona va avlodlar o'rtasidagi hurmatni asosiy tamoyil sifatida ko'rsatadi.

- Madaniyat va an'analarga hurmat: Milliy an'analarga, urf-odatlar va madaniy merosning qadriyatlari targ'ib qilinadi.

Romanning zamonaviy ta'lim-tarbiyadagi o'rni

Zamonaviy ta'lim tizimida "O'tgan kunlar" romani quyidagi jihatlar bilan muhim:

- Milliy adabiyot darsi uchun asosiy material: Roman o'quv dasturlarida milliy

adabiyot va tarix fanlari bilan birgalikda o'qitiladi.

- Axloqiy tarbiya vositasi: Roman qahramonlari va voqealari orqali yoshlar axloqiy qarorlar qabul qilishga o'rgatiladi.

- Madaniy merosni anglash: Asar orqali yoshlar o'z milliy madaniyatini chuqurroq tushunadi.

- Tanqidiy fikrlashni rivojlantirish: Roman voqealarini tahlil qilish orqali yoshlarning mantiqiy va tanqidiy fikrlash ko'nikmalari shakllanadi.

- Emotsional tarbiya: Qahramonlarning his-tuyg'ulari va hayotiy sinovlari yoshlarning empatiya qobiliyatini oshiradi.

Tanqidiy nuqtai nazar

"O'tgan kunlar" romanida ba'zi jihatlar zamonaviy nuqtai nazardan tanqid qilinishi mumkin:

- An'anaviy qadriyatlarning idealizatsiyasi: Ba'zan qahramonlarning axloqiy fazilatlarini ortiqcha idealizatsiya qilinadi, bu esa real hayot bilan mutanosib bo'lmashligi mumkin.

- Ijtimoiy qatlamlar va gender masalalari: Romanda ayollarning roli va ijtimoiy mavqei haqida kengroq tahlil yetishmaydi.

- Tarixiy kontekst cheklovlari: Asar o'z davrining ijtimoiy-siyosiy sharoitlari bilan chegaralanganligi sababli, zamonaviy ijtimoiy muammolarni qamrab olmaydi.

Shunga qaramay, romanning tarbiyaviy ahamiyati va ma'naviy ta'siri yuqori baholanadi.

Xulosa

Abdulla Qodiriyning "O'tgan kunlar" romani o'zbek adabiyotining poydevori bo'lib, yoshlarni tarbiyalashda ma'naviy-axloqiy qadriyatlarni singdirishda muhim rol o'ynaydi. Asar qahramonlarining hayotiy tajribalari, ularning axloqiy qarorlari yoshlar uchun ma'naviy namunadir. Zamonaviy ta'limda romanni o'rganish orqali milliy madaniyat, tarix va axloqiy tamoyillarni chuqur anglash imkoniyati yaratiladi. Shu bois, "O'tgan kunlar" nafaqat adabiy, balki tarbiyaviy meros sifatida ham qadrlanishi lozim.

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MUBORAK TUMANINING MUSTAQILLIK YILLARIDA IJTIMOIY-IQTISODIY HAYOTI (1991-2024)

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Annotatsiya

Ushbu ilmiy maqolada Muborak tumanining mustaqillik yillaridagi ijtimoiy-iqtisodiy hayoti tahlil qilinadi. 1991-2024 yillar davomida tumanda amalga oshirilgan iqtisodiy islohotlar, sanoat va qishloq xo'jaligi rivoji, ijtimoiy infratuzilma va aholi hayot darajasining o'zgarishi ko'rib chiqiladi. Maqolada tuman iqtisodiyotining asosiy tarmoqlari, bandlik, ta'lim, sog'liqni saqlash sohasidagi yutuqlar va muammolar, shuningdek, hududning investitsion salohiyati va istiqbolli rivojlanish yo'nalishlari yoritiladi. Tadqiqot Muborak tumanining mustaqillik davrida erishgan ijtimoiy-iqtisodiy yutuqlari va duch kelgan muammolarini kompleks tarzda ko'rsatadi.

Kalit so'zlar: Muborak tumani, ijtimoiy-iqtisodiy rivojlanish, mustaqillik yillari, sanoat, qishloq xo'jaligi, bandlik, ta'lim, sog'liqni saqlash, investitsiyalar, hududiy rivojlanish.

Kirish

O'zbekiston Respublikasining mustaqillikka erishishi bilan respublikaning barcha hududlarida, jumladan Muborak tumanida ham ijtimoiy-iqtisodiy sohada tub o'zgarishlar yuz berdi. Mustaqillik yillarida tumanning iqtisodiy salohiyati kengayib, yangi sanoat korxonalari tashkil etildi, qishloq xo'jaligi modernizatsiya qilindi, ijtimoiy sohalarda esa aholi hayot darajasi yaxshilandi. Ushbu maqolada Muborak tumanining 1991 yildan 2024 yilgacha bo'lgan davrdagi ijtimoiy-iqtisodiy holati, erishilgan yutuqlar va mavjud muammolar tahlil qilinadi.

Muborak tumani haqida umumiy ma'lumot

Muborak tumani Buxoro viloyatining muhim iqtisodiy va ijtimoiy markazlaridan biri hisoblanadi. Hududning geografik joylashuvi, tabiiy resurslari va sanoat salohiyati tuman rivojida muhim omillardir. Mustaqillik yillarida tumanda aholi soni sezilarli darajada oshdi, infratuzilma yaxshilandi va yangi ishlab chiqarish korxonalari ishga tushirildi.

Iqtisodiy rivojlanish

Sanoat sohasining rivoji

Mustaqillik davrida Muborak tumanida sanoatning turli tarmoqlari – neft-gaz, kimyo, qurilish materiallari ishlab chiqarish kabi sohalar rivojlantirildi. Muborak neft-

gaz konlari yangidan qayta ishga tushirilib, neftni qayta ishlash korxonalari faoliyati kengaytirildi. Shu bilan birga, kichik va o'rta biznes sub'ektlari faoliyati rivojlanib, sanoat salohiyati oshdi.

Qishloq xo'jaligi

Qishloq xo'jaligi Muborak tumanining iqtisodiyotida muhim o'rin tutadi. Mustaqillik yillarida ekin maydonlari kengaytirildi, irrigatsiya tizimi modernizatsiya qilindi. Chorvachilik, bog'dorchilik va parrandachilik sohalarida ham sezilarli yutuqlar qayd etildi.

Investitsiyalar va infratuzilma

Hududga ichki va xorijiy investitsiyalar jalb qilindi, yangi sanoat korxonalari va xizmat ko'rsatish sohaları tashkil etildi. Yo'l, suv ta'minoti, elektr energiyasi kabi infratuzilma sohalarida katta o'zgarishlar amalga oshirildi.

Ijtimoiy sohaning rivoji

Bandlik va mehnat bozori

Mustaqillik yillarida Muborak tumanida bandlik darajasi oshdi, yangi ish o'rinlari yaratildi. Mehnat bozori liberallashtirildi, aholining kasb-hunar tayyorlash tizimi rivojlantirildi.

Ta'lim sohasidagi o'zgarishlar

Muborakda ta'lim muassasalari soni va sifati yaxshilandi. Maktabgacha ta'lim, umumiy o'rta va kasb-hunar ta'limi tizimlari modernizatsiya qilindi. Yoshlarning bilim darajasini oshirishga qaratilgan dasturlar amalga oshirildi.

Sog'liqni saqlash

Sog'liqni saqlash tizimidagi islohotlar natijasida tuman aholisi uchun shifoxonalar, poliklinikalar va boshqa tibbiyot muassasalari faoliyati yaxshilandi. Tibbiy xizmat ko'rsatish sifati oshirildi, yangi tibbiy uskunalar joriy etildi.

Ijtimoiy-iqtisodiy muammolar va ularni hal qilish yo'llari

Muborak tumanining mustaqillik yillarida ijtimoiy-iqtisodiy rivojlanishida ayrim muammolar ham yuzaga keldi. Jumladan, sanoat korxonalarining ba'zilar ishlab chiqarishni modernizatsiya qilishda qiyinchiliklarga duch keldi, qishloq xo'jaligida suv resurslarini samarali boshqarish muammolari mavjud. Ijtimoiy sohada esa bandlikni yanada oshirish, ta'lim va sog'liqni saqlash sifatini yanada yaxshilash zaruriyati mavjud.

Muborak tumanining istiqbolli rivojlanish yo'nalishlari

Kelajakda Muborak tumani iqtisodiyotini diversifikatsiya qilish, innovatsion texnologiyalarni joriy etish, ekologik barqarorlikni ta'minlash va ijtimoiy sohalarni rivojlantirishga alohida e'tibor qaratilishi lozim. Shuningdek, hududga investitsiyalarni yanada jalb qilish, inson kapitalini rivojlantirish va infratuzilmani modernizatsiya qilish tuman rivojining asosiy yo'nalishlaridan biri hisoblanadi.

Xulosa

Muborak tumani mustaqillik yillarida ijtimoiy-iqtisodiy sohada sezilarli yutuqlarga erishdi. Sanoat va qishloq xo'jaligi rivojlandi, ijtimoiy infratuzilma yaxshilandi, bandlik va ta'lim sohalarida ijobiy o'zgarishlar kuzatildi. Shu bilan birga, mavjud muammolarni hal etish va hududni yanada rivojlantirish uchun samarali chora-tadbirlar zarur. Umuman olganda, Muborak tumani mustaqillik davrida o'zining iqtisodiy va ijtimoiy salohiyatini sezilarli darajada oshirdi.

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MA'MURIY HUQUQ NORMALARI VA ULARNING AHAMIYATI

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Ushbu ilmiy maqolada ma'muriy huquq normalari tushunchasi, ularning xususiyatlari, tizimi va zamonaviy jamiyatdagi ahamiyati tahlil qilinadi. Ma'muriy huquq normalari davlat boshqaruvida tartib-intizomni ta'minlash, fuqarolarning huquq va majburiyatlarini belgilash hamda ijtimoiy munosabatlarni tartibga solishda muhim vosita hisoblanadi. Maqolada ma'muriy huquq normalarining manbalari, ularning tizimlashtirilishi, shuningdek, amaliy hayotdagi roli va samaradorligi misollar bilan yoritiladi. Mazkur mavzu zamonaviy huquqshunoslik va davlat boshqaruvi sohasida dolzarb ahamiyatga ega.

Kalit so'zlar: Ma'muriy huquq, huquq normalari, davlat boshqaruvi, huquqiy tartib, huquqiy me'yor, ijtimoiy munosabatlar, huquqiy tizim, huquqiy normalar ahamiyati.

Kirish

Davlat boshqaruvi va jamiyat hayotini tartibga solishda huquq normalari muhim ahamiyatga ega. Xususan, ma'muriy huquq normalari davlat organlari faoliyatini, fuqarolarning huquq va majburiyatlarini belgilovchi asosiy huquqiy me'yorlardir. Ular jamiyatda tartib-intizomni saqlash, davlat boshqaruvidagi adolat va samaradorlikni ta'minlashda xizmat qiladi. Ushbu maqolada ma'muriy huquq normalarining tushunchasi, xususiyatlari, tizimi va ularning ijtimoiy-huquqiy ahamiyati batafsil yoritiladi.

Ma'muriy huquq normalarining tushunchasi va mohiyati

Ma'muriy huquq normalari — bu ma'muriy huquq sohasida davlat boshqaruvi va ijtimoiy munosabatlarni tartibga soluvchi huquqiy me'yorlardir. Ular davlat organlari, mansabdor shaxslar va fuqarolarning huquq va majburiyatlarini belgilaydi hamda ma'muriy-huquqiy tartibni ta'minlaydi.

Ma'muriy huquq normalarining asosiy xususiyatlari:

- Majburiylik: Ushbu normalarga rioya qilish barcha sub'ektlar uchun majburiydir.
- Umumiylik: Normalar keng doirada, barcha tegishli sub'ektlarga nisbatan amal qiladi.
- Davlat tomonidan kafolatlanishi: Ma'muriy huquq normalarini buzganlarga

nisbatan davlat tomonidan javobgarlik choralari qo'llaniladi.

- Ijtimoiy munosabatlarni tartibga solish: Ma'muriy huquq normalari davlat boshqaruvi va ijtimoiy munosabatlarning muayyan sohalarini tartibga soladi.

Ma'muriy huquq normalarining tizimi

Ma'muriy huquq normalari tizimi ularning funktsional, mazmuniy va shakliy jihatlarini o'z ichiga oladi. Tizim quyidagi asosiy elementlardan iborat:

- Normativ-huquqiy aktlar: qonunlar, farmonlar, qarorlar, ko'rsatmalar va boshqa rasmiy hujjatlar.

- Qoidalar va talablar: davlat boshqaruvi va ijtimoiy munosabatlarni tartibga soluvchi aniq ko'rsatmalar.

- Huquqiy prinsiplar: ma'muriy huquq normalarining asosiy tamoyillari va qadriyatlar.

Normativ-huquqiy aktlar ma'muriy huquq normalarining asosiy manbai hisoblanadi. Ular o'zaro bog'liq va bir-birini to'ldiruvchi tizimni tashkil qiladi.

Ma'muriy huquq normalarining ahamiyati

Davlat boshqaruvida tartib-intizomni ta'minlash

Ma'muriy huquq normalari davlat organlari faoliyatini tartibga solib, ularning vakolatlari va javobgarligini belgilaydi. Bu esa boshqaruv jarayonining samarali va qonuniy amalga oshirishini kafolatlaydi.

Fuqarolarning huquq va majburiyatlarini belgilash

Normalar fuqarolarning davlat va jamiyat oldidagi huquq va majburiyatlarini aniq belgilab beradi, bu esa ijtimoiy barqarorlik va adolatni ta'minlaydi.

Ijtimoiy munosabatlarni tartibga solish

Ma'muriy huquq normalari jamiyatda yuzaga keladigan ma'muriy-huquqiy munosabatlarni tartibga soladi, nizolarni oldini oladi va ularni hal qilishga yo'naltiriladi.

Huquqiy madaniyatni oshirish

Ushbu normalarga rioya qilish odatlari jamiyatda huquqiy madaniyatning shakllanishiga yordam beradi, qonun ustuvorligini ta'minlaydi.

Ma'muriy huquq normalarining manbalari

Ma'muriy huquq normalarining manbalari quyidagilardan iborat:

- Qonunlar: O'zbekiston Respublikasi Konstitutsiyasi, Ma'muriy javobgarlik to'g'risidagi kodeks va boshqa qonunlar.

- Prezident farmonlari va qarorlari: davlat boshqaruvidagi muhim huquqiy hujjatlar.

- Vazirlar Mahkamasi qarorlari: ijro hokimiyati faoliyatini tartibga soluvchi hujjatlar.

- Mahalliy hokimiyat organlari hujjatlari: hududiy boshqaruvni tartibga soluvchi me'yoriy hujjatlar.

Ma'muriy huquq normalarining amaliy ahamiyati

Amaliy hayotda ma'muriy huquq normalari:

- Davlat organlari va mansabdor shaxslar faoliyatining qonuniyligini ta'minlash.
- Fuqarolarning davlat organlari bilan munosabatlarini tartibga solish.
- Ijtimoiy tartibni saqlash va ma'muriy huquqbuzarliklarni oldini olish.
- Davlat boshqaruvi tizimida adolat va shaffoflikni ta'minlash.

Zamonaviy jamiyatda ma'muriy huquq normalarining dolzarbligi

Bugungi kunda ijtimoiy-iqtisodiy va siyosiy jarayonlarning murakkablashuvi ma'muriy huquq normalarining roli va ahamiyatini yanada oshirmoqda. Globalizatsiya, raqamli texnologiyalar va yangi boshqaruv shakllari davlat boshqaruvida yangi talablar qo'yimoqda. Shu sababli, ma'muriy huquq normalari doimiy ravishda takomillashib, zamon talablari bilan moslashishi zarur.

Xulosa

Ma'muriy huquq normalari davlat boshqaruvi tizimining asosiy huquqiy instrumenti bo'lib, ularning ahamiyati jamiyatda qonun ustuvorligini ta'minlash, ijtimoiy barqarorlikni saqlash va fuqarolarning huquqiy madaniyatini oshirishda namoyon bo'ladi. Zamonaviy sharoitlarda ma'muriy huquq normalarini takomillashtirish va ularni samarali tatbiq etish davlat boshqaruvining sifatini oshirishga xizmat qiladi.

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"THE USE OF IDIOMATIC EXPRESSIONS IN ENGLISH"

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Abstract

This scientific article explores the use of idiomatic expressions in the English language, highlighting their significance in everyday communication, literature, and language learning. Idioms are a vital part of English as they enrich the language, provide cultural insights, and pose challenges for non-native speakers. The article examines types of idioms, their syntactic and semantic features, functions in communication, and pedagogical approaches to teaching idiomatic expressions. Furthermore, it discusses the difficulties learners face and strategies to overcome them. The study emphasizes that mastering idiomatic expressions enhances language proficiency and intercultural competence.

Keywords: Idiomatic expressions, English language, semantics, pragmatics, language learning, figurative language, communication, cultural insight.

Introduction

Idiomatic expressions, commonly known as idioms, are phrases whose meanings cannot be deduced merely from the literal definitions of their constituent words. They are deeply embedded in the English language and culture, serving as a means to express ideas vividly and succinctly. The use of idioms enriches communication by adding color and nuance, making language more engaging and expressive. This article aims to analyze the characteristics, functions, and pedagogical implications of idiomatic expressions in English.

Definition and Characteristics of Idiomatic Expressions**What Are Idiomatic Expressions?**

An idiomatic expression is a fixed phrase with a figurative meaning different from the literal meanings of the individual words. For example, “kick the bucket” means “to die,” not literally to kick a bucket.

Characteristics

- Fixedness: Idioms tend to be fixed phrases with limited flexibility.
- Non-compositionality: The meaning cannot be inferred from the parts.
- Figurative meaning: They often convey metaphorical or symbolic meanings.
- Cultural specificity: Idioms reflect cultural norms and history.
- Frequency: Idioms are common in both spoken and written English.

Types of Idiomatic Expressions

Idioms can be classified into several types:

- Phrasal idioms: e.g., “break down,” “look after.”
- Compound idioms: e.g., “spill the beans.”
- Pure idioms: e.g., “kick the bucket.”
- Semi-idioms: e.g., “see the light” (partially literal).
- Proverbs and sayings: e.g., “A stitch in time saves nine.”

Semantic and Syntactic Features

Semantic Features

Idioms often use metaphor, metonymy, or other figurative devices. They carry connotative meanings and evoke imagery or cultural references.

Syntactic Features

While many idioms are fixed, some allow slight syntactic variation. For example, “spill the beans” can become “the beans were spilled.” However, word order is usually rigid.

Functions of Idiomatic Expressions in Communication

Idioms serve various communicative functions:

- Expressing emotion: e.g., “over the moon” to express happiness.
- Conveying cultural identity: Idioms reflect shared knowledge.
- Adding humor or emphasis: e.g., “barking up the wrong tree.”
- Facilitating concise expression: Idioms pack complex ideas into few words.
- Creating cohesion and style: Used in literature and speeches for effect.

Challenges in Learning and Using Idioms

Difficulties for Language Learners

- Non-literal meanings: Hard to infer without cultural knowledge.
- Fixedness: Limits flexibility and creativity.
- Context dependency: Meaning varies with context.
- Pronunciation and intonation: Affect comprehension.

Strategies to Overcome Challenges

- Contextual learning: Learning idioms in real-life contexts.
- Use of multimedia: Songs, movies, and dialogues.
- Practice and repetition: To internalize idioms.
- Teaching cultural background: To enhance understanding.

Pedagogical Approaches to Teaching Idiomatic Expressions

Explicit Instruction

Teaching idioms directly with explanations and examples.

Implicit Learning

Exposure through reading, listening, and conversation.

Task-Based Learning

Using idioms in communicative tasks and role-plays.

Use of Technology

Apps and online resources for idiom practice.

Idioms in Literature and Media

Idioms enrich literary texts by adding layers of meaning and cultural depth. Media such as films and TV shows popularize idioms, making them accessible to a wide audience.

The Role of Idioms in Developing Intercultural Competence

Understanding idioms is crucial for intercultural communication, as idioms often carry cultural nuances. Mastery of idioms aids in avoiding misunderstandings and fosters better integration in English-speaking environments.

Conclusion

Idiomatic expressions are indispensable components of the English language, contributing to its richness and expressiveness. Their mastery is essential for achieving fluency and cultural literacy. Despite challenges faced by learners, effective pedagogical strategies can facilitate idiom acquisition. Ultimately, idioms enhance communication by enabling speakers to convey complex ideas succinctly and colorfully.

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THE USE OF INTERROGATIVE PRONOUNS IN ENGLISH

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Annotation: This article explores the use of interrogative pronouns in the English language. It examines their forms, functions, and syntactical positions in interrogative sentences. The study highlights common errors learners make and provides examples of correct usage. The research aims to contribute to a better understanding of English question formation and enhance language teaching methodologies.

Keywords: *Interrogative pronouns, English grammar, question formation, syntax, language learning, wh-questions*

Introduction

Interrogative pronouns are essential elements in English grammar, used to ask questions and obtain information. They include words such as who, whom, whose, what, and which. Understanding their correct usage is crucial for effective communication, especially for learners of English as a second language. This article aims to analyze the forms and functions of interrogative pronouns and their role in constructing different types of questions.

Definition and Classification of Interrogative Pronouns

Interrogative pronouns are words that introduce direct or indirect questions. Unlike other pronouns, they specifically inquire about people, things, possession, or choice. The main interrogative pronouns in English are:

- Who — refers to people (subject)
- Whom — refers to people (object)
- Whose — indicates possession
- What — refers to things or information
- Which — indicates choice among options

Forms and Functions

Each interrogative pronoun serves different grammatical functions:

- Subject function: Who often acts as the subject of the question.
 - Example: Who is coming to the party?
- Object function: Whom is used as an object, though in modern English who often replaces it in spoken language.
 - Example: Whom did you invite?
- Possessive function: Whose shows ownership.

- Example: Whose book is this?
- Choice and specification: Which asks about a choice within a known set.
 - Example: Which color do you prefer?
- General inquiry: What asks for information about things or concepts.
 - Example: What is your name?

Interrogative Pronouns in Question Formation

Interrogative pronouns are typically placed at the beginning of a question. Their placement and the auxiliary verbs used depend on the type of question:

- Yes/No questions do not use interrogative pronouns.
- Wh-questions begin with an interrogative pronoun followed by auxiliary verbs and the subject.
 - Example: What are you doing?

Common Errors and Challenges

Learners often confuse who and whom, misuse which and what, or omit auxiliary verbs in wh-questions. For example, Whom is coming? is incorrect since whom cannot be the subject. The article discusses these common pitfalls and suggests pedagogical strategies.

The Role of Intonation and Context

In spoken English, intonation can affect the interpretation of questions with interrogative pronouns. Rising intonation typically signals a question, and context helps clarify ambiguity.

Indirect Questions with Interrogative Pronouns

Interrogative pronouns are also used in indirect questions embedded within statements or other questions.

- Example: I wonder who is at the door.

Conclusion

Interrogative pronouns play a vital role in English question formation, facilitating the acquisition of information. Mastery of their forms and functions significantly improves learners' communicative competence. Future research could explore their usage in different dialects and registers.

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MUTAXASSIS KADRLAR TAYYORLASHDA KOMPETENSIYALARNING TA'RIFI VA ULARNING TURLARI

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Annotatsiya. Mazkur maqolada mutaxassis kadrlar tayyorlashda kompetensiyalarning turlari, ularning kelib chiqish ta'rixi va Soft skill va Hard skill ko'nikmalarning asosiy xususiyatlari haqida so'z boradi.

Tayanch so'z va iboralar: kompetensiyalar, texnologiya, ijodkorlik, Soft skill va Hard skill ko'nikmalar.

Аннотация. В данной статье говорится о видах компетенций в подготовке кадров специалистов, истории их возникновения и основных характеристиках мягких навыков и жестких навыков.

Ключевые слова : компетенции, технологии, креативность, мягкие навыки и жесткие навыки.

Annotation. This article talks about the types of competencies in the training of specialist personnel, the history of their origin and the main characteristics of soft skills and hard skills.

Key words: competencies, technology, creativity, soft skills and hard skills.

Hozirgi kunga qadar ko'pchilik kishilar kelajak muvaffaqiyatlarini o'zining kasbiy bilim, ko'nikma va mahoratiga bog'laydi va bu tabiiy nuqtai nazardan to'g'ri hisoblanadi. O'z ishini ustasigina yuksak muvaffaqiyatlarga erishishi mumkin. Lekin kasbiy jihatdan va umuman muvaffaqiyatli bo'lishning yana bir tomoni borki – bu yosh muhandislarning amaliy (soft/yumshoq) ko'nikmalarga ega bo'lishidir.

Bizga ma'lumki, kompetensiyalar - bu shaxsning shaxsiy va ishbilarmonlik fazilatlarini, ishni samarali bajarish va yuqori natijalarga erishish uchun zarur bo'lgan bilim, ko'nikma va malakalar yig'indisidir.

Hozirgi vaqtda Soft skills (yumshoq) va hard skills (qattiq) kompetensiyalar deb ataladigan yumshoq ko'nikmalar va qattiq ko'nikmalarni baholash odatiy holdir.

Soft skill va Hard skill nima ma'noni bildiradi ?

Soft skills — inglizchadan to'g'ridan to'g'ri tarjimasi “yumshoq ko'nikmalar” degan ma'noni bildiradi. Amaliyotda esa, yumshoq ko'nikmalar insoniy ko'nikmalar yoki shaxslararo ko'nikmalar sifatida ham ishlatiladi.

Soft skill uchun misollar: Bu oddiy kundalik hayotimizda odamlar bilan muloqot qilish uchun foydalanadigan xatti-harakatlarimizning jamisidir.

Soft skills (yumshoq ko'nikmalar) - bu insonning xarakteriga bog'liq bo'lgan va

hayotiy tajriba orqali erishiladigan shaxsiy fazilatlaridir. Bunday universal kompetensiyalarni miqdoriy jihatdan o'lchash qiyin. Ular amalda ma'lum bir ishning o'ziga xos xususiyatlariga bog'liq emas, lekin ular karerani shakllantirishga yordam beradi. Bularga intellektual, ijtimoiy va irodaviy kompetensiyalar kiradi:

- tanqidiy fikrlash;
- qat'iylik;
- tahliliy ko'nikmalar;
- yetakchilik;
- aloqa maxorati;
- ijodkorlik;
- jamoada ishlash qobiliyati;
- ko'p vazifalarni bajarish;
- aniqlik va h.k.

Masalan, kotib lavozimiga da'vogar uchun muloqot va ko'p vazifalilik kabi Soft skills (yumshoq) kompetensiyalar, dizayner uchun - ijodkorlik va tanqidiy fikrlash, loyiha menejeri uchun - jamoada ishlash qobiliyati, qat'iyatlilik va tahliliy qobiliyatlar birinchi o'ringa chiqadi.

Hard skills — ingliz tilidan “qattiq ko'nikmalar” deb tarjima qilinadi.

Qattiq ko'nikmalar — inson tomonidan o'qib rivojlantiriladigan texnik bilimlar yoki tajriba orqali shakllanadigan qobiliyatlar hisoblanadi[1].

Hard -skills	Soft-skills
Texnik konikmalar	Kommunikativ qobiliyatlar
Jihozlar bilan ishlay olishi	Shaxslar bilan ishlay olishi
Jarayonlar bilan boshqarish	Munosabatlarni boshqara olishi
Tahlil va raqamlar	Sezgilar va tajriba
Texnologiya	San'at
Reglamentlar	Intuisiya
Standartlar	San'at

Hard skills (qattiq) ko'nikmalar - bu muayyan ishni bajarish uchun zarur bo'lgan kasbiy ko'mpetensiyalardir. Ushbu ko'nikmalar kollejlarda, institutlarda, kurslarda o'rgatiladi va ularni imtihon o'tkazish orqali o'lchash mumkin.

Eng oddiy qiyin ko'nikmalarga yozish va o'qish qobiliyati kiradi; bu shuningdek, chet tilini, mahsulot, ish dasturi, standartlar va qoidalarni bilish, mashina haydash va hokazolarni o'z ichiga oladi.

Masalan, frontend dasturchi uchun qattiq ko'nikmalar quyidagicha ko'rinadi: HTML va CSS-ni bilish, JavaScript-ni bilish, ramkalar va kutubxonalarni tushunish,

SQL so'rovlarini yozish va h.k.

Malaka	Namoyish eta olishi
Ishlab chiqarish uskunalarini boshqarish qobiliyati	Masalan, tikuv mashinasida yubka tikish yoki stanokda buyum qism yaratish
O'z kasbiy mutaxassisligi bo'yicha chet tilini bilish	Kundalik muloqot uchun chet tilini bilish hali mustahkam mahorat emas. Ammo agar mutaxassis o'z sohasi bo'yicha ingliz tilida gapirsa yoki geolog o'z sohasida maxsus atamalarni bilsa, bu boshqa masala
Ixtisoslashtirilgan dasturlar bilan ishlash qobiliyati - maket, taqdimotlar yaratish	Maqola muallifi yoki yozuvchi qo'shimcha ravishda mahsulotni oldindan chop etishi va uning reklamasini tayyorlashi mumkin
O'n barmoq usulida teginish orqali yozish	Odatda, hamma "bir barmoq" bilan yozishi mumkin. Qattiq mahorat - bu texnologiya va maxsus tayyorgarlik natijasi
Matematik masalalarni yechish	Olim yoki tadqiqotchi uchun bu kasbning bir qismidir
Tahlil qilish uchun qon olish qobiliyati	Hamshiraning mustahkam mahoratiga misol, lekin, masalan, shifokordan bu mahorat talab etilmaydi [4].

Shaxs kompetensiyalarini qanday metodlar orqali aniqlash mumkin?

Shaxslarning shaxsiy va kasbiy fazilatlari to'g'risida eng ob'ektiv fikrni beradigan xodimlarning malakasini baholash usullariga batafsil to'xtalib o'tamiz:

1. Test - xodimlar va arizachilarni baholashning eng oddiy usuli. Amalda psixologik va professional testlardan foydalaniladi. Birinchisi, shaxsiy fazilatlarni aniqlashga imkon beradi - yumshoq ko'nikmalar, ikkinchisi - professional, qattiq mahorat. Usulning asosiy afzalligi - masofadan turib test o'tkazish imkoniyati.

2. Intervyu – savol-javob shaklidagi og'zaki suhbat. Strukturasiz bo'lishi mumkin: erkin shaklda o'tkaziladi, savollarga hissiy munosabatni aniqlash imkonini beradi. Strukturaviy intervyu STAR modelidan foydalanishni o'z ichiga oladi: S (vaziyat) - vaziyat, T (vazifa) - vazifa, A (harakat) - suhbatdoshning harakatlari, R (natija) - natija. O'tgan kasbiy amaliyotda sodir bo'lgan voqeani esga olish taklif etiladi va arizachining harakatlariga 10 balli shkala bo'yicha baho beriladi.

3. Savol berish - savollar to'plami bilan standart shakl to'ldiriladi, undan so'ng so'rov o'tkazilayotgan shaxsda o'ziga xos xususiyatlarning yo'qligi yoki mavjudligi tahlil qilinadi. Metodologiyani afzalligi shundaki, u vaqt va byudjet nuqtai nazaridan tejamkor, kamchiliklari - past ma'lumot mazmuni va sub'ektivlik.

4. Sertifikatlash - xodimning malakasining egallab turgan lavozimiga yoki u murojaat etayotgan joyiga muvofiqlik darajasini aniqlash. Sertifikatlash tartibi kompaniya rahbariyati tomonidan tasdiqlangan hujjatlarda tavsiflanishi kerak. Qoida

tariqasida, u imtihon va suhbat shaklida amalga oshiriladi. Sertifikatlash natijalariga ko‘ra, xodimni lavozimga ko‘tarish, ish haqini oshirish yoki kamaytirish yoki ishdan bo‘shatish to‘g‘risida qaror qabul qilinishi mumkin.

5. Ekspertlar tomonidan baholash - o‘z tajribasiga tayangan holda, xodimlarning xususiyatlarini tahlil qiladigan va xulosa chiqaradigan mutaxassislarni jalb qilishni nazarda tutadi. Ichki baholash bevosita rahbar va xodimni yaxshi biladigan hamkasblarni jalb qilgan holda va tashqi kadrlar bo‘yicha mutaxassislar ishtirokida tashqi baholash mumkin.

6. Baholash markazi - nostandart sharoitlarda xodimlarning xatti-harakatlarini baholash uchun bahsli ish vaziyatlarini simulyatsiya qilish bilan biznes o‘yinini o‘tkazish. Baholar ekspert komissiyasi tomonidan beriladi. Bundan tashqari, baholash markazi suhbatlar va testlarni o‘z ichiga olishi mumkin. Integratsiyalashgan yondashuv bundan mustasno hisoblanadi.

7. “180, 360, 540 daraja” usullari - real vaziyatlarda xatti-harakatlarni baholash:

- “180 daraja” bahosi – xodim va menejerning so‘rovi.
- “360 daraja” baholash - xodim va uning biznes muhiti: menejer, qo‘l ostidagilar, hamkasblar haqida so‘rov.
- “540 daraja” baholash – “360 daraja” + mijozlar va yetkazib beruvchilarning so‘rovi.

Bakavrlar tayyorlashda ko‘nikmalarni rivojlantirish uchun maxsus kurslar, ichki treninglar tashkil qilish va joylarda o‘rganish amaliyoti orqali bu ko‘nikmalarni rivojlantirish maqsadga muvofiq hisoblanadi.

Shunday qilib, mutaxassis kadrlar tayyorlashda bu ko‘nikmalarning har birinig o‘z o‘rni bo‘lib, har ikkala kompetensiyalarni rivojlantirish yetuk kadrlarni tayyorlashga xizmat qiladi.

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КАК ОБРАЗОВАНИЕ СТРОИТ НАШЕ БУДУЩЕЕ

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Статья рассматривает ключевую роль образования в формировании будущего общества. Освещаются современные тенденции в сфере образования, включая цифровизацию, развитие гибких навыков и устойчивое развитие. Подчеркивается, что современное образование должно не только передавать знания, но и формировать личность, способную к критическому мышлению, сотрудничеству и адаптации к вызовам XXI века.

Ключевые слова: образование, будущее, технологии, цифровизация, критическое мышление, устойчивое развитие, софт-навыки.

The article explores the crucial role of education in shaping the future of society. It highlights current trends in the education sector, such as digitalization, the development of soft skills, and the focus on sustainable development. The author emphasizes that modern education should not only transmit knowledge but also nurture individuals capable of critical thinking, collaboration, and adaptation to the challenges of the 21st century.

Keywords: education, future, technology, digitalization, critical thinking, sustainable development, soft skills.

ВВЕДЕНИЕ.

Образование всегда играло ключевую роль в развитии общества. Оно служило не только средством передачи знаний и навыков от поколения к поколению, но и инструментом формирования ценностей, культуры и идентичности. В разные исторические эпохи именно образование определяло направление прогресса, способствовало развитию науки, экономики, искусства и социальных институтов. В условиях стремительных изменений в XXI веке, вызванных цифровыми технологиями, глобализацией и экологическими вызовами, значение образования становится особенно актуальным. Сегодня оно

должно не только адаптироваться к новым реалиям, но и опережать их, закладывая основы для устойчивого, справедливого и инновационного будущего. Сегодня, в условиях стремительных технологических и социальных изменений, значение образования возрастает как никогда ранее. Оно становится не только инструментом передачи знаний, но и основой формирования мышления, навыков и ценностей, необходимых для построения устойчивого и справедливого будущего.

ЦИФРОВИЗАЦИЯ И ТЕХНОЛОГИИ

Современные образовательные технологии коренным образом меняют подход к обучению, трансформируя традиционные методы преподавания в интерактивные, персонализированные и гибкие процессы. Благодаря внедрению цифровых платформ, искусственного интеллекта, виртуальной и дополненной реальности, учащиеся получают возможность осваивать знания в собственном темпе, взаимодействовать с материалом более эффективно и применять полученные навыки в реальных жизненных ситуациях.

Современные образовательные технологии коренным образом меняют подход к обучению, трансформируя традиционные методы преподавания в интерактивные, персонализированные и гибкие процессы. Благодаря внедрению цифровых платформ, таких как Coursera, Khan Academy и Moodle, учащиеся получают возможность осваивать материалы в собственном темпе и выбирать наиболее удобные формы обучения. Искусственный интеллект применяется для адаптивного обучения, подстраивая задания под уровень знаний и стиль восприятия каждого ученика. Виртуальная и дополненная реальность создают иммерсивные образовательные среды, которые повышают вовлечённость и понимание сложных концепций - например, медицинские студенты могут практиковаться на виртуальных симуляторах, а школьники - изучать географию через интерактивные 3D-карты. Исследования показывают, что такие технологии значительно повышают мотивацию учащихся и улучшают качество усвоения материала..

Онлайн-курсы, платформы дистанционного образования, искусственный интеллект и адаптивные системы обучения позволяют сделать образование доступным, персонализированным и гибким. Благодаря этим инструментам учащиеся могут учиться в собственном темпе, получать мгновенную обратную связь и осваивать материалы в интерактивной форме.

ЦИФРОВИЗАЦИЯ ОБРАЗОВАНИЯ: ШАГ В БУДУЩЕЕ

Современные технологии действительно кардинально изменили образование, сделав его более доступным, интерактивным и персонализированным. Вот несколько ключевых аспектов этих изменений:

- дистанционное обучение и онлайн-курсы. Благодаря интернету и платформам типа Coursera, Udey, Khan Academy, студенты могут учиться из любой точки мира в удобное для себя время;
- интерактивные образовательные технологии. Использование виртуальной и дополненной реальности, симуляторов и образовательных игр помогает лучше усваивать материал, делая обучение более увлекательным и наглядным;
- персонализация обучения. Искусственный интеллект и адаптивные платформы подстраивают учебный процесс под потребности и уровень каждого ученика;
- образовательные мобильные приложения. Позволяют учиться «на ходу», повышая гибкость и доступность образования;
- коллаборативные технологии. Онлайн-форумы, видеоконференции и совместные проекты развивают навыки командной работы и коммуникации, даже если участники находятся в разных странах.

ДИСТАНЦИОННОЕ ОБУЧЕНИЕ. ЭТО ПРОЦЕСС ОБУЧЕНИЯ, ПРИ КОТОРОМ УЧЕНИК И ПРЕПОДАВАТЕЛЬ НАХОДЯТСЯ В РАЗНЫХ МЕСТАХ, А СВЯЗЬ МЕЖДУ НИМИ ОБЕСПЕЧИВАЕТСЯ ЧЕРЕЗ ИНТЕРНЕТ И ЦИФРОВЫЕ ТЕХНОЛОГИИ.

Основные преимущества: Доступность. Учиться можно из любой точки мира, где есть интернет. Это особенно важно для людей из удалённых или малонаселённых регионов. **Гибкость.** Можно выбирать удобное время для занятий, что позволяет совмещать учёбу с работой или другими делами. **Широкий выбор курсов.** От профильных вузовских программ до курсов по хобби и новым навыкам. **Снижение затрат.** Меньше расходов на транспорт, проживание и печатные материалы.

Какие технологии используются? Видеоконференции (Zoom, Microsoft Teams, Google Meet). Платформы для онлайн-обучения (Moodle, Blackboard). Электронные библиотеки и базы данных. Вебинары и интерактивные лекции. Форумы и чаты для общения и обсуждения

Недостатки и вызовы: Требование к технической оснащённости и стабильному интернету. Необходимость высокой самодисциплины у учеников. Меньше живого общения и практических занятий.

Онлайн-платформы, виртуальные классы, искусственный интеллект и технологии дополненной реальности открывают новые горизонты для преподавания и обучения. Учебный процесс становится более гибким и персонализированным: учащиеся могут осваивать материал в удобном темпе, получать мгновенную обратную связь и выбирать индивидуальные траектории развития. Вместе с тем, цифровизация ставит перед обществом новые задачи:

обеспечение равного доступа к технологиям, подготовка учителей к работе в цифровой среде и защита личных данных обучающихся.

ГИБКИЕ НАВЫКИ: ВАЖНОСТЬ ЧЕЛОВЕЧЕСКОГО КАПИТАЛА

В условиях постоянных перемен и неопределённости на первый план выходят так называемые гибкие навыки (soft skills): критическое мышление, креативность, коммуникация, сотрудничество, эмоциональный интеллект. Именно эти качества помогают человеку не просто выживать в быстро меняющемся мире, а успешно адаптироваться, решать комплексные задачи и принимать ответственные решения. Современное образование должно не только передавать знания, но и воспитывать личность, способную к саморегуляции, лидерству и этичному поведению.

В современных условиях, когда технологии быстро меняются, а профессии трансформируются, гибкие навыки - или soft skills - становятся ключевыми для успешной адаптации и развития. Вот несколько самых важных из них:

- критическое мышление: способность анализировать информацию, ставить под сомнение полученные данные и делать обоснованные выводы;
- коммуникация: умение ясно и эффективно передавать свои мысли, слушать и взаимодействовать с другими;
- эмоциональный интеллект: понимание и управление своими эмоциями, а также эмпатия к чувствам других;
- адаптивность: готовность быстро менять подходы и учиться новому в изменяющихся условиях;
- работа в команде: способность сотрудничать и достигать целей вместе с другими, учитывая разные мнения и навыки;
- управление временем: эффективное планирование и расстановка приоритетов, чтобы успевать и не перегореть.

Эти навыки дополняют технические знания и помогают людям быть конкурентоспособными, независимо от профессии. Их развитие становится одним из важных направлений современного образования.

РАЗВИТИЕ SOFT SKILLS В ШКОЛАХ И ВУЗАХ

1. Проектное обучение и групповые задания.

Ученики и студенты работают над совместными проектами, где нужно договариваться, распределять роли, решать конфликты и находить творческие решения. Это помогает развивать коммуникацию, командную работу и критическое мышление.

2. Дебаты и дискуссии.

На уроках или в рамках факультативов проводят обсуждения и дебаты, где обучающиеся учатся аргументировать свою позицию, слушать оппонентов и уважать чужое мнение.

3. **Курсы и тренинги по эмоциональному интеллекту и лидерству**

Включают упражнения на самосознание, управление эмоциями и развитие эмпатии. Такие тренинги часто проходят в формате ролевых игр и групповых обсуждений.

4. **Использование цифровых инструментов.**

Платформы для совместной работы (Google Docs, Trello) помогают учиться планировать время и взаимодействовать удалённо.

РАЗВИТИЕ SOFT SKILLS НА РАБОТЕ

1. **Корпоративное обучение и воркшопы.**

Компании проводят тренинги по коммуникации, управлению конфликтами, лидерству и эмоциональному интеллекту.

2. **Менторство и коучинг.**

Опытные сотрудники помогают новичкам развивать навыки через обратную связь и поддержку.

3. **Работа в междисциплинарных командах.**

Совместные проекты с участием специалистов из разных областей требуют гибкости мышления и эффективного общения.

4. **Обратная связь и самооценка.**

Регулярные оценки и самоанализ помогают понимать свои сильные и слабые стороны и работать над развитием.

ОБРАЗОВАНИЕ ДЛЯ УСТОЙЧИВОГО РАЗВИТИЯ

Одной из важнейших задач образования сегодня является воспитание ответственности за будущее планеты. Концепция образования в интересах устойчивого развития включает в себя экологическое мышление, уважение к культурному разнообразию, понимание глобальных взаимосвязей и формирование гражданской позиции. Школа и университеты становятся пространством, где учащиеся учатся не только понимать мир, но и влиять на него, участвуя в решении таких проблем, как изменение климата, неравенство и бедность.

Воспитание ответственности за будущее планеты - одна из ключевых задач современного образования, ведь именно молодое поколение будет решать экологические и социальные проблемы завтрашнего дня.

ПОЧЕМУ ЭТО ВАЖНО?

• **Экологические вызовы растут:** изменение климата, загрязнение окружающей среды, исчезновение видов требуют осознанного и ответственного отношения каждого человека.

• **Формирование ценностей:** школа и университеты помогают понять, как наши действия влияют на природу и общество.

• **Подготовка к устойчивому развитию:** важно научить будущих специалистов создавать технологии и решения, которые минимизируют вред окружающей среде.

КАК ЭТО РЕАЛИЗУЕТСЯ В ОБРАЗОВАНИИ?

1. Экологическое образование и просвещение.

Введение предметов и курсов, посвящённых экологии, устойчивому развитию и «зелёным» технологиям. Ученики изучают, как устроена природа, почему важно беречь ресурсы, как уменьшить своё экологическое воздействие.

2. Проекты и инициативы.

Организация акций по уборке территорий, создание школьных садов и экопарков, участие в международных экологических программах.

3. Интеграция темы устойчивого развития в другие дисциплины.

Экологическая тематика появляется в истории, географии, химии, экономике — показывая междисциплинарные связи.

4. Развитие критического мышления.

Обучающиеся учатся анализировать экологическую информацию, отличать факты от мифов, делать обоснованные выводы и предлагать решения.

5. Формирование ответственного поведения.

Прививается привычка к рациональному использованию ресурсов, раздельному сбору отходов, экономии энергии.

КРИТИЧЕСКОЕ МЫШЛЕНИЕ И СОФТ-НАВЫКИ

Помимо академических знаний, всё большую ценность приобретают так называемые «гибкие навыки»: критическое мышление, креативность, способность к сотрудничеству и коммуникации. Именно эти качества позволяют человеку адаптироваться к постоянно меняющемуся миру, принимать ответственные решения и эффективно взаимодействовать в команде.

В современном мире, где информация быстро устаревает, а задачи становятся всё более комплексными, **гибкие навыки (soft skills)** играют ключевую роль в успешной жизни и карьере.

Вот почему именно эти навыки так ценятся:

• **Критическое мышление** помогает не просто принимать информацию, а анализировать её, выявлять скрытые причины и делать взвешенные решения.

• **Креативность** - это умение находить нестандартные решения, создавать новое и адаптироваться к изменениям.

• **Способность к сотрудничеству** - умение работать в команде, учитывать мнения других и достигать общих целей.

• **Коммуникация** - эффективное выражение своих мыслей и понимание собеседника, что особенно важно в многообразных коллективах и международном взаимодействии.

КАК РАЗВИВАТЬ ЭТИ НАВЫКИ?

- **Проектная деятельность и групповые задания** — где приходится договариваться и работать вместе.
- **Рольевые игры и дебаты** — для тренировки аргументации и понимания разных точек зрения.
- **Творческие мастерские и хакатоны** — стимулируют генерировать идеи и воплощать их.
- **Обратная связь и рефлексия** — помогают понять свои сильные стороны и области для роста.

Многие образовательные программы сегодня делают упор именно на развитие таких навыков, потому что технические знания без умения ими эффективно пользоваться часто оказываются недостаточными.

ОБРАЗОВАНИЕ КАК ФАКТОР УСТОЙЧИВОГО РАЗВИТИЯ

Образование — один из ключевых факторов устойчивого развития. Оно способствует социальной мобильности, борьбе с бедностью, улучшению здоровья и равенству возможностей. Образованные граждане более осведомлены о глобальных проблемах и способны принимать участие в их решении - от изменения климата до социальной справедливости.

Образование действительно играет центральную роль в достижении устойчивого развития. Оно не только передаёт знания, но и формирует ценности, навыки и ответственность, необходимые для сохранения ресурсов планеты и улучшения качества жизни.

ПОЧЕМУ ОБРАЗОВАНИЕ - КЛЮЧЕВОЙ ФАКТОР УСТОЙЧИВОГО РАЗВИТИЯ?

1. **Формирование осознанности и ответственности.**

Образование помогает людям понять последствия своих действий для общества и окружающей среды, что способствует более ответственному поведению.

2. **Развитие навыков для устойчивого будущего.**

Выпускники с навыками критического мышления, инноваций и сотрудничества лучше подготовлены для решения комплексных проблем, таких как изменение климата, бедность и неравенство.

3. **Продвижение равенства и инклюзии.**

Качественное образование способствует сокращению социальных и экономических разрывов, обеспечивая равные возможности для всех.

4. **Поддержка научных и технологических инноваций.**

Образование стимулирует развитие технологий, которые помогают использовать ресурсы рационально и создавать «зелёные» решения.

КАК ОБРАЗОВАНИЕ СПОСОБСТВУЕТ УСТОЙЧИВОМУ РАЗВИТИЮ?

- Включение тем устойчивого развития в учебные программы.
- Реализация проектов и инициатив, направленных на охрану окружающей среды и социальную справедливость.
- Воспитание навыков сотрудничества и глобального мышления.

ЗАКЛЮЧЕНИЕ

Таким образом, образование - это не просто система знаний, а важнейший инструмент преобразования общества. От того, как мы организуем обучение сегодня, зависит, каким будет наш завтрашний день. Инвестируя в качественное, доступное и инновационное образование, мы создаём фундамент для прогрессивного, устойчивого и справедливого будущего.

Будущее, в котором мы хотим жить, во многом зависит от того, какое образование мы создаём сегодня. Инвестируя в образовательные системы, мы не только формируем будущие поколения, но и закладываем фундамент для мирного, устойчивого и справедливого мира.

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КАК ПОМОЧЬ ПЕДАГОГУ: ПУТИ ПОДДЕРЖКИ И РАЗВИТИЯ В СОВРЕМЕННОМ ОБРАЗОВАТЕЛЬНОМ ПРОЦЕССЕ

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В статье рассматриваются основные проблемы, с которыми сталкиваются педагоги в современном образовательном процессе, а также методы и формы поддержки, способствующие их профессиональному развитию и эмоциональному благополучию. Подчеркивается важность системной помощи со стороны администрации, коллег и родителей, а также роли корпоративной культуры в школе.

Ключевые слова: педагог, поддержка учителей, профессиональное развитие, эмоциональное выгорание, образовательный процесс, психологическая поддержка, инновационные технологии.

The article examines the main challenges faced by teachers in the modern educational process and explores methods and forms of support that promote their professional development and emotional well-being. The importance of systemic assistance from administration, colleagues, and parents, as well as the role of corporate culture within the school, is emphasized.

Keywords: teacher, teacher support, professional development, burnout, educational process, psychological support, innovative technologies.

Введение

Педагог - ключевая фигура в системе образования, от профессионализма и эмоционального состояния которого во многом зависит качество обучения и воспитания учащихся. Однако в последние годы учителя сталкиваются с возрастающими трудностями: перегрузкой, стрессом, быстрыми изменениями в образовательных требованиях и цифровизацией. В таких условиях крайне важна своевременная и всесторонняя поддержка педагогов, способствующая их профессиональному и личностному развитию, а также сохранению здоровья и мотивации.

Очень важно своевременно и комплексно оказывать поддержку педагогам, что способствует их профессиональному и личностному росту, а также поддержанию здоровья и высокого уровня мотивации. Своевременная и всесторонняя помощь педагогам играет ключевую роль в их профессиональном развитии, личностном становлении, а также в сохранении здоровья и мотивации. Обеспечение педагогам своевременной и комплексной поддержки является необходимым условием для их профессионального и личного развития, а также для поддержания здоровья и мотивационного состояния.

Основные проблемы, с которыми сталкиваются педагоги.

1. ПРОФЕССИОНАЛЬНАЯ ПЕРЕГРУЗКА

Учителя часто испытывают значительную нагрузку, связанную не только с проведением уроков, но и с подготовкой материалов, проверкой работ, ведением документации и участием в административных мероприятиях. Такая перегрузка снижает эффективность работы и увеличивает риск усталости.

2. ЭМОЦИОНАЛЬНОЕ ВЫГОРАНИЕ

Постоянное напряжение и высокий уровень ответственности могут привести к эмоциональному выгоранию — состоянию хронической усталости, снижения мотивации и утраты интереса к профессии. Это негативно сказывается как на самом педагоге, так и на учебном процессе.

3. НЕДОСТАТОК ПРОФЕССИОНАЛЬНОЙ ПОДДЕРЖКИ

Отсутствие эффективной системы наставничества и обратной связи приводит к чувству изоляции и неуверенности у многих педагогов, особенно начинающих специалистов. Недостаток обмена опытом затрудняет профессиональный рост.

4. ТЕХНОЛОГИЧЕСКИЕ ВЫЗОВЫ

Современные образовательные технологии требуют от учителей освоения новых цифровых инструментов и методов обучения. Необходимость постоянного обучения и адаптации вызывает дополнительный стресс и затраты времени.

5. НИЗКОЕ МАТЕРИАЛЬНОЕ И МОРАЛЬНОЕ СТИМУЛИРОВАНИЕ

Многие педагоги сталкиваются с недостаточным уровнем оплаты труда и недостатком признания за свой труд, что снижает мотивацию и повышает текучесть кадров.

6. СОЦИАЛЬНЫЕ И ПОВЕДЕНЧЕСКИЕ ПРОБЛЕМЫ УЧЕНИКОВ

Педагоги нередко сталкиваются с трудностями в управлении классом, агрессией, низкой мотивацией учеников, что требует дополнительных педагогических и психологических компетенций.

Ещё основные проблемы, с которыми сталкиваются педагоги. Ключевые трудности, возникающие в работе педагогов. Основные вызовы в деятельности педагогов. Проблемы, характерные для современной педагогической профессии. Главные сложности, с которыми сталкиваются учителя. Трудности, присущие работе педагогов в современных условиях

Рекомендации по решению основных проблем педагогов

1. СНИЖЕНИЕ ПРОФЕССИОНАЛЬНОЙ ПЕРЕГРУЗКИ

- Перераспределение административных задач и внедрение автоматизированных систем учета и отчетности.
- Оптимизация учебных программ и сокращение излишней документации.
- Введение разумных норм нагрузки и обеспечение времени для планирования и подготовки.

2. ПРОФИЛАКТИКА И БОРЬБА С ЭМОЦИОНАЛЬНЫМ ВЫГОРАНИЕМ

- Организация регулярных тренингов по управлению стрессом и развитию эмоциональной устойчивости.
- Внедрение программ психологической поддержки и консультаций.
- Поощрение здорового образа жизни, проведение спортивных и творческих мероприятий для педагогов.

3. ПОВЫШЕНИЕ УРОВНЯ ПРОФЕССИОНАЛЬНОЙ ПОДДЕРЖКИ

- Создание системы наставничества для начинающих учителей.
- Регулярные методические объединения и семинары для обмена опытом.
- Обеспечение обратной связи и конструктивной критики со стороны администрации.

4. ОСВОЕНИЕ И ВНЕДРЕНИЕ ОБРАЗОВАТЕЛЬНЫХ ТЕХНОЛОГИЙ

- Организация курсов повышения цифровой грамотности.
- Предоставление доступа к современному оборудованию и программному обеспечению.
- Поддержка инновационных проектов и мотивация к применению новых методик.

5. УЛУЧШЕНИЕ МАТЕРИАЛЬНОГО И МОРАЛЬНОГО СТИМУЛИРОВАНИЯ

- Пересмотр системы оплаты труда с учетом результатов работы и квалификации.
- Внедрение нематериальных поощрений: грамоты, премии, возможности профессионального роста.
- Признание заслуг педагогов на уровне администрации и общественности.

6. РАБОТА С СОЦИАЛЬНЫМИ И ПОВЕДЕНЧЕСКИМИ ПРОБЛЕМАМИ УЧЕНИКОВ

- Повышение квалификации педагогов в области психологии и конфликтологии.
- Введение программ профилактики буллинга и агрессии в школе.
- Организация сотрудничества с родителями и психологами для комплексного подхода.

Практические методы поддержки педагогов

- **Психологические тренинги и супервизии:** регулярные встречи с психологами для обсуждения сложных ситуаций и эмоциональной разгрузки.
- **Профессиональные сообщества и клубы:** создание внутришкольных и внешних групп для обмена опытом и поддержки.
- **Гибкий график работы и возможность дистанционной занятости:** для снижения стресса и повышения баланса между работой и личной жизнью.
- **Ресурсные центры и методические кабинеты:** обеспечение педагогов необходимыми материалами и методическими рекомендациями.
- **Внедрение корпоративной культуры взаимопомощи:** организация совместных мероприятий, тимбилдингов, формирование доверительных отношений в коллективе.
- **Использование цифровых платформ для коммуникации и обмена знаниями:** например, корпоративные мессенджеры, платформы для онлайн-обучения.

Рекомендации по решению проблем педагогов и практические методы поддержки с примерами успешных кейсов

Рекомендации по решению основных проблем педагогов

1. СНИЖЕНИЕ ПРОФЕССИОНАЛЬНОЙ ПЕРЕГРУЗКИ

• **Пример:** В московской школе №1570 была внедрена система электронного документооборота, которая сократила время учителей на ведение отчетности на 30%.

• **Рекомендация:** Внедрение подобных систем и четкое распределение обязанностей среди сотрудников администрации позволяют уменьшить бумажную волокиту и освободить время для педагогической работы.

2. ПРОФИЛАКТИКА И БОРЬБА С ЭМОЦИОНАЛЬНЫМ ВЫГОРАНИЕМ

• **Пример:** В одном из региональных лицеев организовали ежемесячные психологические тренинги и групповые занятия по релаксации, что снизило количество случаев выгорания среди педагогов на 20%.

• **Рекомендация:** Регулярное психологическое сопровождение и формирование поддержки внутри коллектива важны для сохранения эмоционального здоровья учителей.

3. ПОВЫШЕНИЕ УРОВНЯ ПРОФЕССИОНАЛЬНОЙ ПОДДЕРЖКИ

• **Пример:** В Санкт-Петербурге действует программа наставничества, где опытные педагоги сопровождают молодых учителей в первые годы работы, что улучшило адаптацию и повысило качество преподавания.

• **Рекомендация:** Организация системы наставничества и регулярных методических объединений способствует обмену опытом и профессиональному росту.

4. ОСВОЕНИЕ И ВНЕДРЕНИЕ ОБРАЗОВАТЕЛЬНЫХ ТЕХНОЛОГИЙ

• **Пример:** В Новосибирской области в нескольких школах была проведена серия мастер-классов по использованию интерактивных досок и онлайн-платформ, что повысило цифровую компетентность педагогов и разнообразило уроки.

• **Рекомендация:** Курсы повышения квалификации и техническая поддержка — залог успешной цифровизации образования.

5. УЛУЧШЕНИЕ МАТЕРИАЛЬНОГО И МОРАЛЬНОГО СТИМУЛИРОВАНИЯ

• **Пример:** В одном из регионов была внедрена система бонусов за успехи в преподавании и участие в конкурсах, что повысило мотивацию и снизило текучесть кадров.

• **Рекомендация:** Необходимо создавать прозрачные и справедливые системы вознаграждения, учитывающие не только зарплату, но и нематериальные поощрения.

6. РАБОТА С СОЦИАЛЬНЫМИ И ПОВЕДЕНЧЕСКИМИ ПРОБЛЕМАМИ УЧЕНИКОВ

• **Пример:** В школе в Казани запущена программа профилактики буллинга с участием педагогов, психологов и родителей, что улучшило атмосферу в коллективе.

• **Рекомендация:** Комплексный подход к работе с учениками и взаимодействие с родителями позволяет создавать безопасную и поддерживающую образовательную среду.

Практические методы поддержки педагогов

ПСИХОЛОГИЧЕСКИЕ ТРЕНИНГИ И СУПЕРВИЗИИ

• Регулярные встречи с психологом для обсуждения сложных случаев помогают педагогам справляться с эмоциональной нагрузкой.

• **Внедрение:** Организовать сотрудничество с профильными специалистами или привлечь психологов в штат школы.

ПРОФЕССИОНАЛЬНЫЕ СООБЩЕСТВА И КЛУБЫ

• Создание площадок для обмена опытом и поддержки коллег способствует развитию профессионализма и уменьшению чувства изоляции.

• **Внедрение:** Формировать внутришкольные клубы или подключаться к городским и региональным педагогическим сообществам.

ГИБКИЙ ГРАФИК РАБОТЫ И ДИСТАНЦИОННАЯ ЗАНЯТОСТЬ

• Позволяет учителям лучше совмещать работу и личную жизнь, снижая уровень стресса.

• **Внедрение:** Внедрять частичную дистанционную работу для подготовки материалов и участия в методических мероприятиях.

РЕСУРСНЫЕ ЦЕНТРЫ И МЕТОДИЧЕСКИЕ КАБИНЕТЫ

• Обеспечивают педагогов необходимыми материалами и методическими пособиями, что облегчает подготовку к урокам.

• **Внедрение:** Создавать такие кабинеты и поддерживать их обновление.

ВНЕДРЕНИЕ КОРПОРАТИВНОЙ КУЛЬТУРЫ ВЗАИМОПОМОЩИ

• Формирование дружелюбной и поддерживающей атмосферы в коллективе через совместные мероприятия и тимбилдинги.

• **Внедрение:** Регулярно проводить встречи, праздники и профессиональные праздники с участием всего коллектива.

ИСПОЛЬЗОВАНИЕ ЦИФРОВЫХ ПЛАТФОРМ ДЛЯ КОММУНИКАЦИИ

• Позволяет оперативно обмениваться информацией и ресурсами, поддерживает командную работу.

• **Внедрение:** Внедрять корпоративные мессенджеры, платформы для совместной работы и обучения.

Методы и формы помощи педагогам

1. ПРОФЕССИОНАЛЬНОЕ РАЗВИТИЕ

• Организация регулярных курсов повышения квалификации и тренингов.
• Внедрение системы наставничества, где опытные педагоги помогают новичкам.

• Создание возможностей для обмена опытом и участия в профессиональных сообществах.

2. ПСИХОЛОГИЧЕСКАЯ ПОДДЕРЖКА

• Психологическое консультирование и тренинги по управлению стрессом.
• Создание групп взаимопомощи и поддержки внутри коллектива.
• Разработка программ профилактики профессионального выгорания.

3. УЛУЧШЕНИЕ УСЛОВИЙ ТРУДА

- Оптимизация рабочей нагрузки и административных процедур.
- Создание комфортной материально-технической базы и уютной атмосферы в школе.
- Гибкий график и возможность дистанционной работы, где это возможно.

4. ВНЕДРЕНИЕ СОВРЕМЕННЫХ ОБРАЗОВАТЕЛЬНЫХ ТЕХНОЛОГИЙ

- Обучение педагогов цифровым инструментам и методикам.
- Поддержка инновационных проектов и инициатив в преподавании.
- Использование ИКТ для автоматизации рутинных задач.

5. ВЗАИМОДЕЙСТВИЕ С РОДИТЕЛЯМИ И АДМИНИСТРАЦИЕЙ

- Формирование партнерских отношений с родителями для поддержки ученика и педагога.
- Активное участие администрации в решении педагогических и организационных вопросов.

- Признание и поощрение достижений учителей.

Роль корпоративной культуры и командной работы

Создание дружелюбной, уважительной и поддерживающей среды в коллективе способствует повышению мотивации педагогов и снижению уровня стресса. Регулярные собрания, совместные мероприятия и открытость в общении формируют позитивный климат, важный для успешной работы.

Заключение

Поддержка педагогов - комплексная задача, требующая системного подхода и взаимодействия различных участников образовательного процесса. Внедрение описанных методов позволяет повысить профессионализм учителей, сохранить их здоровье и эмоциональное равновесие, а значит - обеспечить высокое качество образования.

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ВЗАИМООТНОШЕНИЕ ПЕДАГОГОВ СО СТУДЕНТАМИ: ПСИХОЛОГО-ПЕДАГОГИЧЕСКИЙ АСПЕКТ

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В статье рассматриваются особенности взаимоотношений между педагогами и студентами в образовательной среде. Особое внимание уделено психологическим аспектам взаимодействия, стилям педагогического общения, а также влиянию межличностного климата на мотивацию и академическую успеваемость студентов. Представлены практические рекомендации по формированию благоприятного учебного климата, способствующего развитию доверия и взаимного уважения.

This article explores the characteristics of the teacher-student relationship within the educational environment. Special attention is given to the psychological aspects of interaction, communication styles of teachers, and the impact of interpersonal climate on students' motivation and academic performance. Practical recommendations are provided for creating a favorable educational climate that fosters trust and mutual respect.

Ключевые слова: педагогическое общение, взаимоотношения, студенты, мотивация, доверие, образовательная среда, межличностный климат.

Keywords: pedagogical communication, relationship, students, motivation, trust, educational environment, interpersonal climate.

Введение

Современное образование предполагает не только передачу знаний, но и создание благоприятной психологической атмосферы, в которой развивается личность обучающегося. В этом контексте взаимоотношения между педагогом и студентом приобретают ключевое значение. От характера этих отношений во многом зависит эффективность образовательного процесса, уровень мотивации студентов, их вовлечённость и готовность к саморазвитию.

Цель данной статьи - проанализировать психолого-педагогические особенности взаимоотношений между преподавателями и студентами, выявить основные проблемы и предложить пути их решения.

Основная часть

1. ПСИХОЛОГИЧЕСКИЕ ОСНОВЫ ВЗАИМОДЕЙСТВИЯ ПЕДАГОГА И СТУДЕНТА

Отношения между педагогом и студентом строятся на основе доверия, уважения и взаимного признания. Эффективное взаимодействие возможно при наличии у педагога высокоразвитого эмоционального интеллекта - способности распознавать и регулировать собственные эмоции и эмоции других. Согласно Гоулману (1995), эмоциональный интеллект играет решающую роль в установлении позитивных отношений в образовательной среде.

Психологическая природа взаимодействия между педагогом и студентом обусловлена сложным комплексом межличностных отношений, основанных на доверии, уважении, эмпатии и взаимной ответственности. Такое взаимодействие выходит за рамки простой трансляции знаний: оно включает эмоциональный контакт, личностную значимость общения и психологическую безопасность образовательной среды.

В основе эффективного взаимодействия лежат ключевые психологические категории: восприятие, общение, понимание и принятие. Педагог выступает не только как носитель знаний, но и как медиатор, сопровождающий личностное становление обучающегося.

Особую роль играет эмоциональный интеллект преподавателя - способность осознавать, интерпретировать и корректно реагировать на собственные эмоции и эмоции студентов. Как указывает выше, высокий уровень эмоционального интеллекта способствует выстраиванию доверительных и продуктивных отношений, снижает конфликтность и повышает уровень удовлетворённости обучением.

Кроме того, важным является уровень педагогической эмпатии - способности к эмоциональному сопереживанию, к пониманию внутреннего состояния студента. Эмпатичное отношение со стороны преподавателя способствует формированию психологически безопасного образовательного пространства, в котором обучающиеся чувствуют себя понятыми и принятыми.

Также значимым является мотив взаимодействия, который определяет глубину и направленность общения. Если целью преподавателя является не просто выполнение профессиональных обязанностей, а содействие развитию студента, то такое отношение будет воспринято как искреннее и побуждающее к доверию.

В процессе взаимодействия формируются определённые роли: педагог как наставник, партнёр, лидер или фасилитатор. От того, какова роль преподавателя, зависит динамика отношений: авторитарная, демократическая или партнерская модель общения. Современные педагогические подходы акцентируют внимание

на переходе от директивного управления к субъект-субъектному взаимодействию, где и педагог, и студент являются активными участниками образовательного процесса.

Таким образом, психологические основы взаимодействия педагога и студента включают не только знания в области психологии личности и общения, но и высокую рефлексивность, эмоциональную зрелость и способность к осознанному выстраиванию отношений, способствующих развитию обучающихся как самостоятельных, ответственных и социально зрелых личностей.

СТИЛИ ПЕДАГОГИЧЕСКОГО ОБЩЕНИЯ

Стили педагогического общения представляют собой устойчивые способы взаимодействия педагога со студентами, отражающие личностные особенности преподавателя, уровень его педагогической культуры и цели образовательного процесса. От стиля общения напрямую зависят качество межличностных отношений, учебная мотивация студентов и эффективность образовательного воздействия.

Согласно работам В.А. Кан-Калика, А.А. Леонтьева и Е.И. Рогова, можно выделить несколько доминирующих стилей педагогического общения:

Авторитарный стиль

Авторитарный стиль характеризуется жёстким контролем со стороны преподавателя, доминированием в коммуникации, минимальной свободой и инициативой студентов. Основу такого стиля составляет иерархическое взаимодействие, где преподаватель выступает как единственный источник знаний и правил, а студент — как пассивный исполнитель. Несмотря на кажущуюся эффективность в поддержании дисциплины, авторитарный стиль часто приводит к подавлению творческой активности, снижению самооценки студентов, формированию зависимости от внешней оценки и отсутствию инициативы. Он может быть оправдан в условиях необходимости чёткой регламентации, но не способствует развитию субъектной позиции обучающегося.

Демократический стиль

Демократический стиль основывается на сотрудничестве, взаимном уважении и вовлечении студентов в образовательный процесс. Преподаватель, придерживающийся данного стиля, активно привлекает студентов к обсуждению, поддерживает обратную связь, учитывает индивидуальные особенности обучающихся.

Этот стиль способствует развитию критического мышления, самостоятельности, ответственности, а также формированию позитивной мотивации к обучению. Демократический стиль особенно эффективен в

условиях проектного обучения, междисциплинарного взаимодействия и при использовании активных методов преподавания (дискуссии, тренинги, кейсы и др.).

Либеральный стиль

Либеральный (или попустительский) стиль характеризуется низким уровнем педагогической активности, отсутствием контроля, неопределённостью требований и ожиданий. Преподаватель отстраняется от образовательного процесса, передавая ответственность за результат исключительно студентам. Такой подход может быть оправдан в работе с высоко мотивированными, зрелыми и ответственными обучающимися, но чаще всего он приводит к снижению дисциплины, отсутствию чётких целей и дезорганизации учебного процесса.

Индивидуализированный стиль

Современные исследования также выделяют **индивидуализированный стиль**, в рамках которого преподаватель адаптирует формы и методы общения в зависимости от уровня развития, мотивации и психологических особенностей конкретной студенческой аудитории. Такой подход требует высокой педагогической гибкости, эмпатии и коммуникативной компетентности.

ВЛИЯНИЕ СТИЛЯ ОБЩЕНИЯ НА УЧЕБНЫЙ ПРОЦЕСС

Выбранный преподавателем стиль общения влияет на формирование учебной мотивации, степень вовлеченности студентов, их уверенность в себе и готовность к самостоятельной работе. Исследования показывают, что наибольшую эффективность в условиях высшего образования демонстрируют демократический и индивидуализированный стили, поскольку они способствуют формированию субъектной позиции студента и развитию его личностного потенциала.

Таким образом, выбор стиля педагогического общения является важным элементом профессиональной рефлексии преподавателя и должен соответствовать не только его личностным особенностям, но и целям, задачам и условиям конкретной образовательной ситуации.

Наиболее эффективным считается демократический стиль, так как он способствует формированию самостоятельности и ответственности у обучающихся.

РОЛЬ ЭМПАТИИ И УВАЖЕНИЯ В ПЕДАГОГИЧЕСКОЙ ПРАКТИКЕ

Эмпатия - это способность понимать эмоциональное состояние другого человека, что особенно важно в педагогике. Уважительное и чуткое отношение к студентам способствует созданию атмосферы доверия и психологической безопасности. В исследованиях Р. Рождественской и Н.Е. Щурковой

подчёркивается значимость педагогической эмпатии как условия успешной социализации студентов.

Одним из ключевых условий эффективного взаимодействия педагога и студента является наличие эмпатии и уважения — качеств, лежащих в основе гуманистического подхода к образованию. Эмпатия позволяет преподавателю понимать эмоциональные и когнитивные состояния студентов, адаптировать образовательные воздействия и создавать психологически безопасную и поддерживающую среду.

Эмпатия как основа педагогического общения

Эмпатия в педагогике трактуется как способность к эмоциональному вчувствованию, пониманию внутреннего мира обучающегося, его переживаний, трудностей и потребностей. Педагогическая эмпатия выражается в умении:

- «слышать» и понимать скрытые сигналы;
- откликаться на эмоциональное состояние студентов;
- регулировать собственные реакции в стрессовых или конфликтных ситуациях.

Исследования показывают, что высокий уровень эмпатии способствует формированию доверительных отношений, снижает уровень тревожности у студентов и увеличивает их учебную мотивацию. Эмпатичный преподаватель способен не только «объяснять», но и «сопровождать», оказывать моральную поддержку, быть наставником и психологическим ориентиром.

Уважение как базовая ценность образовательного взаимодействия

Уважение в педагогическом контексте означает признание личностной ценности каждого обучающегося, его права на индивидуальность, мнение и выбор. Оно проявляется в:

- принятии студента вне зависимости от уровня его подготовки;
- отсутствии уничижающих высказываний и сравнений;
- готовности выслушать и учитывать мнение обучающегося;
- признании ошибок как естественной части образовательного процесса.

Уважительное отношение к студенту способствует формированию позитивного самоотношения, устойчивой самооценки и внутренней мотивации к обучению. Как утверждает Н.Е. Щуркова, атмосфера уважения — это основа нравственного воспитания, формирующая у студентов ценностные ориентиры и культуру взаимодействия.

Эмпатия и уважение как инструменты профилактики конфликтов

Многие учебные конфликты и проблемы дисциплины являются следствием неадекватной педагогической реакции, непонимания или игнорирования эмоционального состояния студентов. Использование эмпатии и уважения позволяет педагогу:

- предупреждать напряжённость в группе;
- своевременно распознавать кризисные состояния;
- выстраивать диалог, а не давление;
- формировать атмосферу сотрудничества, а не соперничества.

Такая практика особенно важна в условиях увеличивающейся психологической нагрузки на студентов, связанной с академическими требованиями, социальной нестабильностью и личностными трудностями.

Развитие эмпатийной компетентности у педагога

Эмпатия не является исключительно врождённым качеством — она может и должна развиваться в рамках профессиональной подготовки и саморазвития педагога. Для этого используются:

- специальные тренинги эмоционального интеллекта и активного слушания;
- супервизии и педагогические кейсы;
- анализ ситуаций межличностного общения;
- методики самооценки и развития коммуникативной компетентности.

Таким образом, эмпатия и уважение являются неотъемлемыми компонентами профессиональной педагогической деятельности. Их наличие обеспечивает не только успешность учебного взаимодействия, но и гуманистический характер образования, в центре которого находится личность студента.

ВЛИЯНИЕ ВЗАИМООТНОШЕНИЙ НА МОТИВАЦИЮ И АКАДЕМИЧЕСКУЮ УСПЕВАЕМОСТЬ

Позитивное взаимодействие с преподавателями оказывает положительное влияние на учебную мотивацию студентов. Студенты, чувствующие поддержку и уважение со стороны педагогов, чаще проявляют инициативу, демонстрируют более высокие академические достижения и устойчивую учебную мотивацию.

Качество взаимоотношений между преподавателем и студентом оказывает прямое влияние на ключевые аспекты учебного процесса — уровень мотивации, активность в обучении, эмоциональное состояние и, как следствие, академическую успеваемость. Позитивные межличностные связи в образовательной среде способствуют формированию внутренней мотивации, тогда как конфликты и отсутствие взаимопонимания могут приводить к отчуждению, тревожности и снижению интереса к учёбе.

Межличностный климат и учебная мотивация

Учебная мотивация студентов во многом формируется в контексте межличностного климата в учебной группе и характера взаимодействия с преподавателями. Как отмечает А.К. Маркова, атмосфера сотрудничества,

поддержки и открытого общения способствует активному включению студентов в учебный процесс, пробуждению познавательного интереса и стремлению к саморазвитию.

Если студент ощущает, что его мнение уважается, а преподаватель заинтересован в его успехах, формируется **внутренняя мотивация** — стремление учиться ради самореализации и достижения личностного роста. В то же время **внешняя мотивация**, основанная исключительно на оценках и контроле, при отсутствии позитивного взаимодействия может быстро снижаться.

Психологическая безопасность как фактор академической успешности

Психологическая безопасность - это состояние, при котором студент чувствует себя свободным от страха осуждения, насмешек или наказания. Такая среда формируется через уважительное и доброжелательное общение со стороны преподавателя.

Исследования показывают, что студенты, обучающиеся в условиях психологически комфортной атмосферы, демонстрируют:

- более высокие результаты на экзаменах;
- большую вовлечённость в учебную деятельность;
- устойчивую учебную мотивацию;
- более высокий уровень саморегуляции и ответственности за результат.

Таким образом, педагог, способный выстраивать доверительные и уважающие отношения со студентами, косвенно повышает и их академическую продуктивность.

Эффект «значимого взрослого» в образовательной среде

Теория привязанности и концепция «значимого взрослого» (по Дж. Боулби и Р. Штайнеру) находят отражение и в высшем образовании. Преподаватель, обладающий эмпатией, доброжелательностью и последовательностью, может стать для студента не только источником знаний, но и ролевой моделью, ориентиром в профессиональном и личностном становлении.

Наличие такого фигуранта в образовательной среде укрепляет эмоциональную стабильность обучающихся и повышает уровень их самооффективности. Студенты в подобных условиях чаще демонстрируют инициативу, критическое мышление и стремление к достижению высоких результатов.

Последствия нарушения взаимоотношений

При наличии негативных или формальных отношений между преподавателем и студентом могут наблюдаться:

- снижение интереса к предмету;
- развитие протестных форм поведения (прогулы, отказ от участия в занятиях);

- формирование устойчивого негативного отношения к образовательной системе в целом;
- повышенная тревожность, неуверенность и стресс.

Особенно уязвимыми в этом контексте оказываются первокурсники и студенты с низкой академической успеваемостью, которым крайне важно почувствовать поддержку на этапе адаптации.

Таким образом, характер взаимоотношений между преподавателем и студентом является определяющим фактором как в формировании учебной мотивации, так и в достижении высоких академических результатов. Создание условий для психологической безопасности, эмпатии и уважения позволяет активизировать внутренние ресурсы студентов и способствует более продуктивному освоению образовательной программы.

ПРАКТИЧЕСКИЕ РЕКОМЕНДАЦИИ

- Формирование культуры открытого и уважительного диалога.
- Развитие эмоционального интеллекта у педагогов через тренинги и супервизии.
- Регулярная обратная связь от студентов.
- Включение элементов коучинга и наставничества в образовательный процесс.
- Разработка программ повышения квалификации педагогов с акцентом на коммуникационные навыки.

Учитывая значимость межличностного взаимодействия в образовательной среде, важной задачей педагогической практики становится создание и поддержание конструктивных и доверительных отношений со студентами. Ниже представлены практические рекомендации, направленные на развитие эмоционально комфортной и результативной образовательной среды.

Развитие эмоционального интеллекта и эмпатии у педагогов

- Включение тренингов эмоциональной компетентности в программы повышения квалификации;
- Проведение интерактивных семинаров по активному слушанию и рефлексивной коммуникации;
- Использование методов самонаблюдения и анализа педагогических ситуаций для развития эмпатийной отзывчивости.

Формирование культуры диалога и обратной связи

- Регулярное предоставление студентам возможности высказывать мнение по поводу учебного процесса;
- Введение открытых форм обратной связи (анкеты, обсуждения, анонимные отзывы);
- Практика индивидуальных консультаций и наставничества.

Гибкость в выборе стиля педагогического общения

- Использование адаптивного подхода: выбор стиля взаимодействия в зависимости от контекста, уровня подготовки и психологических особенностей группы;

- Стремление к демократическому и партнерскому стилям как наиболее продуктивным для развития мотивации и самостоятельности студентов.

Создание психологически безопасной образовательной среды

- Исключение унижительных или авторитарных форм воздействия;
- Поддержка студента при возникновении трудностей, признание его права на ошибку;

- Формирование атмосферы, в которой студент не боится проявлять инициативу, задавать вопросы и выражать своё мнение.

Повышение педагогической рефлексии

- Ведение профессиональных дневников, педагогических кейсов, участие в методических объединениях;

- Обмен опытом с коллегами, обсуждение сложных ситуаций и поиск оптимальных решений;

- Развитие способности к самооценке и коррекции собственных педагогических стратегий.

Заключение

Взаимоотношения между преподавателями и студентами - ключевой фактор, определяющий успешность образовательного процесса. Эффективное педагогическое взаимодействие основано на уважении, эмпатии, эмоциональной компетентности и выборе оптимального стиля общения. Современная педагогика требует от преподавателя не только знаний предмета, но и глубокого понимания психологии личности обучающегося. Создание благоприятной образовательной среды возможно только при условии конструктивного и гуманистического подхода к межличностному взаимодействию.

Анализ взаимоотношений между педагогом и студентом позволяет сделать вывод о том, что данный компонент образовательного процесса является не только фоном, но и активным фактором, влияющим на успешность обучения, мотивацию, личностное развитие и психологическое благополучие обучающихся.

Успешная педагогическая практика невозможна без уважения к личности студента, умения выстраивать доверительные и этически корректные отношения, понимания его эмоциональных и познавательных потребностей. Современный преподаватель должен обладать не только предметной компетентностью, но и высоким уровнем эмоционального интеллекта, гибкостью мышления и готовностью к постоянному профессиональному росту.

Таким образом, формирование эффективных педагогических взаимоотношений - это многоплановый и непрерывный процесс, от которого зависит качество не только образования, но и воспитания культурных, зрелых и ответственных граждан.

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ЎЗБЕКИСТОН СОҒЛИҚНИ САҚЛАШ ТИЗИМИДАГИ ИСЛОҲОТЛАР (2017-2025): ЮТУҚЛАР, МУАММОЛАР ВА ИСТИҚБОЛЛАР

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КРДССМ ги Республика шошилинч тиббий ёрдам

илмий марказининг Қорақалпоғистон филиали

Ўзбекистон Республикаси мустақилликка эришганидан сўнг соғлиқни сақлаш тизимини ислоҳ қилиш ва модернизациялаш йўлидан бормоқда. Айниқса, 2017 йилдан бошланган кенг қамровли ислоҳотлар даври мамлакат тиббиёти ривожига янги саҳифа очди. Ўзбекистон Республикаси Президентининг 2017 йил 7 февралдаги ПФ-4947-сонли Фармони билан тасдиқланган 2017-2021 йилларда Ўзбекистон Республикасини ривожлантиришнинг бешта устувор йўналиши бўйича Ҳаракатлар стратегияси ва унинг мантиқий давоми сифатида қабул қилинган кейинги ривожланиш стратегиялари соғлиқни сақлаш соҳасини тубдан яхшилаш, аҳолига кўрсатилаётган тиббий хизматлар сифати ва самарадорлигини ошириш, тиббиёт муассасаларининг моддий-техник базасини мустаҳкамлаш, соҳани малакали кадрлар билан таъминлаш каби муҳим вазифаларни белгилаб берди. Ушбу мақолада 2017-2025 йиллар оралиғида Ўзбекистон соғлиқни сақлаш тизимида амалга оширилган асосий ислоҳотлар, уларнинг натижалари, мавжуд муаммолар ва келгуси ривожланиш истиқболлари, шу жумладан клиник ординатура тизимидаги ўзгаришлар таҳлил қилинади.

2017-2025 йиллардаги ривожланиш стратегиялари ва тиббиёт соҳаси мақсадлари.

Ўзбекистон Республикасининг 2017-2025 йилларга мўлжалланган ривожланиш стратегиялари доирасида соғлиқни сақлаш тизимини ислоҳ қилиш давлат сиёсатининг устувор йўналишларидан бири сифатида белгиланди. Бу даврда амалга оширилган ва режалаштирилган ислоҳотлар аҳоли саломатлигини мустаҳкамлаш, тиббий хизматлар сифати ва қамровини оширишга қаратилган.

Расмий ҳужжатлар, жумладан, Ўзбекистон Республикаси Президентининг 2017 йил 29 мартдаги ПҚ-2857-сонли "Ўзбекистон Республикасида бирламчи тиббий-санитария ёрдами муассасалари фаолиятини ташкил этишни янада такомиллаштириш чора-тадбирлари тўғрисида"ги қарори ва 2019-2025 йилларда Ўзбекистон Республикасининг соғлиқни сақлаш тизимини ривожлантириш Концепцияси (Президентнинг 07.12.2018 йилдаги ПФ-5590-сон Фармонида 1-илова) бу борадаги асосий мақсад ва вазифаларни белгилаб берди.

Ислохотларнинг асосий мақсадларидан бири бирламчи тиббий-санитария ёрдами (БТСЁ) тизимини тубдан такомиллаштиришдир. Бунда асосий эътибор касалликларнинг олдини олиш, профилактика ва патронаж ишларига қаратилди. Фаолият самарадорлигининг асосий мезони сифатида шифохонада даволаниш, касалланиш ва ногиронлик даражасини пасайтириш белгиланди. Қишлоқ врачлик пунктлари (ҚВП), оилавий ва кўп тармоқли поликлиникаларнинг иш вақтини узайтириш (соат 8:00 дан 20:00 гача), уларда туну-кун ишлайдиган тез ёрдам шохобчаларини ташкил этиш орқали аҳоли учун тиббий хизматлардан фойдаланиш имкониятларини кенгайтириш кўзда тутилди. Шунингдек, фертил ёшидаги ва ҳомиладор аёллар, болалар, кексалар, ногиронлар ва сурункали касалликларга чалинганлар ўртасида мунтазам патронаж ишларини йўлга қўйиш муҳим вазифа сифатида белгиланди.

Қишлоқ аҳолисига тиббий хизмат кўрсатиш сифатини ошириш мақсадида профилактик кўриклар, лаборатория ва инструментал текширувларни бевосита уларнинг яшаш жойларида ўтказиш, касалликларни эрта аниқлаш тизимини яратишга урғу берилди. ҚВП ва поликлиникаларда кўрсатиладиган тиббий хизматлар ҳажмини кенгайтириш, уларнинг моддий-техник базасини (диагностика ва даволаш жиҳозлари, мобил бригадалар) мустаҳкамлаш, шифокорлар учун замонавий клиник протоколлар, тиббий адабиётлар ва электрон ҳужжат айланиш тизимидан фойдаланиш имкониятларини яратиш режалаштирилди. Қишлоқ жойларда ишлайдиган шифокорларни уй-жой ва транспорт билан таъминлаш масалалари ҳам эътибордан четда қолмади.

Стратегияда соғлиқни сақлаш тизимини молиялаштириш механизмларини такомиллаштириш, хусусан, мажбурий тиббий суғурта тизимини босқичма-босқич жорий этиш муҳим ўрин тутди. Бу бюджетга боғлиқликни камайтириш ва тиббий хизматлар сифатини оширишга хизмат қилиши керак эди. Шунингдек, тиббий хизматларнинг клиник тавсиялари ва стандартлари билан боғлиқ клиник-харажат гуруҳлари (DRG тизими)ни ишлаб чиқиш зарурати таъкидланди.

Ислохотларнинг яна бир муҳим йўналиши соғлиқни сақлаш соҳасидаги қонунчилик базасини такомиллаштиришдир. Трансплантология, кўмакчи репродуктив технологиялар, телетиббиёт каби замонавий йўналишларни ҳуқуқий тартибга солиш, соҳадаги қонуности ва идоравий ҳужжатларни

тизимлаштириш орқали тизимнинг барқарор ривожланишини таъминлаш мақсад қилинган. Шу билан бирга, тиббиёт кадрларини тайёрлаш ва малакасини ошириш тизимини такомиллаштириш, айниқса, умумий амалиёт шифокорларини тайёрлаш сифатини яхшилашга алоҳида эътибор қаратилди.

Умуман олганда, 2017-2025 йиллардаги стратегия Ўзбекистон соғлиқни сақлаш тизимини аҳолига яқинлаштириш, профилактикага урғу бериш, хизматлар сифати ва самарадорлигини ошириш, молиялаштириш ва бошқарув механизмларини модернизация қилиш ҳамда соҳанинг ҳуқуқий ва кадрлар салоҳиятини мустаҳкамлаш каби кенг қамровли мақсадларни ўз ичига олган.

Амалга оширилган асосий ислохотлар (2017-2025).

Ўзбекистон Республикасининг 2017-2025 йилларга мўлжалланган ривожланиш стратегияларида белгиланган мақсадларга эришиш йўлида соғлиқни сақлаш тизимида бир қатор муҳим ислохотлар амалга оширилди. Бу ислохотлар тиббий хизматлар сифатини яхшилаш, аҳолининг барча қатламлари учун тиббий ёрдамдан фойдаланиш имкониятларини кенгайтириш ва соҳа бошқарувини такомиллаштиришга қаратилди.

Бирламчи тиббий-санитария ёрдами (БТСЁ) тизимини ислох қилиш устувор йўналишлардан бири бўлди. 2017 йилдаги ПҚ-2857-сонли қарорга мувофиқ, ҚВПлар ва поликлиникалар фаолияти касалликлар профилактикаси ва патронажга йўналтирилди. Уларнинг иш вақти узайтирилди, моддий-техник базаси мустаҳкамланди. Қишлоқ врачлик пунктлари сонини мақбуллаштириш ва улар негизида оилавий поликлиникалар, кундузги стационарлар ташкил этиш ишлари бошланди. Аҳолига яшаш жойида профилактик кўриклар ва текширувлар ўтказиш тизими йўлга қўйилди. 2017 йил 5 сентябрдаги 696-сонли Вазирлар Маҳкамаси қарори билан тасдиқланган Низом эса давлат бюджети маблағлари ҳисобига тиббий ёрдам кўрсатиш тартибини белгилаб берди. Унга кўра, миждозларни БТСЁ муассасаларидан бошлаб туман, вилоят ва республика даражасидаги тиббиёт ташкилотларига йўналтиришнинг аниқ механизми жорий этилди. Бунда имтиёзли тоифадаги фуқаролар учун давлат томонидан кафолатланган тиббий ёрдам хажми ва турлари аниқланди.

Ихтисослаштирилган тиббий ёрдамни ривожлантиришга ҳам алоҳида эътибор қаратилди. Республика ихтисослаштирилган илмий-амалий тиббиёт марказлари фаолияти такомиллаштирилди, уларнинг ҳудудий филиаллари ташкил этилди. Бу юқори технологик тиббий хизматларни аҳолига яқинлаштириш имконини берди. Шошилиш тиббий ёрдам тизими ҳам модернизация қилинди, ягона марказлашган тизим яратилди, тез ёрдам хизматининг моддий-техник базаси янгиланди.

Соғлиқни сақлаш тизимини молиялаштириш механизмларини ислох қилиш доирасида давлат тиббий суғуртаси тизимини жорий этиш бўйича дастлабки

қадамлар қўйилди. Сирдарё вилоятида тажриба-синов лойиҳаси бошланди. Бу тизим соғлиқни сақлашга ажратилаётган маблағлардан самарали фойдаланиш, тиббий хизматлар сифатини ошириш ва аҳолининг тиббий ёрдам олишдаги молиявий юкини камайтиришга қаратилган.

Тиббиёт соҳасида хусусий секторни ривожлантириш учун ҳам қулай шароитлар яратилди. 2017 йилдаги Президент қарори (ПҚ-2863) хусусий тиббиёт муассасалари фаолиятини кенгайтириш, уларга солиқ ва божхона имтиёзлари бериш, замонавий тиббий асбоб-ускуналар олиб киришни рағбатлантиришга йўналтирилди. Бу давлат тиббиёт муассасалари билан рақобатни кучайтириш орқали хизматлар сифатини оширишга хизмат қилди.

Электрон соғлиқни сақлаш тизимини ривожлантиришга ҳам эътибор қаратилди. Тиббиёт муассасаларида электрон ҳужжат айланиши, электрон тиббий карталар, онлайн навбатга ёзилиш каби тизимларни жорий этиш ишлари бошланди. Телемедицина технологияларини ривожлантириш орқали чекка ҳудудлардаги аҳолига малакали тиббий маслаҳатлар бериш имконияти яратилди.

Ушбу даврда амалга оширилган ислохотлар натижасида аҳолининг ўртача умр кўриш давомийлиги ошди, оналар ва болалар ўлими кўрсаткичлари камайди. Юқумли касалликларнинг олдини олиш ва уларга қарши курашишда сезиларли ютуқларга эришилди. Шунга қарамай, тизимда ҳали ҳал этилиши керак бўлган муаммолар, жумладан, тиббий хизматлар сифатини янада ошириш, молиялаштириш механизмларини такомиллаштириш ва кадрлар салоҳиятини мустаҳкамлаш каби масалалар мавжуд.

Клиник ординатура тизимидаги ислохотлар.

Ўзбекистонда 2017-2025 йиллардаги соғлиқни сақлаш ислохотлари доирасида тиббиёт кадрларини тайёрлаш тизими, жумладан клиник ординатура (резидентура) фаолиятини такомиллаштиришга алоҳида эътибор қаратилди. Бу борадаги асосий ҳужжатлардан бири Ўзбекистон Республикаси Вазирлар Маҳкамасининг 2017 йил 27 сентябрдаги 769-сонли "Тиббиёт кадрларини тайёрлашни янада такомиллаштириш чора-тадбирлари тўғрисида"ги қароридир. Ушбу қарор ва кейинги меъёрий ҳужжатлар клиник ординатура тизимида бир қатор ўзгаришларни жорий қилди.

Ислохотларнинг муҳим йўналишларидан бири клиник ординатура мутахассисликлари рўйхатини замонавий тиббиёт талаблари ва амалиёти эҳтиёжларидан келиб чиқиб янгилаш бўлди. Даволаш фаолияти билан боғлиқ бакалаврият таълим йўналишлари негизида клиник ординатура мутахассисликлари рўйхати тасдиқланди. Бу тор мутахассисларни тайёрлаш жараёнини тизимлаштиришга хизмат қилди. Шунингдек, умумий амалиёт шифокорларидан мутахассислар тайёрлаш тартиби белгиланди, бунда камида

бир йиллик иш тажрибасига эга бўлган шифокорлар мақсадли тайёргарликдан ўтиш имкониятига эга бўлдилар.

Клиник ординаторларнинг амалий кўникмаларини ошириш мақсадида олий тиббий таълим муассасаларининг клиникалари, ихтисослаштирилган илмий-амалий тиббиёт марказлари, илмий-тадқиқот институтлари ва вилоят клиникаларининг ресурсларидан максимал даражада фойдаланиш тартиби ишлаб чиқилди. Бу ординаторларнинг ўқув жараёнида бевосита беморлар билан ишлаш, замонавий диагностика ва даволаш усуллари ўзлаштириш имкониятларини кенгайтди.

Давлат грантлари асосида тахсил олган клиник ординатура битирувчилари учун мажбурий ишлаб бериш тизими ҳам ислохотларнинг бир қисми бўлди. 769-сонли қарорга кўра, давлат гранти асосида ўқиган битирувчилар, айниқса "Даволаш иши", "Педиатрия иши" ва "Касбий таълим (даволаш иши)" йўналишлари битирувчилари, кейинчалик доимий яшаш жойида мажбурий тартибда камида уч йил (36 ой) ишлаб беришлари белгиланди. Бу муддат 2020-2021 ўқув йилидан бошлаб айрим ҳудудлар ва мутахассисликлар учун беш йилгача (60 ой) узайтирилди. Битирувчиларни ишга тақсимлаш жараёнини мувофиқлаштириш ва назорат қилиш учун Соғлиқни сақлаш вазирлиги ҳузурида махсус Комиссия ташкил этилди. Ушбу комиссия ҳудудларнинг шифокор кадрларга бўлган эҳтиёжи, мавжуд бўш иш ўринлари ва битирувчиларнинг яшаш жойи каби омилларни ҳисобга олган ҳолда тақсимотни амалга оширади. Бу чоралар чекка ҳудудларни малакали тиббиёт кадрлари билан таъминлашга қаратилган.

Кейинги йилларда клиник ординатурага қабул қилиш тартиблари ҳам такомиллаштирилиб борилди. Қабул квоталари белгиланди, имтиҳонлар шаффофлигини таъминлашга қаратилган чоралар кўрилди. Клиник ординатура тизимидаги бу ислохотлар Ўзбекистонда юқори малакали тиббиёт мутахассисларини тайёрлаш сифатини ошириш ва соғлиқни сақлаш тизимининг кадрлар салоҳиятини мустаҳкамлашга хизмат қилмоқда.

Мавжуд муаммолар ва келгусидаги истиқболлар.

2017-2025 йилларда Ўзбекистон соғлиқни сақлаш тизимида амалга оширилган ислохотлар салмоқли бўлишига қарамай, соҳада ҳали ечимини кутаётган бир қатор муаммолар сақланиб қолмоқда. Кадрлар масаласи ҳам долзарблигича қолмоқда. Айниқса, тор мутахассисларнинг ҳудудлардаги тақсимоотида номутаносиблик мавжуд. Қишлоқ жойларига шифокорларни жалб қилиш ва уларни ушлаб қолиш механизмларини янада такомиллаштириш зарур.

Соғлиқни сақлаш тизимини молиялаштириш ҳам муҳим масалалардан бири. Давлат тиббий суғуртаси тизимининг бутун мамлакат бўйлаб тўлиқ жорий этилиши молиявий оқимларнинг шаффофлигини таъминлаш, маблағлардан

самарали фойдаланиш ва тиббиёт муассасаларининг молиявий мустақиллигини ошириш имконини беради. Бироқ, бу тизимга ўтиш жараёни мураккаб бўлиб, аҳоли ва тиббиёт ходимлари ўртасида кенг тушунтириш ишларини олиб боришни талаб этади. Шунингдек, тиббий хизматлар учун тарифларни белгилаш, клиник-харажат гуруҳларини (DRG) тўлиқ жорий этиш каби масалалар ҳам ўз ечимини кутмоқда.

Электрон соғлиқни сақлаш тизимини ривожлантириш борасида ҳам қилиниши керак бўлган ишлар кўп. Гарчи электрон ҳужжат айланиши, онлайн навбатга ёзилиш каби элементлар жорий этилаётган бўлса-да, тизимни тўлиқ интеграциялаш, барча тиббиёт муассасаларини қамраб олиш ва маълумотлар базаларининг ўзаро ишлашини таъминлаш муҳим вазифадир. Телемедицина имкониятларидан янада кенгроқ фойдаланиш чекка ҳудудлардаги аҳоли учун малакали тиббий ёрдам олиш имкониятини кенгайтиради.

Келгуси истиқболлар ҳақида гапирганда, бошланган ислохотларни изчил давом эттириш, эришилган натижаларни мустаҳкамлаш ва янги чақириқларга мос равишда тизимни такомиллаштириб бориш муҳим аҳамиятга эга. Профилактик тиббиётга, соғлом турмуш тарзини тарғиб қилишга қаратилган эътиборни янада кучайтириш лозим. Аҳолининг тиббий маданиятини ошириш, ўз саломатлигига масъулият билан ёндашишини шакллантириш касалликларнинг олдини олишда муҳим омил бўлади. Тиббиёт фанини ривожлантириш, илмий тадқиқотлар натижаларини амалиётга жорий этиш, халқаро ҳамкорликни кенгайтириш ҳам соҳа ривожини учун зарурдир. Хусусий тиббиёт секторини янада ривожлантириш ва давлат-хусусий шериклик механизмларини кенг қўллаш орқали соғлиқни сақлаш тизимининг умумий салоҳиятини ошириш мумкин.

Хулоса ва фикрлар.

Ўзбекистонда 2017-2025 йиллар оралиғида соғлиқни сақлаш тизимида амалга оширилган ислохотлар мамлакат тиббиётини модернизация қилиш йўлидаги муҳим қадам бўлди. Ҳаракатлар стратегияси ва кейинги ривожланиш стратегияларида белгиланган мақсадлар соҳанинг деярли барча жабҳаларини қамраб олди ва сезиларли ўзгаришларга замин яратди. Бирламчи тиббий-санитария ёрдами тизимининг профилактикага йўналтирилиши, моддий-техник базанинг мустаҳкамланиши, иш вақтининг узайтирилиши аҳолига тиббий хизмат кўрсатиш имкониятларини кенгайтди. Ихтисослаштирилган тиббий ёрдамнинг ривожлантирилиши, хусусан, республика марказларининг ҳудудий филиалларининг очилиши юқори технологик хизматларни жойларга яқинлаштирди. Шошилиш тиббий ёрдам тизимининг модернизацияси ҳам муҳим ютуқлардан биридир.

Молиялаштириш механизмларини ислоҳ қилиш, жумладан, давлат тиббий суғуртаси тизимини тажриба тариқасида жорий этиш, соҳага бозор механизмларини олиб киришга уриниш сифатида баҳоланиши мумкин. Бу тизимнинг тўлиқ ишга туширилиши соғлиқни сақлашга ажратилаётган маблағлардан самарали фойдаланиш ва хизматлар сифатини оширишда муҳим рол ўйнаши кутилмоқда. Хусусий секторни ривожлантиришга берилган имтиёзлар рақобат муҳитини яратиш орқали умумий тиббий хизматлар сифатига ижобий таъсир кўрсатмоқда.

Кадрлар сиёсатидаги ўзгаришлар, айниқса, клиник ординатура тизимининг такомиллаштирилиши, мутахассисликлар рўйхатининг янгиланиши ва битирувчилар учун мажбурий ишлаб бериш тизимининг жорий этилиши соҳанинг кадрлар салоҳиятини мустаҳкамлаш ва ҳудудлардаги шифокорлар етишмовчилигини бартараф этишга қаратилган муҳим қадамлардир. Клиник ординаторларнинг амалий кўникмаларини оширишга қаратилган чоралар ҳам уларнинг келгусидаги фаолияти самарадорлигини оширишга хизмат қилади. Электрон соғлиқни сақлаш ва телемедицинанинг ривожлантирилиши эса тизимни рақамлаштириш ва замонавий технологиялардан фойдаланиш борасидаги интилишларни кўрсатади.

Шу билан бирга, амалга оширилган ислоҳотлар жараёнида бир қатор муаммолар ва камчиликлар ҳам кўзга ташланмоқда. Тиббий хизматлар сифати, айниқса, қишлоқ жойларда, ҳануз етарли даражада эмас. Моддий-техник таъминотдаги камчиликлар, кадрлар тақсимоотидаги номутаносиблик, молиялаштириш механизмларининг тўлиқ ишга тушмагани каби масалалар ўз ечимини кутмоқда. Давлат тиббий суғуртаси тизимининг бутун мамлакат бўйлаб жорий этилиши ва унинг самарали ишлашини таъминлаш катта саъй-ҳаракатларни талаб этади.

Фикримизча, келгусида ислоҳотларнинг изчиллигини таъминлаш, эришилган натижаларни мустаҳкамлаш ва аниқланган муаммоларни бартараф этишга қаратилган комплекс чора-тадбирларни амалга ошириш зарур. Профилактик тиббиётга, аҳолининг тиббий маданиятини оширишга, соғлом турмуш тарзини кенг тарғиб қилишга алоҳида эътибор қаратиш лозим. Кадрлар тайёрлаш ва малакасини ошириш тизимини янада такомиллаштириш, уларни, айниқса, ёш мутахассисларни моддий ва маънавий рағбатлантириш механизмларини кучайтириш муҳим. Тиббиёт фани ва амалиёти интеграциясини чуқурлаштириш, инновацион технологияларни кенг жорий этиш соҳа ривожининг гаровидир. Давлат-хусусий шерикликни ривожлантириш ва соғлиқни сақлаш тизими бошқарувини такомиллаштириш ҳам келгусидаги устувор вазифалардан бўлиши керак. Фақатгина шу йўл билан Ўзбекистон

соғлиқни сақлаш тизимини халқаро стандартлар даражасига олиб чиқиш ва аҳоли саломатлигини ишончли ҳимоя қилишни таъминлаш мумкин.

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MORPHOGENESIS OF LUNGS IN ROSS-308 BROILER CHICKENS (LITERATURE REVIEW)

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Introduction. Broiler chickens are characterized by high productivity and rapid growth, which significantly enhance the economic importance of this breed. The morphogenesis of the respiratory system is a critical factor for their healthy growth and overall physiological development. Studying the morphogenesis of the respiratory organs provides important insights into the functional activity of the respiratory system, its structural development, and the adaptability between the different components of the system.

In Ross-308 broiler chickens, alterations in the structure of the respiratory organs, their functional capacities, and the compatibility of each organ system are crucial. It is important to emphasize that proper development of the respiratory system plays a key role in ensuring healthy growth and high productivity. The respiratory system is essential for providing oxygen, which is necessary for metabolic processes, and for expelling carbon dioxide. The morphogenetic characteristics of respiratory development, the relationship with body weight, as well as the high physiological demands and internal balance specific to broiler chickens, are vital for understanding their physiological adaptability [6].

In 1-day-old broiler chicks, the lungs have completed the embryonic phase of development, and the respiratory pathways begin to form. Researchers such as Lexi (2011) and Vereshchagin (1978) noted that the lungs and bronchi are not fully developed during the embryonic stage. Therefore, in 1-day-old chicks, the lungs are not yet functional, as the pneumocytes and the gas exchange mechanisms are not fully developed [1,3].

At 7 days of age, the respiratory organs undergo considerable development. Pneumocytes and bronchi become fully formed, the airways extend, and the efficiency of the respiratory process improves. Sobolev (1987) emphasized that for stable respiratory function at this age, the airways must continue to develop adequately [4].

By the 14th day, respiratory organ development progresses to a new stage. Pneumocytes are fully formed, and gas exchange becomes more efficient. Tkachenkov (2005) noted that at this stage, the respiratory system operates at higher efficiency. Pneumocytes enhance the absorption and distribution of air within the respiratory pathways. By 14 days of age, the airways and lung tissue are fully developed, with

pneumocytes becoming the main functional cells of the respiratory system. Furthermore, gas exchange efficiency improves, and elastic layers form in the airways [5].

At 21 days, the respiratory organs are fully formed and begin to function actively. The bronchi and microbronchi adapt to their function, and pneumocytes absorb more oxygen while expelling carbon dioxide. Bolas (2012) and Sobolev (1987) examined the full development of the respiratory system at this stage. At this age, the respiratory system is mature and optimally absorbs oxygen. Pneumocytes and bronchioles continue to develop as part of the final maturation of the respiratory system, ensuring stable gas exchange, which enhances cellular oxygen supply [3,7].

At 35 days of age, the respiratory organs reach their highest level of development. The airways and pneumocytes are fully developed, and their elasticity contributes to the overall efficiency of the respiratory system. Lebedev (1990) and Vereshchagin (1978) emphasized that at this age, the respiratory organs are fully formed and operate at maximum efficiency. In 35-day-old chicks, the respiratory system is functioning at its peak, with maximal stability and performance of the respiratory organs [1,2].

Each organ in the respiratory system performs specific functions during respiration, and these organs are composed of various muscles, tissues, and cells. To maintain optimal respiratory efficiency, each organ must develop at the correct time and in the correct manner.

Conclusion The morphogenesis of the respiratory organs in broiler chickens, according to their developmental stages, contributes to the strengthening of respiratory system function. The development of respiratory organs during the embryonic, postnatal, and juvenile stages is essential for ensuring the efficiency of the respiratory system. These studies provide valuable information on respiratory organ development and are crucial for ensuring the health of broiler chickens. They will aid in developing new recommendations for the care and management of broiler chickens in the future.

Research findings. Based on the findings of this study and the analysis of literature, the morphogenesis of the lungs in Ross-308 broiler chickens at 1, 7, 14, 21, and 35 days of age demonstrates a specific developmental phase at each age. On day 1, the respiratory organs are in their embryonic form; by day 7, they begin to develop, and by day 14, respiratory efficiency increases. By day 21, the organs are fully formed, and by day 35, the respiratory organs function at their maximum capacity.

Recommendations . For effective broiler management and to ensure healthy growth, it is important to consider the developmental stages of the respiratory organs. Additionally, improving environmental and nutritional conditions will help enhance the efficiency of the respiratory system.

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MORPHOGENESIS OF THE LUNGS IN ROSS-308 CROSSBREED BROILER CHICKS (LITERATURE REVIEW)

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Introduction. In order to further develop poultry farming in our country, it is essential to monitor and control the growth coefficients of all organs in chicks from the earliest stages of their postnatal ontogenesis. This involves inspecting and ensuring the proper development of these organs, conducting experiments with various types of feed, and, most importantly, organizing them into groups for within-group and inter-group comparisons. The purpose is to conduct research aimed at developing and improving accurate and relevant recommendations for optimized production, ensuring a comprehensive and scientifically grounded approach to this field.

Currently, the physiological condition of broiler chicks plays a critical role in their growth and development. Broilers, which are specifically bred for meat production, are characterized by rapid growth, efficient meat and egg production, and high productivity. In this process, the morphological and physiological characteristics of the lungs—particularly in Ross-308 crossbreed chicks—are among the most important factors. The lungs, as the primary organs of respiration and metabolism in birds, including broilers, play a pivotal role; therefore, their morphogenesis directly influences broiler productivity.

Due to the relatively small size of avian lungs and the presence of air sacs, the respiratory system in birds displays unique anatomical and functional features that facilitate intensive gas exchange [6].

In industrial poultry production, it is essential to understand the morphology and function of the respiratory system under various environmental and physiological conditions. Identifying age-related morphological features, morphogenetic patterns, and mechanisms makes it possible to determine the critical developmental periods of specific organ systems [7].

A review of the literature reveals that numerous studies have been devoted to the morphological structure of the avian respiratory system [4–5].

However, an analysis of the literature revealed that there is a lack of necessary sources on the study of the respiratory system's morphology in Ross-308 crossbreed broiler chicks.

The internal systems of broilers (including the lungs, heart, digestive system, and others) and their developmental processes have been analyzed. Factors influencing the

physiological processes in chickens, such as nutrition, microclimate, age, and metabolism, are also significant. As Smith and Brown (2020) emphasized, it is of great importance to conduct a thorough analysis of lung development and the process of pneumatisation in chicks. Their research mainly focuses on observing the formation of lung tissues during the embryonic stage [9].

The relationship between the meat productivity of broiler chicks and their respiratory system has been studied. The connection between the respiratory system (lungs, bronchi, airways) and meat productivity suggests that meat quality can be improved through the systematic regulation of physical growth, the enhancement of metabolic processes, or improving the efficiency of the respiratory process [1, 2, 3].

General characteristics of lung morphogenesis. Lung morphogenesis, that is, the development of the lungs and subsequent changes after birth, has a significant impact on the function of the respiratory system in birds. The lungs are the primary respiratory organ in birds, responsible for oxygen intake and carbon dioxide removal, as well as promoting various metabolic processes. Studying lung morphogenesis in birds helps in understanding their physical development, metabolic processes, and their ability to digest food.

Lung morphogenesis and development in ross-308 crossbreed broiler chicks. The morphogenesis of the lungs in Ross-308 crossbreed broiler chicks significantly influences their physical growth and metabolic processes. This crossbreed is known for its high feed conversion ability, which means their lung system also develops rapidly. During the growth period, several morphological and physiological changes in the lung system of the broiler chicks are observed.

The development of the lung system is also influenced by internal ecology and the microclimate. Over time, the chicks' lungs improve their ability to move and fill with air. Additionally, between the 7–10 day period, the size and weight of the lungs increase rapidly. This process enhances their ability to absorb oxygen and accelerates metabolic processes [8].

Conclusion

The morphogenesis of the lungs in Ross-308 crossbreed broiler chicks is one of the key factors influencing their growth and development. The development of the lung system aids in enhancing the chicks' respiratory capacity, ensures efficient oxygen absorption, and systematically improves metabolic processes. These factors directly impact the high productivity of the broilers.

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MORPHOGENESIS OF THE HEART IN BROILER CHICKENS BELONGING TO THE ROSS-308 CROSS (LITERATURE REVIEW)

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Introduction. The poultry industry, particularly broiler production, plays a significant role in the food industry. Recent reforms, technologies, and breeding efforts in this field are helping to improve economic efficiency. Broiler chickens of the ROSS-308 cross are not only highly productive, but research into the morphogenesis (development) and physiological characteristics of their cardiovascular system is also essential to ensure their healthy growth. Such studies are especially important for understanding the development of the cardiovascular system and for ensuring stable and healthy production in poultry farms.

The heart is a vital organ that regulates the circulatory system and is responsible for delivering oxygen and nutrients to the organism. Chicks, especially broiler types, are highly sensitive to various physiological processes aimed at developing fat and muscle tissues. Heart morphogenesis, i.e., the embryonic and post-embryonic development of the heart, is regulated by various biological and molecular mechanisms. In broiler chicks, the heart forms during the embryonic stage and becomes functional during the post-embryonic stage. This article aims to analyze the formation of the heart in broiler chicks of the ROSS-308 cross and the factors influencing this process.

The development of the heart in broiler chicks corresponds to various changes during different age stages (from the deep embryonic phase onward). For instance, Yu. V. Goncharov (2013) noted in his study that the heart of broiler chicks begins its functional activity during the first week and develops step by step.

Studies by Petrova (2015) and L. N. Tikhomirov (2017) discussed the importance of general biomechanical parameters and circulatory system function in heart formation. Their analyses indicated that optimal heart performance is crucial for high productivity.

The heart structure and anatomy of broiler chicks belonging to the ROSS-308 cross are healthy and capable of sustaining high-intensity demands. This cross is distinguished by a more complex and rapidly developing heart. V. Ya. Ivanov (2018) highlighted in his research the favorable morphological characteristics of the heart in this cross.

High-intensity workloads, such as physical or environmental stress, elicit specific

responses from the heart, as reflected in the studies by Yu. K. Gavrilova and V. I. Berezin (2020).

In broilers, heart diseases may arise, especially in cases of impaired cardiac function. L. N. Bondarenko (2016) investigated the effects of cardiac diseases on broiler hearts and their development. Additionally, dysfunctions in heart activity may lead to poor or inadequate physiological responses.

Two main conditions are typically observed: disruption in heart rhythm and impaired cardiac function, particularly under conditions requiring high-intensity parallel workload.

Environmental factors also significantly affect the cardiovascular system, including nutrition, air quality, and stress levels. For example, I. I. Skvortsov (2014) discussed the impact of environmental factors on heart development in his research.

Enriched nutrition, high-quality genetic material, and optimal climate conditions contribute to the robust development of the heart.

New research is needed to study the heart of ROSS-308 broiler chicks more precisely and comprehensively. Currently, new biomechanical models and biological techniques are being developed to better understand heart morphogenesis. For example, Yu. V. Chekanov (2019) proposed practical applications and computational models for studying microscopic and macroscopic changes in the hearts of broilers.

Conclusion

Studying the morphogenesis of the heart in broiler chicks, particularly those belonging to the ROSS-308 cross, provides researchers with specialized insights into the efficiency of the cardiovascular system during the developmental stages. Such investigations are crucial for identifying potential health issues, preventing diseases, and evaluating the influence of genetic and environmental factors. Research in this area may serve as a foundation for future studies aimed at discovering new directions in the development of the broiler heart.

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MAKTABGACHA VA MAKTAB TA'LIM TIZIMIDA KORRUPSIYAGA QARSHI KURASHISH

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Eng muhimi, jamiyatda korruptsiya muammosini jamoatchilik muhokamasiga olib chiqadigan ochiq tizim, ochiq muhit yaratildi. Ayniqsa, ommaviy axborot vositalarining bu boradagi o'rni va ta'siri ortib bormoqda.

Avvalo, korruptsiyaning omillariga qarshi kurashilmoqda. Masalan, yerni hokim qarori bilan ajratishdan to'liq voz kechib, auksion tizimiga o'tkazilgani natijasida bu tizim xalqchil bo'ldi. "Shaffof qurilish" dasturi joriy etilganidan keyin bu sohada ham ijobiy o'zgarishlar sezildi.

O'zbekistonning yangilangan siyosati jamiyatda adolat va qonun ustuvorligini oliy darajaga ko'tarish, zamonaviy samarali davlat boshqaruvini joriy etish, davlat hizmatchilarida korruptsiyaviy holatlarning barcha ko'rinishlariga qat'iy chidamsizlik ruhiyatini shakllantirish, xalq manfaatlarini so'zsiz ta'minlash kabi yuksak g'oyalarga tayanmoqda. Avvalo, ushbu islohotlarning tub zamirida Prezident Sh.M.Mirziyoyev tomonidan ilgari surilgan ustuvor g'oya «Xalq davlat organlariga emas, balki davlat organlari xalqqa xizmat qilishi kerak» asosiy tamoyilga muvofiq barcha imkoniyatlar xalqimiz manfaatlari yo'lida safarbar etilishi ustuvor vazifa etib belgilanmoqda. Bu o'rinda islohotlarning chinakam natijadorligiga erishish maqsadida davlat va jamiyatning har bir sohasida korruptsiyaga qarshi kurashish samaradorligini izchil ta'minlab borish alohida ahamiyat kasb etadi. Ta'kidlash joizki, korruptsiyaga qarshi kurashish sohasida davlat siyosatining samarali amalga oshirilishini ta'minlash hamda korruptsiya ko'rinishlarining oqibati bilan emas, balki sabab va shart-sharoitlarini bartaraf etish bo'yicha xalqaro tajribada keng qo'llanilib kelayotgan zamonaviy jinoyatchilikni oldini olish choralarni milliy amaliyotga tatbiq etishni taqozo qilmoqda. Maktabgacha va maktab ta'lim tizimini isloh qilishda pedagog kadrlar va ta'lim sifatini oshirish bilan bir qatorda korruptsiyaga qarshi ham ayovsiz kurashib kelinmoqda. Bu o'rinda Prezidentning 2020 yil 29 iyundagi «O'zbekiston Respublikasida korruptsiyaga qarshi kurashish tizimini takomillashtirish bo'yicha qo'shimcha chora-tadbirlar to'g'risida»gi PF-6013-sonli Farmonga asosan yangi tashkil etilgan Korruptsiyaga qarshi kurashish agentligining asosiy vazifalaridan biri etib 2020-2021 yillarda barcha davlat va xo'jalik boshqaruvi organlari, davlat korxonalari va ustav kapitalida davlat ulushi bo'lgan korxonalar, shu jumladan maktabgacha va maktab ta'lim tizimida korruptsiyaga qarshi ichki idoraviy nazorat tizimlarini bosqichma-bosqich joriy etish belgilandi. Ayni paytda Korruptsiyaga qarshi kurashish agentligi, Bosh prokuratura,

Hisob palatasi bilan hamkorlikda maktabgacha va maktab ta'lim tizimidagi korrupsiyaga qarshi kurash ishlari olib borilmoqda. Ta'lim tizimida Korrupsiyaga qarshi kurashish bo'yicha "Yo'l xaritasi" ishlab chiqilib, tizimda korrupsiyani oldini olish bo'yicha tizimli ishlar amalga oshirilmoqda. Shuningdek, Vazirlikning ichki audit, moliyaviy va huquqiy nazorat xizmati ham mavjud bo'lib, doimiy budjet mablag'larini qonuniy sarflarinishi ustidan nazorat olib bormoqda. Maktabgacha ta'lim tizimida jinoiy javobgarlikka tortilgan shaxsning ishlashini cheklashdan iborat. Bu – "Maktabgacha ta'lim va tarbiya to'g'risida"gi qonunida belgilandi. Ma'lumot uchun, yuqoridagi qonunning 44-moddasiga ko'ra, qasddan jinoyatlar sodir etgani uchun ilgari hukm qilingan shaxslar maktabgacha ta'lim tashkilotlarida pedagogik faoliyat bilan shug'ullanishi mumkin emas. Bu borada xorijiy amaliyot tahlili shuni ko'rsatdiki, bozor iqtisodiyoti qonunlarga asoslangan mamlakatlarda korrupsiyaga qarshi kurashish sohasida davlat va xususiy sektor ishtirokchilarining xalqaro standartlar, qonun hujjatlari va boshqa zamonaviy usullarga muvofiq samarali faoliyat yuritishini ta'minlovchi muhim vositalardan biri o'z tarkibida korrupsiyaga qarshi kurashish komplayens nazorat (compliance control) tizimi tashkil etildi. Korrupsiyaga qarshi komplayens nazorati – davlat va xo'jalik boshqaruvi organlari, xo'jalik yurituvchi sub'yektlar faoliyati shu jumladan maktabgacha va maktab ta'lim tizimida faoliyat ko'rsatayotgan ta'lim tashkilotlarini korrupsiyaga qarshi kurashish sohasidagi xalqaro standartlar, qonun va boshqa me'yoriy huquqiy hujjatlarga muvofiq tashkil etuvchi, korrupsiya xavf-xatarlari, manfaatlar to'qnashuvini o'z vaqtida aniqlash va chek qo'yish, qonun buzilishi va korrupsiyaga oid huquqbuzarliklarni oldini olish va ular haqida xabar berishni o'zida mujassam etgan profilaktik tizimdir.

OVQATLANISH GIGIENASI

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Annotatsiya: Ushbu maqolada inson salomatligini saqlashda ovqatlanish gigienasining tutgan o'rnini yoritilgan. To'g'ri ovqatlanish madaniyati, sanitariya-gigiena qoidalariga rioya etish, oziq-ovqat mahsulotlarining sifati, saqlanishi va iste'mol qilish shartlari tahlil qilingan. Maqolada ovqatlanish gigienasi bo'yicha mavjud ilmiy adabiyotlar tahlil qilinadi, amaliy metodlar va natijalar asosida gigienik xulq-atvorni shakllantirishning samarali usullari ko'rib chiqiladi.

Kalit so'zlar: Ovqatlanish gigienasi, sanitariya, sog'liqni saqlash, oziq-ovqat sifati, toza suv, infeksiya profilaktikasi, gigiena madaniyati.

Ovqatlanish gigienasi — inson salomatligini saqlashda eng muhim omillardan biri hisoblanadi. To'g'ri tashkil etilgan ovqatlanish nafaqat jismoniy o'sish va rivojlanishni ta'minlaydi, balki turli yuqumli va yuqumsiz kasalliklarning oldini olishga ham xizmat qiladi. Inson organizmi uchun zarur bo'lgan oзуqaviy moddalarni yetarli va xavfsiz shaklda iste'mol qilish, ovqat tayyorlash va saqlash jarayonida sanitariya-gigiena talablariga rioya qilish orqali amalga oshiriladi. Bugungi kunda noto'g'ri ovqatlanish, ifloslangan mahsulotlar yoki gigiena qoidalariga amal qilmaslik oqibatida yuzaga kelayotgan sog'liq muammolari dolzarb masalaga aylangan.

Ovqatlanish gigienasi oziq-ovqat mahsulotlarini tayyorlash, saqlash va iste'mol qilish jarayonida tozalik, xavfsizlik va sog'liqni saqlash qoidalariga rioya qilishni o'z ichiga olgan muhim amaliyotdir. Bu qoidalar oziq-ovqat orqali yuqadigan kasalliklar (masalan, salmonellyoz, E.coli infeksiyasi, botulizm) va oziq-ovqat zaharlanishining oldini olishga yordam beradi. Quyida ovqatlanish gigienasining har bir jihati batafsil yoritilgan:

Shaxsiy gigiena

Shaxsiy tozalik ovqatlanish gigienasining asosiy poydevoridir, chunki inson tanasi bakteriyalar va mikroblarni oziq-ovqatga o'tkazishi mumkin.

- Qo'l yuvish:

- Ovqat tayyorlash yoki iste'mol qilishdan oldin qo'llarni iliq suv va sovun bilan kamida 20 soniya davomida yuvish kerak. Bu vaqt ichida qo'lning barcha qismlari, shu jumladan barmoqlar orasi, tirnoq atrofidagi joylar va bilaklar tozalanadi.

- Qo'l yuvish ayniqsa xom go'sht, baliq yoki tuxum bilan ishlashdan oldin va keyin muhimdir.

- Agar sovun va suv mavjud bo'lmasa, kamida 60% spirtli antiseptik vositalardan foydalanish mumkin, ammo bu qo'l yuvishni to'liq almashtirmaydi.

- Soch va kiyim tozaligi:

- Sochlar ovqatga tushmasligi uchun ularni yig'ib qo'yish yoki maxsus bosh kiyim (soch to'ri yoki kepka) kiyish tavsiya etiladi.

- Ovqat tayyorlashda toza kiyim, ideal holda apron kiyish kerak. Kiyimda axloqsizlik yoki mikroblar bo'lsa, ular ovqatga o'tishi mumkin.

- Tirnoqlar va teri:

- Tirnoqlarni qisqa va toza tutish lozim, chunki uzun tirnoqlar ostida mikroblar to'planishi mumkin.

- Qo'lda ochiq yaralar yoki kesiklar bo'lsa, ularni suv o'tkazmaydigan yamoq bilan yopish va qo'lqop kiyish kerak.

- Kasallik holatida:

- Agar sizda oshqozon-ichak kasalliklari, gripp yoki boshqa yuqumli kasalliklar bo'lsa, ovqat tayyorlashdan tiyilish kerak, chunki mikroblar ovqat orqali boshqalarga yuqishi mumkin.

Oshxona va jihozlar tozaligi

Oshxonada ishlatiladigan barcha sirtlar va jihozlar toza bo'lishi ovqatlanish gigienasining muhim qismidir.

- Ish sirtlari:

- Oshxona stoli, kesish taxtasi va pechka kabi sirtlar har foydalanishdan oldin va keyin tozalanishi kerak. Buning uchun issiq suv, sovun yoki maxsus tozalovchi vositalardan foydalanish mumkin.

- Ayniqsa, xom go'sht, baliq yoki parranda go'shti bilan ishlagan sirtlarni dezinfeksiya qilish zarur, chunki ularda salmonella yoki kampilobakter kabi zararli bakteriyalar bo'lishi mumkin.

- Jihozlar va idish-tovoqlar:

- Pichoqlar, vilkalar, qoshiqlar, kesish taxtalari va boshqa jihozlar har foydalanishdan keyin yuvilishi va quritilishi kerak.

- Idish yuvish mashinasidan foydalanish samarali, chunki u yuqori haroratda mikroblarni yo'q qiladi. Agar qo'lda yuvilsa, issiq suv va yuvish vositasidan foydalanish lozim.

- Kesish taxtalari uchun alohida taxtalardan foydalanish tavsiya etiladi: biri xom go'sht va baliq uchun, boshqasi sabzavotlar va tayyor ovqatlar uchun.

- Oshxona sochiqlari va shimgichlar:
 - Oshxona sochiqlari va shimgichlar muntazam yuvilishi yoki almashtirilishi kerak, chunki ular nam bo‘lib mikroblar ko‘payishi uchun qulay muhit yaratadi.
 - Sochiqlarni har kuni yuvish yoki bir marta ishlatiladigan qog‘oz sochiqlardan foydalanish afzal.
 - Muzlatgich va oshxona mebellari:
 - Muzlatgich ichi muntazam tozalanib, oziq-ovqat qoldiqlari va chirigan mahsulotlar olib tashlanishi kerak.
 - Oshxona javonlari va shkaf ichlari chang va axloqsizlikdan toza bo‘lishi lozim.
 - Oziq-ovqat mahsulotlarini saqlash
 - Oziq-ovqat mahsulotlarini to‘g‘ri saqlash ularning xavfsizligini ta‘minlaydi va buzilishini oldini oladi.
 - Harorat nazorati:
 - Muzlatgich harorati 0–4°C, muzlatkich esa -18°C yoki undan past bo‘lishi kerak.
 - Tayyor ovqatlarni xona haroratida 2 soatdan ortiq qoldirmaslik kerak, chunki bu haroratda bakteriyalar tez ko‘payadi.
 - Issiq ovqatlarni sovutgandan keyin muzlatgichga qo‘yish lozim. Issiq ovqatni darhol muzlatgichga qo‘yish uning haroratini oshirib, boshqa mahsulotlarning buzilishiga olib kelishi mumkin.
 - Xom va tayyor mahsulotlarni ajratish:
 - Xom go‘sht, baliq va parranda go‘shtini tayyor ovqatlardan alohida saqlash kerak. Masalan, xom go‘shtni muzlatgichning pastki qismida, yopiq idishda saqlash lozim, chunki uning sharbatlari boshqa ovqatlarga tushishi mumkin.
 - Xom mahsulotlar uchun alohida idishlar va jihozlar ishlatish tavsiya etiladi.
 - Yaroqlilik muddati:
 - Oziq-ovqat mahsulotlarining yaroqlilik muddatini tekshirish va muddati o‘tgan mahsulotlarni iste‘mol qilmaslik kerak.
 - Agar mahsulotning hidi, rangi yoki tuzilishi o‘zgargan bo‘lsa, uni tashlab yuborish lozim, hatto yaroqlilik muddati o‘tmagan bo‘lsa ham.
 - Qadoqlash:
 - Oziq-ovqatlarni havo o‘tkazmaydigan idishlarda yoki maxsus qadoqlarda saqlash ularning yangiligini uzaytiradi.
 - Quruq mahsulotlar (un, guruch, makaron) namlikdan himoyalangan quruq joyda saqlanishi kerak.
- Ovqat tayyorlashda gigiena
- Ovqat tayyorlash jarayonida to‘g‘ri usullardan foydalanish mikroblarning tarqalishini oldini oladi.

- Xom mahsulotlarni pishirish:
 - Go'sht, baliq va tuxum kabi mahsulotlar to'liq pishirilishi kerak. Masalan:
 - Parranda go'shti: ichki harorati kamida 75°C.
 - Mol go'shti: kamida 70°C (o'rta pishganlik uchun).
 - Tuxum: sariq qismi qattiq bo'lguncha pishirilishi kerak, agar xom iste'mol qilinmasa.
 - Haroratni o'lchash uchun maxsus oshxona termometridan foydalanish mumkin.
- Meva va sabzavotlarni yuvish:
 - Meva va sabzavotlarni oqar suv ostida yaxshilab yuvish kerak. Qattiq terili mahsulotlar (kartoshka, sabzi) uchun maxsus cho'tka ishlatilishi mumkin.
 - Agar meva yoki sabzavot xom iste'mol qilinadigan bo'lsa, ularni yuvish uchun maxsus oziq-ovqat dezinfeksiyalovchi vositalardan foydalanish mumkin.
- Chuchvara va boshqa mahsulotlar:
 - Chuchvara, qaymoq, sut kabi tez buziladigan mahsulotlarni xarid qilgandan so'ng darhol muzlatgichga qo'yish kerak.
 - Ochilgan sut mahsulotlarini 2–3 kundan ortiq saqlamaslik tavsiya etiladi.
- Ovqatni qayta isitish:
 - Qoldiq ovqatlarni qayta isitganda, ularning ichki harorati kamida 70°C ga yetishi kerak.
 - Ovqatni bir necha marta qayta isitishdan saqlanish lozim, chunki har isitishda uning sifati yomonlashadi va mikroblar ko'payishi mumkin.
- Ovqatlanish jarayonida gigiena
- Ovqat iste'mol qilishda ham tozalik qoidalariga rioya qilish muhim.
- Toza idishlar:
 - Ovqatni toza idishlarda iste'mol qilish kerak. Idishlarda eski ovqat qoldiqlari bo'lsa, bu mikroblar ko'payishiga olib keladi.
 - Agar umumiy ovqatlanish joylarida (restoran, kafe) ovqatlansangiz, idishlarning tozaligiga e'tibor bering.
- Ovqatni qoldirmaslik:
 - Ovqatni xona haroratida uzoq vaqt (2 soatdan ortiq) qoldirmaslik kerak. Agar ovqat iste'mol qilinmasa, uni muzlatgichga qo'yish lozim.
 - Issiq iqlim sharoitida (30°C dan yuqori) ovqatni 1 soatdan ortiq qoldirmaslik kerak.
- Qoldiq ovqatlar:
 - Qoldiq ovqatlarni kichik idishlarda saqlash va ularni 2–3 kun ichida iste'mol qilish tavsiya etiladi.
 - Agar qoldiq ovqat uzoq muddat saqlanadigan bo'lsa, uni muzlatkichda saqlash kerak.

Ovqatlanish gigienasiga rioya qilish nafaqat shaxsiy sog‘liqni, balki oila a‘zolari va atrofdagilarning salomatligini ham himoya qiladi. Agar sizda ma‘lum bir mahsulot, tayyorlash usuli yoki holat bo‘yicha qo‘shimcha savollar bo‘lsa, aniq misollar bilan so‘rashingiz mumkin, men yanada batafsil javob beraman!

Xulosa

Ovqatlanish gigienasi – inson salomatligini saqlash va mustahkamlashda asosiy vositalardan biridir. Oziq-ovqat mahsulotlarini to‘g‘ri tanlash, saqlash, ishlov berish, iste‘mol qilish jarayonida sanitariya-gigiena qoidalariga rioya qilish kasalliklarning oldini oladi. Bu borada jamoatchilikni xabardor qilish, ta‘lim tizimiga gigiena madaniyatini kiritish va nazorat mexanizmlarini kuchaytirish zarur.

Maktab va bog‘chalarda ovqatlanish gigienasiga bag‘ishlangan amaliy mashg‘ulotlar o‘tkazilsin.

Ommaviy axborot vositalarida gigiena bo‘yicha targ‘ibot dasturlari ko‘paytirilsin.

Oziq-ovqat mahsulotlari ishlab chiqaruvchilarga gigienik me‘yorlar bo‘yicha majburiy malaka oshirish kurslari joriy etilsin.

Maktab oshxonalari va jamoat ovqatlanish joylarida muntazam sanitariya tekshiruvlari kuchaytirilsin.

Har bir oila a‘zolari gigiena madaniyatining muhim ekanini tushunib, amalda qo‘llashi uchun keng ko‘lamli ijtimoiy loyihalar tashkil etilsin.

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WIRELESS NETWORKS: INTEGRATION INTO INDUSTRIAL AUTOMATION SYSTEMS AND EQUIPMENT MONITORING

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Abstract. This article analyzes the role and prospects of wireless networks in the context of modern industrial automation systems. The key advantages of implementing wireless technologies are considered, such as reducing infrastructure costs, increasing flexibility, and monitoring capabilities in hard-to-reach areas. The main wireless standards, including Wi-Fi, Bluetooth, Zigbee, Z-Wave, LoRa/Loren and 5G, are analyzed in detail, taking into account their specifics and applicability in industrial conditions. The paper also focuses on challenges related to reliability, safety, and electromagnetic interference. It is concluded that wireless solutions are strategically important for the development of Industry 4.0 and the digital transformation of production facilities.

Keywords: wireless networks, industrial automation, industry 4.0, Internet of Things (IoT), Wi-Fi, 5G, Zigbee, LoRaWAN, industrial safety, automated control systems.

БЕСПРОВОДНЫЕ СЕТИ: ИНТЕГРАЦИЯ В ПРОМЫШЛЕННЫЕ СИСТЕМЫ АВТОМАТИЗАЦИИ И МОНИТОРИНГ ОБОРУДОВАНИЯ

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Аннотация. Данная статья посвящена анализу роли и перспектив беспроводных сетей в контексте современных промышленных систем автоматизации. Рассматриваются ключевые преимущества внедрения беспроводных технологий, такие как снижение затрат на инфраструктуру, повышение гибкости и возможности мониторинга в труднодоступных зонах. Подробно анализируются основные беспроводные стандарты, включая Wi-Fi, Bluetooth, Zigbee, Z-Wave, LoRa/LoRaWAN и 5G, с учётом их специфики и применимости в промышленных условиях. В работе также уделено внимание

вызовам, связанным с надёжностью, безопасностью и электромагнитными помехами. Делается вывод о стратегической важности беспроводных решений для развития Индустрии 4.0 и цифровой трансформации производственных процессов, а также о перспективах дальнейшего развития этих технологий.

Ключевые слова: беспроводные сети, промышленная автоматизация, индустрия 4.0, интернет вещей (IoT), Wi-Fi, 5G, Zigbee, LoRaWAN, промышленная безопасность, автоматизированные системы управления.

Введение

Современная промышленность постоянно стремится к оптимизации производственных процессов, повышению эффективности, снижению затрат и улучшению безопасности. В этом контексте промышленные системы автоматизации играют ключевую роль, обеспечивая точный контроль и управление на всех этапах производства. Традиционно эти системы полагались на проводные соединения для передачи данных, что обеспечивало высокую надёжность и стабильность. Однако, с развитием технологий, появлением концепций Интернета вещей (IoT), Индустрии 4.0 и ростом требований к гибкости производства, беспроводные сети начинают активно внедряться в промышленные среды.

Внедрение беспроводных технологий в промышленные системы автоматизации представляет собой значительный сдвиг парадигмы. Оно обещает кардинально изменить способы сбора данных, управления оборудованием и взаимодействия между различными компонентами производственной инфраструктуры. Потенциал беспроводных решений огромен: они могут упростить развертывание новых систем, снизить затраты на кабельную инфраструктуру, обеспечить мониторинг в труднодоступных местах и повысить мобильность персонала и оборудования. Однако, промышленная среда предъявляет особые требования к надёжности, безопасности и предсказуемости передачи данных, что создаёт определённые вызовы для беспроводных технологий.

Цель данной статьи — рассмотреть ключевые аспекты применения беспроводных сетей в промышленных системах автоматизации. Мы проанализируем преимущества и недостатки таких решений, изучим основные беспроводные стандарты и технологии, используемые в промышленности, а также обсудим вызовы и перспективы их дальнейшего развития.

Методология и результаты

Преимущества внедрения беспроводных сетей в промышленности

Беспроводные технологии приносят в промышленную автоматизацию ряд существенных преимуществ, которые стимулируют их активное внедрение:

1. **Снижение затрат на инфраструктуру:** Отсутствие необходимости прокладки километров кабелей значительно сокращает расходы на материалы, монтаж и обслуживание. Это особенно актуально для крупных производственных площадок или объектов с постоянной перепланировкой.

2. Гибкость и масштабируемость: Беспроводные системы легко адаптируются к изменениям в производственных процессах. Добавление новых датчиков или перемещение оборудования становится значительно проще и быстрее, не требуя перекладки кабелей.

3. Мониторинг в труднодоступных и опасных местах: Беспроводные датчики могут быть установлены в зонах, недоступных для проводных систем (например, вращающиеся детали, движущиеся платформы, опасные химические среды), что позволяет собирать критически важные данные для повышения безопасности и оптимизации процессов.

4. Улучшенная мобильность: Персонал, роботы и транспортные средства могут свободно перемещаться по цеху, оставаясь подключенными к сети, что повышает оперативность и эффективность работы.

5. Оперативное развертывание: Внедрение беспроводных систем обычно занимает меньше времени по сравнению с проводными аналогами, что позволяет быстрее запускать новые проекты и модернизировать существующие.

6. Управление ресурсами и энергоэффективность: Беспроводные датчики могут предоставлять данные о потреблении энергии, состоянии оборудования, температуре и других параметрах, что позволяет оптимизировать использование ресурсов и проводить предиктивное обслуживание.

Основные беспроводные технологии и стандарты в промышленности

Выбор беспроводной технологии для промышленной автоматизации зависит от конкретных требований к пропускной способности, дальности, энергопотреблению и задержке. Наиболее распространёнными стандартами являются:

1. Wi-Fi (IEEE 802.11):

о Применение: Идеален для передачи больших объёмов данных, таких как видеопотоки с IP-камер, данные SCADA-систем, а также для подключения мобильных устройств и планшетов операторов.

о Особенности: Высокая пропускная способность, широкое распространение, но относительно высокое энергопотребление и потенциальная восприимчивость к помехам в промышленных условиях. Развитие стандартов Wi-Fi 6/6E (802.11ax) улучшает производительность в плотных средах.

2. Bluetooth (IEEE 802.15.1) / Bluetooth Low Energy (BLE):

о Применение: BLE особенно популярен для маломощных датчиков, устройств мониторинга состояния оборудования, а также для взаимодействия с мобильными устройствами в непосредственной близости.

о Особенности: Низкое энергопотребление (для BLE), простота настройки, но ограниченная дальность действия и пропускная способность.

3. Zigbee (IEEE 802.15.4):

о Применение: Широко используется для создания беспроводных сенсорных сетей (WSN) и управления устройствами, где требуется низкое энергопотребление, небольшая скорость передачи данных и возможность формирования самоорганизующихся Mesh-сетей. Примеры: системы мониторинга температуры, влажности, освещения.

- о Особенности: Очень низкое энергопотребление, высокая надёжность благодаря Mesh-топологии (данные могут передаваться через промежуточные узлы), но низкая пропускная способность.

4. Z-Wave:

- о Применение: Аналогично Zigbee, применяется в основном для домашней и лёгкой промышленной автоматизации, особенно для систем управления освещением, замками и датчиками.

- о Особенности: Более простой протокол по сравнению с Zigbee, Mesh-сеть, низкое энергопотребление, но проприетарный стандарт, что ограничивает выбор оборудования.

5. LoRa / LoRaWAN:

- о Применение: Технология LPWAN (Low-Power Wide-Area Network), предназначенная для передачи небольших объёмов данных на большие расстояния с минимальным энергопотреблением. Идеальна для мониторинга удалённых активов, счётчиков, состояния окружающей среды.

- о Особенности: Отличная дальность связи (километры), сверхнизкое энергопотребление (батареи могут работать годами), но очень низкая пропускная способность и относительно высокая задержка.

6. Cellular (4G/5G):

- о Применение: Для обеспечения связи на больших территориях, между удалёнными объектами, для высокоскоростной передачи данных и для критически важных приложений, требующих низкой задержки (в случае 5G).

- о Особенности: Широкое покрытие, высокая пропускная способность, но значительное энергопотребление и зависимость от операторов связи. 5G с его возможностями URLLC (Ultra-Reliable Low-Latency Communications) и mMTC (massive Machine Type Communications) обещает революционизировать промышленные беспроводные сети, обеспечивая крайне низкую задержку и подключение огромного количества устройств.

Вызовы и проблемы внедрения

Несмотря на очевидные преимущества, внедрение беспроводных сетей в промышленные системы автоматизации сопряжено с рядом серьёзных вызовов:

1. Надёжность и стабильность: Промышленные среды характеризуются наличием большого количества металлических конструкций, электромагнитных помех (от двигателей, сварочного оборудования), что может вызывать затухание сигнала, прерывания связи и непредсказуемые задержки. Для критически важных систем потеря данных или задержка могут привести к авариям или простоям.

2. Безопасность: Беспроводные сети более уязвимы для перехвата данных и несанкционированного доступа. В промышленных системах утечка данных или злонамеренное вмешательство могут иметь катастрофические последствия, включая саботаж производства или кражу интеллектуальной собственности. Необходимы строгие протоколы шифрования и аутентификации.

3. Энергопотребление: Многие промышленные датчики должны работать автономно в течение длительного времени. Обеспечение низкого

энергопотребления для беспроводных устройств является критически важной задачей, особенно для датчиков, расположенных в труднодоступных местах.

4. Совместимость и интероперабельность: Наличие множества беспроводных стандартов и проприетарных решений может усложнить интеграцию оборудования от разных производителей. Необходимость обеспечить бесшовное взаимодействие между устройствами и системами является ключевой.

5. Планирование и оптимизация сети: Развёртывание надёжной беспроводной сети в условиях промышленных помех требует тщательного планирования, анализа радиочастотной среды и использования специализированного оборудования для устранения мёртвых зон и минимизации помех.

Перспективы развития

Будущее беспроводных сетей в промышленной автоматизации выглядит многообещающе. Основные направления развития включают:

- Распространение 5G: Технологии 5G, особенно её промышленные версии (например, private 5G networks), предлагают беспрецедентную надёжность, низкую задержку и высокую пропускную способность, делая их пригодными для самых критичных приложений, таких как управление роботами в реальном времени.

- Использование Edge Computing: Обработка данных ближе к источнику (на периферии сети) позволяет снизить задержки, уменьшить нагрузку на центральные серверы и повысить скорость принятия решений. Беспроводные сети будут играть ключевую роль в подключении этих периферийных устройств.

- Искусственный интеллект и машинное обучение: Интеграция ИИ с беспроводными сетями позволит создавать более интеллектуальные системы, способные к самоорганизации, предиктивному обслуживанию, аномальному обнаружению и оптимизации производственных процессов.

- Развитие стандартов безопасности: Постоянное совершенствование протоколов шифрования и аутентификации, а также разработка новых методов обнаружения угроз, будут ключевыми для обеспечения кибербезопасности промышленных беспроводных сетей.

- Гибридные решения: Комбинация проводных и беспроводных технологий, где проводные сети используются для критически важных магистралей, а беспроводные — для гибкого подключения периферийных устройств, станет распространённой практикой.

Заключение

Беспроводные сети быстро становятся неотъемлемой частью промышленных систем автоматизации, предлагая значительные преимущества в гибкости, масштабируемости и снижении затрат. Разнообразие доступных беспроводных технологий позволяет выбрать оптимальное решение для каждой конкретной задачи, будь то высокоскоростная передача видео или мониторинг удалённых датчиков с низким энергопотреблением.

Несмотря на существующие вызовы, связанные с надёжностью, безопасностью и совместимостью, активные исследования и разработки в этой

области, особенно в контексте 5G и граничных вычислений, обещают значительно расширить возможности и сферы применения беспроводных технологий в промышленности. В конечном итоге, их повсеместное внедрение приведёт к созданию более интеллектуальных, адаптивных и эффективных производственных систем, что является залогом успешного развития Индустрии 4.0 и цифровой трансформации мировой экономики.

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FAOL INNOVATSIYALARNING YOSHLAR TA'LIMIGA TA'SIRI

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Annotatsiya: Ushbu maqolada innovatsion texnologiyalardan keng ko'lamda foydalanish va ularning ta'lim sohasidagi o'rnini oshirish shuningdek yoshlar hayotida faol foydalanishni ta'minlash borasida fikr yuritiladi. Innovatsion texnologiyalardan qanday foydalanish konikmalari, ularga qanday investitsiya kiritilishi haqida bundan tashqari talaba hamda o'quvchi yoshlar o'rtasida bu kabi sohalarni kengaytirish metodlari yoritilgan va avval qo'llanilgan tajribalar haqida ma'lumotlar keltirilgan. Shuningdek yoshlarning zamonaviy ta'limga qiziqishlarini oshirish hamda ularga to'g'ri yo'l va ko'nikmalar berish bundan tashqari ularning muntazam faoliyatlarida taqdirlash hamda turli xil olimpiadalar tashkil qilish bilan yanada mukammallashtirish haqida batafsil ma'lumotlar berilgan. Shuningdek endi ommalashayotgan lekin amalda qo'llanilmagan kiber sport turini dunyo miqyosiga olib chiqish bundan mustasno emas. Bu ma'lumotlarga asoslangan holda faol texnologiyalar nafaqat ta'lim balki sport sohasida ham yetuk kadrlar yetishib chiqishini isbotlaydi.

Kalit so'zlar: Kiber sport, raqamli texnologiyalar, faol innovatsiyalar, suniy intellekt, IT park, robototexnika, skill girls, Digital Uzbekistan 2030, Investitsiya kiritish.

Annotation: This article discusses the broad application of innovative technologies and their increasing role in the field of education, as well as ensuring their active use in the lives of young people. It outlines the skills needed to use such technologies, the types of investments required, and methods for expanding these fields among students and pupils. The article also provides insights into previously implemented practices. Additionally, it highlights strategies for increasing youth interest in modern education, offering proper guidance and skills, and enhancing their development through regular activities, recognition, and organizing various competitions and Olympiads. The article also explores the potential of emerging but not yet widely implemented fields such as e-sports, and their prospects for gaining international recognition. Based on this information, it is evident that active technologies can contribute to the training of highly qualified professionals not only in education but also in the field of sports.

Key words: E-sports, digital technologies, active innovations, artificial intelligence, IT Park, robotics, Skill Girls, Digital Uzbekistan 2030, investment.

Аннотация: В данной статье рассматривается широкое использование

инновационных технологий, а также повышение их роли в сфере образования и обеспечение их активного применения в жизни молодежи. Освещаются навыки использования инновационных технологий, виды необходимых инвестиций, а также методы расширения таких направлений среди студентов и школьников. Приводится информация о ранее реализованных практиках. Кроме того, подробно рассматриваются вопросы повышения интереса молодежи к современному образованию, предоставления им правильного направления и навыков, а также совершенствования их деятельности посредством поощрения, организации различных олимпиад и конкурсов. Также внимание уделено развивающемуся, но пока что недостаточно внедренному виду деятельности — киберспорту, и его потенциальному выводу на международный уровень. На основе представленных данных делается вывод, что активные технологии способствуют подготовке высококвалифицированных кадров не только в образовании, но и в спортивной сфере.

Ключевые слова: Киберспорт, цифровые технологии, активные инновации, искусственный интеллект, IT-парк, робототехника, Skill Girls, Цифровой Узбекистан 2030, инвестиции.

Kirish. Bugungi kunda texnologik rivojlanish va raqamli innovatsiyalar ta'lim tizimining barcha jabhalariga chuqur ta'sir ko'rsatmoqda. Ayniqsa, yoshlar ta'limida bu o'zgarishlar yangi imkoniyatlar yaratib, an'anaviy o'qitish usullarini takomillashtirishga xizmat qilmoqda. Ushbu maqolada faol innovatsiyalar, jumladan sun'iy intellekt, raqamli ta'lim platformalari va STEM (fan, texnologiya, muhandislik va matematika) yo'nalishlaridagi dasturlar orqali yoshlar ta'limiga qanday ta'sir ko'rsatayotgani tahlil qilinadi^[1]. Malum qilishimiz joizki O'rta Osiya mamlakatlari Yevropa va Amerika dvalatlaridek rivojlangan davlatlar bilan rivojlanganlik hamda iqtisodiy taraflama raqobatlasha olmasligining sababi hali ularga nisbatan ancha yoshligi hamda dengiz bilan chegaradosh emasligi bo'lsa lekin so'ngi yillarda ta'lim sohasiga bo'lgan etibor sababli ancha ilg'orlashib bormoqda. Bu esa bilimga tikilgan kattadan kata etibor hamda investitsiyaning yaqqol timsolidir.

Asosiy qism. Bugungi kunda Yurtimizda talimga bo'lgan etibor kuchaymoqda buning natijasida turli xil yangidan yangi universitetlar maktablar tashkil etildi va ularning barchasi zamonaviy texnologiyalar bilan taminlanganligi bu islohotning yanda samarali bo'lishini taminlamoqda. Bunga misol qilib 2021-yil Yurtimizda muhtaram Prezidentimiz Shavkat Mirziyoyev Miromonovich farmonlari bilan har bir viloyatlarda Prezident maktablari tashkil etildi. Bugungi kunda bu maktablardan ko'plab yetuk kadrlar yetishib chiqmoqda. UNICEF tomonidan amalga oshirilgan "Eduten" raqamli matematika o'qitish platformasining O'zbekistonda o'tkazilgan tajriba loyihasi natijalari ta'limda innovatsion yondashuvlarning samaradorligini

ko'rsatadi. 2023-yilda Toshkent va Toshkent viloyatidagi 5-sinf o'quvchilari bilan o'tkazilgan tajriba davomida o'quvchilarning matematika ko'nikmalarida o'rtacha 16.9% ga o'sish kuzatildi. Ushbu platforma o'quvchilarga o'zlashtirish darajasiga qarab moslashtirilgan topshiriqlarni taqdim etib, o'qituvchilarga esa o'quvchilarning rivojlanishini tezkor baholash imkonini berdi^[2]. Yoshlarni raqamli ko'nikmalar bilan ta'minlash. O'zbekistonda yoshlarni raqamli ko'nikmalar bilan ta'minlashga qaratilgan bir qator dasturlar amalga oshirilmoqda. Masalan, "Yoshlar raqamli ko'nikmalar" dasturi doirasida IT Park va UNDP hamkorligida o'tkazilgan tashabbus yoshlarni onlayn marketing, elektron tijorat va boshqa raqamli sohalarda malaka oshirishga yo'naltirilgan.

Shuningdek, UNICEF tomonidan amalga oshirilgan "Skills4Girls" dasturi qizlarni kompyuter savodxonligi, robototexnika va kodlash kabi sohalarda ta'lim olish imkoniyatlari bilan ta'minlamoqda. Bu dastur ayniqsa qizlar uchun ta'limga bo'lgan qiziqishni oshirishga xizmat qilmoqda^[3]. Innovatsion markazlar va yoshlar uchun imkoniyatlar. O'zbekistonda yoshlarni innovatsion faoliyatga jalb qilish uchun bir qator markazlar faoliyat yuritmoqda. Masalan, Toshkent shahridagi "Yoshlar tashabbuslari markazi"da yoshlar uchun robototexnika, dasturlash va neyrokognitiv tadqiqotlar kabi sohalarda ta'lim olish imkoniyatlari mavjud. Ushbu markaz yoshlarning ijodiy va texnologik salohiyatini rivojlantirishga xizmat qilmoqda^[4].

Hukumatning yoshlar ta'limiga oid tashabbuslari. O'zbekiston hukumati yoshlar ta'limini rivojlantirishga katta e'tibor bermokda. "Digital Uzbekistan 2030" strategiyasi doirasida 14 ta IT texnik maktab ochilishi rejalashtirilgan bo'lib, bu yerda o'quvchilarga dasturlash, axborot xavfsizligi va telekommunikatsiya sohasida ta'lim beriladi. Shuningdek, Prezident tomonidan yosh tadbirkorlarni qo'llab-quvvatlash maqsadida Milliy bankka 100 million dollar ajratilishi e'lon qilindi. Bu mablag'lar yoshlarning biznes loyihalarini amalga oshirishga yordam beradi^[5].

Taklif va mulohazalar: Yuqoridagi barcha dastur va tajribalarni muhokama qiladigon bo'lsak ularning hammasi ijobiy natija berganini ko'rishimiz mumkin va bu ammallarni barchasini bizning yurtimizda ayniqsa chekka hududlarda ham joriy qilishimiz mumkinligini ko'rsatadi. Eng avvalo maktablarda online kutubxonalar tashkil etilishi ya'ni kutubxona tashkil etiladi va u yerda talabalar uchun o'rinlar yaratiladi va har bir o'rinlarda e-booklar tashkil etiladi. U yerda har xil mavzulardan bilim olish, o'qish imkoniyatlari yaratilgan bo'ladi. bu esa hechqanday vaqtni olmaydigan va ortiqcha xarajatlarni yaratmaydigan qulaylikni yaratadi. Agarda o'lkada shu dastur amalda foydalanilsa barcha kitoblarga ketadigon davlat mablag'lari sezilarli darajada kamaydi. Statistikalarga qaraganda bitta maktab qo'llanmasi kitobining foydalanish muddati 6-7 yil, bu muddatdan so'ng bu kitoblar qayta nashr qilinadi agarda maktablarda to'liq e-booklardan foydalanilsa bu muddat bir necha baraborga oshishi mumkin. Bundan tashqari Har bir viloyatda robototexnika va ITga

ixtisoslashgan maktablarning ochilishi maktablarga qaratilgan innovatsion takliflarning asosidir. Buning sababi har bir rivojlangan davlatning rivojlanishiga davlatning iqtisodiyotiga bog'liq, iqtisodiyot industriallashtirishga bog'liq, industriallashtirish esa robototexnikaga bog'liqdir. Shuning uchun ham biz IT va robototexnikani rivojlantirsak davlatni rivojlantirgan bo'lamiz.

Raqamli mentorlik tizimi — bu yoshlar va texnologiya sohasidagi ilg'or mutaxassislarni onlayn platforma orqali bog'lab turadigan, sun'iy intellekt asosida moslik tahlilini amalga oshiradigan tizimdir. Har bir o'quvchi yoki talaba o'z qiziqishiga qarab (dasturlash, sun'iy intellekt, robototexnika, kiberxavfsizlik) mos mentor bilan juftlanadi. Bu mentorlar o'z tajribalarini, amaliy topshiriqlarni, real loyihalarni yoshlar bilan baham ko'radi. Eng muhimi, bu tizim o'yinlashuv elementlari orqali rag'batlantiriladi — masalan, o'quvchilar muvaffaqiyatli topshiriq bajargani uchun raqamli ballar yoki sertifikatlar olishadi.

Bu usul an'anaviy usullardan farqli ravishda texnologiyani faqat o'quv materiali emas, balki **hayotiy maqsad va kasbiy o'sish vositasi sifatida** ko'rsatadi. Ammo har bir sohaning yaxshi va yomon taraflari bo'lgani kabi buning ham yaxshi va yomon taraflari mavjud va albatta bu jihatlari undan qanday foydalanishiga bog'liqdir.

Ta'limdagi raqamli texnologiyalarning ijobiy tomonlari

Individual yondashuv imkoniyati — Har bir o'quvchi o'z darajasiga mos mashg'ulotlar orqali bilim oladi. Sun'iy intellekt asosida ishlovchi tizimlar bu jarayonni avtomatlashtiradi.

Dunyo miqyosidagi resurslarga ochiqlik — Onlayn kurslar, vebinarlar, ochiq darslar orqali dunyo universitetlarining bilimlarini bimalol o'zlashtirish mumkin.

Interaktiv o'qitish — 3D modellashtirish, VR (virtual reallik) texnologiyalari yordamida murakkab tushunchalarni tushunish osonlashadi.

Masofaviy ta'lim imkoniyati — Har qanday joyda va vaqtda o'qish imkoniyati mavjud, bu ayniqsa chekka hududlar uchun muhim.

Salbiy jihatlari

Sog'liq muammolari — Ko'p vaqt ekranga tikilib o'tirish ko'z, umurtqa va psixologik holatga salbiy ta'sir qilishi mumkin.

E'tibor tarqoqligi — Ko'plab texnologik vositalar yoshlar e'tiborini chalg'itadi, konsentratsiya pasayadi.

Ijtimoiy ajralish — Raqamli dunyoga sho'ng'igan o'quvchi real hayotdagi muloqot ko'nikmalaridan uzoqlashishi mumkin.

Tengsizlik muammosi — Har bir o'quvchining texnologik vositalar va internetga bir xil darajada ega bo'lmasligi ta'lim sifatiga salbiy ta'sir ko'rsatadi.

Xulosa

Zamonaviy raqamli texnologiyalar ta'lim tizimini tubdan o'zgartirayotgan bo'lsa-da, ularni to'g'ri va maqsadli yo'naltirish orqali salbiy oqibatlarining oldini olish mumkin. Raqamli mentorlik tizimi — bu yoshlarni nafaqat bilim bilan qurollantiradigan, balki ularni mustaqil fikrlovchi, zamonaviy muammolarga yechim topuvchi yetuk mutaxassisga aylantirishning yangi usulidir. Kelajak bu texnologiyalar bilan chambarchas bog'liq va biz yoshlarni unga ongli, salohiyatli va barqaror tayyorlashimiz kerak. Faol innovatsiyalar yoshlar ta'limini yanada samarali va qiziqarli qilishga xizmat qilmoqda. Raqamli platformalar, STEM dasturlari va innovatsion markazlar orqali yoshlar yangi bilim va ko'nikmalarni egallab, jamiyat rivojiga hissa qo'shmoqda. O'zbekiston hukumati va xalqaro tashkilotlar tomonidan amalga oshirilayotgan tashabbuslar yoshlarni raqamli iqtisodiyotga tayyorlashda muhim ahamiyatga ega. Kelajakda bu yo'nalishlar yanada rivojlanib, yoshlarning ta'lim olish imkoniyatlarini kengaytiradi^[6].

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**POTAMOGETON LUCENS L. — O‘ZBEKISTON SUV
HAVZALARINING BIOINDIKATOR O‘SIMLIGI**
POTAMOGETON LUCENS L. — БИОИНДИКАТОРНОЕ
РАСТЕНИЕ ВОДОЁМОВ УЗБЕКИСТАНА

POTAMOGETON LUCENS L. — BIOINDICATOR
PLANT OF UZBEKISTAN’S WATER BODIES

Yursunova O‘g‘iloy Mamitali qizi

Farg‘ona davlat universiteti, biologiya yo‘nalishi

2- bosqich talabasi

Anotatsiya

Ushbu maqolada *Potamogeton lucens* L. o‘simligining O‘zbekiston suv havzalaridagi tarqalishi, ekologik roli va bioindikator sifatidagi ahamiyati yoritilgan. Mazkur gidrofit o‘simlik toza suv ko‘rsatkichiga ega bo‘lgan muhitlarda o‘sishi bilan ajralib turadi va suv ekotizimining ifloslanish darajasini baholashda muhim bioindikator hisoblanadi. Tadqiqot davomida uning morfologik belgilari, ekologik talablari hamda biologik funksiyalari tahlil qilinadi. Shuningdek, *Potamogeton lucens* L.ning suv muhitini tozalashdagi tabiiy filtrlovchi vazifasi va biologik xilma-xillikni saqlashdagi o‘rni ham ilmiy asosda ko‘rsatib beriladi.

Kalit so‘zlar: *Potamogeton lucens* L., bioindikator, gidrofit, suv o‘simligi, ekologik muhit, suv havzalari, biologik xilma-xillik, ifloslanish darajasi, tabiiy filtrlovchi,

Аннотация

В данной статье рассматривается распространение, экологическая роль и значение растения *Potamogeton lucens* L. в качестве биоиндикатора в водоёмах Узбекистана. Это гидрофитное растение характерно для чистых водоёмов и служит важным индикатором уровня загрязнения водной экосистемы. В исследовании анализируются морфологические особенности, экологические требования и биологические функции растения. Также показано значение *Potamogeton lucens* L. в качестве природного фильтра и его роль в сохранении биологического разнообразия.

Ключевые слова: *Potamogeton lucens* L., биоиндикатор, гидрофит, водное растение, экологическая среда, водоёмы, биологическое разнообразие, уровень загрязнения, природный фильтр,

Abstract

This article explores the distribution, ecological role, and bioindicator importance of *Potamogeton lucens* L. in the water bodies of Uzbekistan. This hydrophytic plant thrives in clean aquatic environments and serves as a key indicator

of water ecosystem pollution levels. The study analyzes its morphological traits, ecological requirements, and biological functions. Furthermore, the article highlights the role of *Potamogeton lucens* L. as a natural filter and its contribution to maintaining biological diversity.

Keywords: *Potamogeton lucens* L., bioindicator, hydrophyte, aquatic plant, ecological environment, water bodies, biodiversity, pollution level, natural filter

KIRISH

Suv o'simliklari gidrobiotsenozning ajralmas qismi bo'lib, ularning biologik xilma-xilligi ekotizimning barqarorligini ta'minlaydi. Ayniqsa, gidrofit o'simliklar, jumladan *Potamogeton lucens* L., suv muhitining ekologik holatini baholashda muhim ahamiyatga ega. Bu o'simlik o'zining faqat toza va kislorodga boy suv havzalarida o'sishi bilan ajralib turadi, shu sababli u bioindikator sifatida e'tirof etiladi. O'zbekiston suv havzalarida *Potamogeton lucens* L. ning mavjudligi nafaqat floristik boylik sifatida, balki suv muhitining tabiiy tozalovchi omili sifatida ham alohida e'tiborga loyiqdir. Ushbu maqolada *Potamogeton lucens* L. o'simligining morfologik va ekologik xususiyatlari, suv muhitidagi roli hamda uning bioindikatorlik salohiyati ilmiy asosda yoritiladi. Tadqiqot mazkur o'simlikni O'zbekiston suv havzalaridagi ekologik monitoringda qo'llash imkoniyatlarini aniqlashga qaratilgan.

BOTANIK TAVSIFI

Potamogeton lucens L. — *Potamogetonaceae* oilasiga mansub ko'p yillik suv o'simligi bo'lib, asosan tiniq va kislorodga boy suv havzalarida o'sadi. Bu o'simlik to'liq suv ostida yashovchi gidrofit hisoblanadi. O'simlikning poyasi uzun, elastik va silindrsimon tuzilishga ega bo'lib, ba'zan shoxlanadi. Uzunligi 100–150 sm gacha yetadi. Poya suv osti sharoitiga yaxshi moslashgan va barglar navbatma-navbat joylashgan.

Barglari yaltiroq, uzunchoq-lansetsimon shaklda bo'lib, uzunligi 10–15 sm, eni esa 1,5–3 sm oralig'ida bo'ladi. Barg chetlari silliq, nervlari parallel va 7–15 tagacha asosiy nervdan tashkil topgan. Barglar nozik va yarim shaffof, suvda to'liq yoyilib o'sadi.

Gullari to'pgul shaklida, mayda va yashil yoki sarg'ish-yashil rangda bo'lib, ikki jinsli hisoblanadi. Gullanish davri yoz oylariga — iyun–avgust oylariga to'g'ri keladi. Changlanish jarayoni suv orqali (gidrofiliya) amalga oshadi.

Ildizpoyasi yaxshi rivojlangan bo'lib, loyqa va qumloq tuproqlarda chuqur o'sadi. Bu ildizpoya o'simlikning suv ostida mahkamlanishini va ko'payishini ta'minlaydi.

Ekologik sharoitga nisbatan talabi yuqori: asosan toza, o'rtacha chuqurlikdagi (0,5–3 m) suv havzalarida, pH 6–8 bo'lgan muhitda o'sadi. Turg'un yoki sekin oqimli suv havzalari — ko'llar, kanallar, suv omborlari va daryolarning jim joylarida keng tarqalgan[1].

Bioindikatorlik xususiyati

Potamogeton lucens L. ekologik toza va kislorodga boy suv havzalarida yashovchi sezgir gidrofit o'simliklardan biri hisoblanadi. U suvning fizik-kimyoviy holatiga, ayniqsa pH, kislorod miqdori, nitratlar va og'ir metall ionlarining konsentratsiyasiga nisbatan yuqori darajada sezuvchanlikka ega. Ushbu o'simlik ifloslangan yoki eutrofik holga kelgan suv havzalarida sust o'sadi yoki butunlay yo'qoladi. Shu sababli, *Potamogeton lucens* L. ning mavjudligi yoki yo'qligi suv muhitining ekologik holatini baholashda muhim bioindikator sifatida xizmat qiladi. Ekotizim monitoringi va suv sifati nazoratida ushbu o'simlikning mavjudligi aniq ishonchli ko'rsatkich sifatida foydalaniladi.

Filtrlovchi xususiyati

Potamogeton lucens L. suv havzalarida tabiiy filtrlovchi sifatida muhim rol o'ynaydi. Uning ildizpoyasi orqali suvdagi ortiqcha azot, fosfor va boshqa birikmalar o'zlashtiriladi, barg yuzasi esa loyqa zarralarni ushlab qoladi. Shuningdek, barglari suv yuzasida fotosintez jarayoni orqali kislorod ishlab chiqaradi, bu esa suv organizmlarining hayotiy faoliyatini qo'llab-quvvatlaydi. Natijada o'simlik nafaqat o'z atrofidagi muhitni tozalaydi, balki umumiy suv tiniqligini va biologik muvozanatni ta'minlashga yordam beradi. Shu sababli u rekultivatsiya ishlari va suv resurslarini barqaror boshqarishda samarali vosita sifatida ko'rib chiqiladi.

KIMYOVIIY TARKIBI

Potamogeton lucens L. o'simligi biologik faol moddalarga boy gidrofit hisoblanadi. Uning tarkibida flavonoidlar (flavonlar, flavonollar), fenolik kislotalar (kofeik, gallic, ferulik), karotinoidlar (karotin, lutein), shuningdek xlorofill a va b pigmentlari mavjud. Barg va poyalarida pektinli polisaxaridlar, oddiy uglevodlar (glyukoza, fruktoza) va minerallar (kalsiy, magniy, temir, kaliy) aniqlangan. Bu moddalar o'simlikning ekologik moslashuvchanligini va bioindikatorlik salohiyatini ta'minlaydi.

XULOSA

Yuqorida o'rganilgan ma'lumotlarga asoslanib, *Potamogeton lucens* L. o'simligi O'zbekiston suv havzalarining ekologik barqarorligini ta'minlashda muhim ahamiyatga ega ekanligi aniqlandi. U nafaqat morfologik va ekologik moslashuvchanlikka ega gidrofit sifatida, balki suv sifati ko'rsatkichlariga sezgir bo'lgan bioindikator o'simlik sifatida ajralib turadi. O'simlikning tarkibida flavonoidlar, fenolik birikmalar, karotinoidlar va boshqa bioaktiv moddalar mavjudligi uning ekologik stresslarga qarshi chidamliligini ta'minlaydi. Shuningdek, *Potamogeton lucens* suv havzalarini tabiiy filtrlashda va biologik muvozanatni saqlashda faol ishtirok etadi. Shu jihatlarni hisobga olgan holda, bu o'simlikni ekologik monitoringda va tabiiy suv resurslarini muhofaza qilish tizimida samarali qo'llash mumkin.

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LACTUCA TATARICA L. O'SIMLIGINING GENETIK XILMA-XILLIK VA STRESSGA CHIDAMLILIK OMILLARI

ГЕНЕТИЧЕСКОЕ РАЗНООБРАЗИЕ И ФАКТОРЫ УСТОЙЧИВОСТИ К
СТРЕССАМ У РАСТЕНИЯ LACTUCA TATARICA L.

GENETIC DIVERSITY AND STRESS RESISTANCE FACTORS
IN LACTUCA TATARICA L.

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Annotatsiya: Ushbu maqolada *Lactuca tatarica* L. o'simligining poya, barg, gullar, ildiz va shoxlarining morfologik xususiyatlari tahlil qilinadi. O'simlikning xilma-xilligi, kimyoviy tarkibi va ekologik moslashuv imkoniyatlari o'sish muhitiga bog'liq holda ko'rib chiqiladi. Tadqiqot natijalari seleksiya ishlari va o'simlik resurslarini saqlash uchun muhim ilmiy asos bo'lib xizmat qiladi.

Kalit so'zlar: poya, barg, seleksiya, resurslar, gullar, xilma-xillik, o'sish, moslashuv, shoxlari, ildiz, kimyoviy tarkibi.

Аннотация: В статье рассматриваются морфологические особенности *Lactuca tatarica* L., включая стебель, листья, цветки, корни и ветви. Освещаются вопросы разнообразия, химического состава и адаптационных способностей растения в зависимости от условий роста. Результаты исследования могут быть полезны для селекционной работы и сохранения растительных ресурсов.

Ключевые слова: стебель, листья, селекция, ресурсы, цветки, разнообразие, рост, адаптация, ветви, корень, химический состав.

Annotation: This article analyzes the morphological traits of *Lactuca tatarica* L., including the stem, leaves, flowers, roots, and branches. The study examines its diversity, chemical composition, and ecological adaptability depending on growing conditions. The findings provide valuable insights for selection programs and the conservation of plant resources.

Keywords: stem, leaf, selection, resources, flowers, diversity, growth, adaptation, branches, root, chemical composition.

KIRISH

Lactuca tatarica L. (Tatarcha salat) — *Asteraceae* oilasiga mansub yovvoyi o'simlik bo'lib, Yevropa va Osiyoning mo'tadil mintaqalarida keng tarqalgan. Ushbu tur o'zining kuchli ildiz tizimi, morfologik moslashuvchanligi va turli ekologik sharoitlarda o'sish qobiliyati bilan ajralib turadi. Shu sababli, u ekologik stress omillariga, xususan, qurg'oqchilik, sho'rlanish va harorat o'zgarishlariga nisbatan

yuqori chidamlilikka ega. So‘nggi yillarda yovvoyi *Lactuca* turlarining genetik xilma-xilligi va stressga chidamlilik mexanizmlarini o‘rganish, ularning seleksiya dasturlarida foydalanish imkoniyatlarini aniqlashda muhim ahamiyat kasb etmoqda. Tadqiqotlar shuni ko‘rsatadiki, yovvoyi turlar, jumladan, *Lactuca tatarica*, genetik resurslar sifatida qimmatli bo‘lib, ular orqali madaniy navlarning stressga chidamliligini oshirish mumkin.

BOTANIK TAVSIFI

Lactuca tatarica L. — *Asteraceae* oilasiga mansub ko‘p yillik o‘simlik bo‘lib, asosan Markaziy Osiyo va Yevropa dasht va yarim cho‘l hududlarida tarqalgan. U o‘zining kuchli yer osti ildizpoyasi bilan vegetativ tarzda ko‘payadi va uzunligi 20–60-100 sm gacha yetadi. Poyasi tik, silliq, kam hollarda tarmoqlangan va binafsha yoki qizg‘ish rangda bo‘ladi. Barglari ikki xil turda bo‘ladi: ildiz atrofi (bazal) barglar uzun bandli bo‘lib, chuqur patsimon bo‘lingan yoki ba‘zida butun chetli bo‘ladi. Poyadagi barglar esa bandsiz, navbatma-navbat joylashgan bo‘ladi. Shakli uzunchoq yoki nayzasimon shaklda bo‘lib, chuqur tishli yoki bo‘lingan, silliq va ko‘kish-yashil rangda bo‘ladi. Barglarning hammasida oq rangli sutli sharbat (latex) mavjud. Gullari ikki jinsli va zigomorf bo‘lib, changlanish asosan hasharotlar yordamida amalga oshadi. Gullash davri may oyidan avgustgacha davom etadi. Mevasi jigarrang rangda va tuk bilan qoplangan bo‘ladi, bu esa uni shamol yordamida tarqalishini ta‘minlaydi (1-rasm).



1- rasm. O‘simlikning umumiy ko‘rinishi.

GENETIK XILMA- XILLIK

Lactuca tatarica L. yovvoyi salat turlaridan biri bo‘lib, u keng geografik tarqalish hududlariga ega. Bu tur o‘zining genetik xilma-xilligi bilan ajralib turadi, bu esa uni turli ekologik sharoitlarga moslashishga imkon beradi. Tadqiqotlar shuni ko‘rsatadiki, yovvoyi *Lactuca* turlarining genetik xilma-xilligi seleksiya dasturlarida

foydalanish uchun muhim resurs hisoblanadi. Misol uchun, *Lactuca serriola* turida olib borilgan tadqiqotlar, bu turning yuqori genetik xilma-xillikka ega ekanligini va bu xilma-xillik uning turli stress omillariga chidamliligini ta'minlashda muhim rol o'ynashini ko'rsatgan.

STRESSGA CHIDAMLILIK OMILLARI

Lactuca tatarica turining stressga chidamliligi, xususan, qurg'oqchilik, sho'rlanish va harorat o'zgarishlariga nisbatan yuqori darajada. Bu chidamlilik, o'simlikning genetik va molekulyar darajadagi moslashuvchanligi bilan bog'liq. Yovvoyi *Lactuca* turlarida, masalan, *Lactuca homblei*, qurg'oqchilik stressiga javoban antosiyanin sintezi faollashadi, bu esa o'simlikning stressga qarshi himoya mexanizmlarini kuchaytiradi. Bundan tashqari, *Lactuca serriola* turida olib borilgan tadqiqotlar, bu turning yuqori genetik xilma-xillikka ega ekanligini va bu xilma-xillik uning turli stress omillariga chidamliligini ta'minlashda muhim rol o'ynashini ko'rsatgan.

NATIJA

O'rganilgan ma'lumotlarga asoslanib, *Lactuca tatarica* L. o'simligi *Asteraceae* oilasiga mansub bo'lib, ekologik moslashuvchanligi va genetik xilma-xilligi bilan ajralib turadi. U ko'p yillik, vegetativ yo'l bilan tez ko'payuvchi, kuchli ildizpoyaga ega o'simlik sifatida quruq va yarim cho'l hududlarga yaxshi moslashgan. Poyasi silliq, barglari chuqur tishlangan va ko'kish-yashil rangli bo'lib, barcha yashil qismlarida sutli sharbat (latex) mavjud. Uning gullari ligiat shaklida bo'lib, faqat bir jinsli emas, balki ikki jinsli xususiyatga ega va asosan ko'k-binafsha rangda bo'ladi. Gullanish davri maydan avgustgacha davom etadi, bu esa uning ekologik barqarorligini va changlovchilarga bo'lgan moslashuvchanligini ko'rsatadi.

XULOSA

Lactuca tatarica L. o'simligi o'zining morfologik tuzilishi, yashash muhiti bilan uyg'unlashuvi va estetik gullari bilan nafaqat tabiiy florani boyitadi, balki ilmiy-tadqiqot ishlari uchun ham muhim obyekt hisoblanadi. Uning barglari va gullaridagi o'ziga xosliklar uni tur sifatida aniqlashda asosiy belgilar bo'lib xizmat qiladi. Qurg'oqchil hududlarga chidamli bo'lishi, kuchli ildiz tizimi orqali yerga mustahkam tutunishi va shamol bilan tarqaluvchi urug'lari bu turning tabiiy sharoitlarda keng tarqalish imkoniyatlarini oshiradi. Ushbu o'simlikni kelajakda seleksiya va stressga chidamli navlarni yaratishda genetik resurs sifatida qo'llash mumkin.

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O'ZBEKISTON SHAROITIDA MARRUBIUM VULGARE L. NI INTRODUKSIYA QILISH IMKONIYATLARI VA AHAMIYATI

ВОЗМОЖНОСТИ И ЗНАЧЕНИЕ ИНТРОДУКЦИИ MARRUBIUM VULGARE L. В УСЛОВИЯХ УЗБЕКИСТАНА

POSSIBILITIES AND SIGNIFICANCE OF INTRODUCING MARRUBIUM VULGARE L. IN THE CONDITIONS OF UZBEKISTAN

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Annotasiya: Maqolada Marrubium vulgare L. o'simligini O'zbekiston sharoitida introduksiya qilish imkoniyatlari va dorivor ahamiyati yoritiladi.

Kalit so'zlar: Marrubium vulgare, introduksiya, dorivor o'simlik, O'zbekiston florasida, moslashuvchanlik, tuproq-iqlim sharoiti, ekologik ahamiyat, sog'liqni saqlash, xalq tabobati, fitoterapiya, resurs o'simligi, o'sish sharoiti, farmakologik xususiyatlar.

Аннотация: В статье освещаются возможности интродукции растения Marrubium vulgare L. в условиях Узбекистана и его лекарственное значение.

Ключевые слова: Marrubium vulgare, интродукция, лекарственное растение, флора Узбекистана, адаптация, почвенно-климатические условия, экологическое значение, здравоохранение, народная медицина, фитотерапия, ресурсное растение, условия роста, фармакологические свойства.

Abstrakt: The article highlights the possibilities of introducing the plant Marrubium vulgare L. in the conditions of Uzbekistan and its medicinal significance.

Keywords: Marrubium vulgare, introduction, medicinal plant, flora of Uzbekistan, adaptability, soil and climate conditions, ecological importance, healthcare, folk medicine, phytotherapy, resource plant, growth conditions, pharmacological properties.

KIRISH

Dorivor o'simliklarni yangi hududlarga ko'chirib o'stirish, ya'ni introduksiya, bugungi kunda bioxilma-xillikni saqlash, dori sanoati ehtiyojini qondirish va yashil iqtisodiyotni rivojlantirishda muhim ahamiyatga ega. Dunyo bo'yicha 50 mingdan ortiq dorivor o'simliklar mavjud bo'lib, ularning 80 foizi turli kasalliklarni davolashda ishlatiladi. O'zbekistonda esa 1000 dan ortiq dorivor o'simlik turlari aniqlangan bo'lsa-da, ko'pchiligi hali resurs sifatida chuqur o'rganilmagan. Marrubium vulgare L. — efir moyi va biologik faol moddalar bilan boy, xalq tabobatida keng qo'llaniladigan dorivor o'simlikdir. Uning tarkibidagi marubin, tanin, flavonoid va achchiq glikozidlar nafas yo'llari, yurak-qon tomir va boshqa kasalliklarda davolovchi vosita sifatida qo'llaniladi[2].

BOTANIK TAVSIFI

Marrubium vulgare L. — yalpizdoshlar (Lamiaceae) oilasiga mansub, ko'p yillik yarim buta hisoblanadi. O'simlikning bo'yi odatda 30–60 sm bo'lib, ba'zida 1 metrgacha o'sishi mumkin. Poyasi to'g'ri, to'rtburchak kesimli bo'lib, sirtida oqish-yumshoq tuklar bilan zich qoplangan. Asosan pastki qismidan kuchli shoxlanadi va

shoxlari tik holatda o'sadi.

Barglari qarama-qarshi joylashgan, dumchali, shakli esa tuxumsimon yoki yumaloq bo'lib, uzunligi 1,5–4 sm, kengligi 1–3 sm ni tashkil qiladi. Barg chetlari yirik tishli, yuzasi ajinli bo'lib, ustki tomoni kulrang-yashil, pastki tomoni esa oqish tuklar bilan zich qoplangan(1- rasm).

Gullari mayda, oq rangli bo'lib, uzunligi 6–12 mm atrofida. Ular poyaning yuqori qismidagi barg qo'ltig'ida halqa tarzida joylashgan. Gulning kaliksi naychasimon shaklga ega bo'lib, 10 ta mayda, ilgakli tishchalar bilan tugaydi. Korollasi ikki labli bo'lib, yuqori labi ikki bo'lakli, pastki labi esa uch bo'lakdan iborat bo'lib, o'rta bo'laki yirikroq. O'simlikning mevasi — to'rt bo'lakli yong'oqcha (nukula) bo'lib, har bir bo'lakda bitta urug' bo'ladi. Mevalar kaliks ichida joylashgan va tukli sirtga ega. Ildiz tizimi esa asosiy yog'ochlashgan ildizdan iborat bo'lib, ko'plab yon ildizlar hosil qiladi. *Marrubium vulgare* L. O'zbekiston sharoitida may oyidan avgustgacha gullaydi. Ekologik jihatdan yorug'likni yaxshi ko'radi, qurg'oqchilikka chidamli bo'lib, unumdor qumloq yoki qumli tuproqlarda yaxshi o'sadi.



1- rasm. O'simlikning umumiy ko'rinishi

Marrubium vulgare L. ni O'zbekiston sharoitida introduksiya qilish imkoniyatlari.

Marrubium vulgare L. o'simligi yorug'liksevar, qurg'oqchilikka chidamli va unumdor qumli-tuproqlarda yaxshi o'sadigan dorivor tur hisoblanadi. O'zbekistonning iqlimi — issiq, quruq yoz va mo'tadil qish mavsumlari bu o'simlik uchun mos sharoit yaratadi. Farg'ona vodiysi, Qashqadaryo, Samarqand kabi hududlarda tuproq va harorat sharoitlari uning o'sishiga qulaydir. Ekologiya vazirligining 2023-yilgi ma'lumotlariga ko'ra, dorivor o'simliklar uchun ajratilgan 200 ming gektardan ortiq yer maydonlari mavjud bo'lib, *Marrubium vulgare* uchun ham resurs sifatida

foydalanish mumkin. Tajriba maydonlarida ushbu o'simlik 70–80% gacha unib chiqishi va yoz davomida 2 marta yig'ilishi kuzatilgan. O'simlik parvarish talab qilmaydi, sug'orishsiz ham o'sadi, bu esa uni ekologik va iqtisodiy jihatdan samarali o'simlik sifatida baholash imkonini beradi[1].

Marrubium vulgare L. o'simligining ekologik va farmakologik ahamiyati.

Marrubium vulgare L. ekologik jihatdan qurg'oqchil, toshloq va qumli tuproqlarda barqaror o'sadigan o'simliklardan biri bo'lib, tabiiy sharoitda eroziyaga uchragan yerlar uchun meliorativ resurs sifatida foydalidir. U tuproqning biologik faoliyatini rag'batlantirib, bioxilma-xillikni qo'llab-quvvatlaydi. Parvarish talab qilmaydigan, kam suv iste'mol qiladigan bu o'simlik ekologik barqaror dehqonchilik tizimlariga mos keladi.

Farmakologik jihatdan esa Marrubium vulgare L. yurak-qon tomir tizimini mustahkamlovchi, balg'am ko'chiruvchi, yallig'lanishga qarshi ta'siri bilan mashhur. Uning tarkibidagi marubin, flavonoidlar, taninlar va efir moylari asosida nafas yo'llari, yo'tal, bronxit, me'da-ichak kasalliklari davolashda ishlatiladigan fitopreparatlar tayyorlanadi. Bu o'simlik xalq tabobatida qadimdan balg'am haydovchi va tana haroratini tushiruvchi vosita sifatida qo'llanilgan. Ekologik chidamliligi va dorivorlik salohiyati Marrubium vulgare L. ni qishloq xo'jaligi va farmatsevtika sohalarida istiqbolli resurs o'simligi sifatida baholash imkonini beradi.

XULOSA

Marrubium vulgare L. O'zbekiston sharoitida iqlimga mos, parvarishsiz o'suvchi va dorivor xususiyatlarga ega o'simlik hisoblanadi. Uning introduksiyasi dorivor xomashyo bazasini kengaytirish, ekologik barqarorlikni ta'minlash va xalq tabobatida foydalanish imkoniyatlarini oshiradi. Shu bois bu o'simlikni resurs sifatida joriy etish maqsadga muvofiqdir.

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THE ROLE OF ABBREVIATIONS IN MODERN ENGLISH

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Abstract: This article examines the role of abbreviations in modern English, focusing on their various types, uses, and impacts on communication. It explores how abbreviations have become integral to both casual digital interactions and formal professional contexts. The study highlights the benefits of abbreviations in promoting efficiency and clarity, especially in fast-paced environments like texting, social media, and specialized fields such as medicine and business. At the same time, it discusses challenges such as confusion, misunderstandings, and generational or cultural gaps in understanding. Ultimately, the article presents abbreviations as a natural and evolving aspect of English, reflecting the language's adaptability to technological and social changes.

Key words: abbreviations, modern English, acronyms, initialisms, contractions, clippings, blends, digital communication, professional language, language evolution, communication efficiency, language challenges, internet slang

In the 21st century, the nature of communication has changed drastically, shaped by the rapid development of digital technologies, globalization, and the increasing demand for quick and efficient information exchange. As a result, the English language has adapted, and one of the most noticeable changes is the widespread use of abbreviations. These include acronyms (such as NASA), initialisms (like FBI), contractions (e.g., don't, can't), and clipped words (e.g., info, exam). Abbreviations allow speakers and writers to save time and space while still conveying clear meaning. They are especially common in texting, social media, and online chats, where brevity is essential. At the same time, professional fields such as business, science, and medicine rely on abbreviations for clarity and precision. Abbreviated language has become a defining feature of modern English, reflecting how communication continues to evolve in response to technological and social change.

Abbreviations in modern English come in various forms, each serving a unique purpose in simplifying language. The most common types include acronyms, initialisms, contractions, clippings, and blends.

Acronyms are formed from the initial letters of a phrase and are pronounced as words. Examples include **NASA** (National Aeronautics and Space Administration) and **RADAR** (Radio Detection and Ranging). They are often used in technical or governmental language.

Initialisms, like acronyms, are also made from initial letters but are pronounced letter by letter. Examples include **FBI** (Federal Bureau of Investigation) and **USA** (United States of America).

Contractions are shortened forms of words created by omitting certain letters and using an apostrophe. Common examples include **don't** (do not) and **can't** (cannot).

Clippings involve dropping parts of words while retaining their original meaning. For instance, **info** (information) and **gym** (gymnasium) are widely used in casual speech.

Blends combine parts of two words into a new term. Popular blends include **brunch** (breakfast + lunch) and **smog** (smoke + fog). Each type of abbreviation plays a role in making English more flexible, efficient, and suited to modern communication needs. Why Abbreviations Are Used

Abbreviations are widely used in modern English because they offer speed, convenience, and efficiency in communication. In digital spaces like texting, social media, and online chats, people prefer shorter forms to save time and reduce typing effort. Terms such as “LOL” (laugh out loud), “DM” (direct message), and “IDK” (I don’t know) are examples of how brevity has become a linguistic necessity in fast-paced conversations.

Another reason for their popularity is space-saving. In advertising, news headlines, or on social media platforms with character limits, abbreviations help convey messages clearly without taking up too much space. Additionally, abbreviations often bring a sense of informality and personality to language, helping users create a casual or humorous tone.

In professional, academic, and technical fields, abbreviations are used to simplify complex terms, making communication more precise and efficient. For example, doctors use “ECG” instead of “electrocardiogram,” and businesses refer to “ROI” rather than “return on investment.” The choice to use abbreviations often depends on age, context, and cultural background, showing how language adapts to different communication needs.

In the digital age, abbreviations have become a staple of online communication, especially in texting, social media, memes, and internet slang. These shortened forms help users convey messages quickly and efficiently, fitting the fast-paced nature of digital platforms. Common examples include **OMG** (Oh my God), **FYI** (For your information), **DM** (Direct message), **TBH** (To be honest), and **TTYL** (Talk to you

later). Such abbreviations often carry specific cultural or emotional tones that enrich casual conversations, making communication feel more personal and dynamic.

However, the widespread use of abbreviations has raised questions about their effect on traditional grammar and spelling habits. Some critics argue that frequent reliance on shorthand may encourage careless writing and weaken language skills. On the other hand, many linguists believe that abbreviations reflect language's natural evolution and adaptability, especially in response to new communication technologies. Rather than harming language, they may expand its expressive capacity and demonstrate how English continues to change with society's needs.

In professional and academic settings, abbreviations are essential tools for clarity and brevity. They allow experts to communicate complex information quickly and precisely, saving time without sacrificing meaning. In medicine, abbreviations like **ECG** (electrocardiogram) and **MRI** (magnetic resonance imaging) help healthcare professionals discuss diagnostic procedures efficiently. Similarly, in business, terms such as **KPI** (key performance indicator) and **ROI** (return on investment) are commonly used to measure success and guide decision-making. Government and legal fields also rely on abbreviations like **UN** (United Nations) and **NATO** (North Atlantic Treaty Organization) to refer to international bodies concisely. These standardized abbreviations ensure that communication remains clear, consistent, and professional, enabling experts to collaborate effectively across diverse disciplines.

While abbreviations offer many benefits, they also present several challenges. One major issue is that they can create confusion or exclusion for people who are unfamiliar with specific terms. For example, someone new to a profession or a non-native English speaker might struggle to understand abbreviations common in specialized fields or online communities. Additionally, overuse of abbreviations can lead to misunderstandings, especially when context is unclear, and can contribute to a loss of formality in written and spoken language. This is particularly problematic in professional or academic settings where precision and clarity are crucial. Moreover, cultural and generational differences affect how abbreviations are interpreted. Younger generations may quickly understand internet slang, while older individuals might find it puzzling. These gaps highlight the need for careful, context-aware use of abbreviations to avoid communication barriers.

CONCLUSION

Abbreviations play both positive and negative roles in modern English. On one hand, they enhance communication by saving time, increasing efficiency, and adapting language to fast-paced digital and professional environments. On the other hand, they can cause confusion, misunderstandings, and even exclude people unfamiliar with specific terms. Despite these challenges, abbreviations are a natural and evolving part of the English language, reflecting its flexibility and responsiveness to social and

technological changes. As technology continues to advance, abbreviations will likely become even more widespread and diverse. The key question remains: will these changes enrich our communication or create new barriers? How we choose to use abbreviations will shape the future of English communication.

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BUXORO MA'RIFATPARVAR JADIDLAR VA ULARNING ILMIY ME'ROSINI O'RGANISH PEDAGOGIK MUAMMO SIFATIDA

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Annotatsiya: Mazkur maqolaning asl mazmun-mohiyatida XIX ars oxiri XX asr boshlarida vujudga kelgan jadidchilik harakati va bu harakat Buxoro diyorida qanday shakillanganligini mujassamlashgan. Maqolada Buxoroda jadidchilik harakati vujudga kelishi uchun sabab bo'lgan omillar keltirib o'tiladi. Jadidchilik vujudga kelgan davrning ma'naviy qiyofasi birmuncha yoritilgan. Yana shuningdek, o'sha vaqtdagi xalqning ma'naviy va ruhiy holati haqida ham to'xtalib o'tilgan va diyordagi eng mashhur jadidlarni nomlari sanab o'tilgan.

Kalit so'zlar: jadidchilik harakati, Buxoro jadidlari, ma'rifatparvarlik, madrasa, islohatchilik, milliy ozodlik, "Muzaaffariya", qadimchilar.

Аннотация: Основное содержание статьи - джадидское движение, возникшее в конце 19-го и начале 20-го веков, и как это движение формировалось в Бухарском регионе. В статье представлены факторы, которые привели к возникновению джадидского движения в Бухаре. Несколько освещен духовный облик периода возникновения джадидизма. Также затронуто духовное и умственное состояние народа в то время и перечислены имена наиболее известных джадидов региона.

Ключевые слова: джадидское движение, бухарские джадиды, просветительство, медресе, реформизм, национальное освобождение, «Музаффария», древности.

Abstract: The main content of this article is the Jadid movement that emerged in the late 19th and early 20th centuries and how this movement was formed in the Bukhara region. The article cites the factors that led to the emergence of the Jadid movement in Bukhara. The spiritual image of the period when Jadidism emerged is somewhat illuminated. It also touches on the spiritual and mental state of the people at that time and lists the names of the most famous Jadids in the region.

Keywords: Jadid movement, Bukhara Jadids, enlightenment, madrasa, reformism, national liberation, "Muzaaffaria", ancientists.

Kirish. XXI asr ilm-marifat va fan-texnologiya asri bo'lganligi sababli, eng ko'p e'tibor ta'lim-tarbiya, ilimliklik darajaralari, ilmiy meroslarni tadqiq qilib o'rganib, ularni zamonga moslashtirish va ulardan foydalanib natijalarga erishishga qaratilmoqda. Shu jumladan, ta'lim-tarbiyani yaxshilash maqsadida, ma'rifatparvar

jadidlarning hayoti, ilmiy-ijodiy faoliyati, ilm-marifatdagi qilgan ishlarini o'rganish hozirgi kunning e'tibor markaziga aylandi. Jadidlarni o'rganish bir qancha harakatlar boshlab yuborilgan va bunda tadqiqotchilar turli yo'nalishlar bo'yicha tadqiqot olib bormaqdalar.

Jadidlarga ma'rifatparvar g'oyalarni tarqatish va millatni bilimli qilish g'oyalari qayerdan keldi? Ular ham shu jamiyatning eskilikka yopishib olgan, an'anaga daxl qiluvchi har qanday hodisani "shoshqoloqlik" atab, taraqqiyot yo'lidagi toshga aylangan qatlam ichidagi insonlar ediku? Birinchi muammo jadidchilik qanday sharoitda shakillandi?

XIX asr oxiri XX asr boshlarida dunyo siyosiy maydonida ham, Turkiston maydonida ham va jumladan Buxoro diyorida ham siyosiy, ijtimoiy-iqtisodiy va madaniy hayot bir muncha og'ir edi. Dunyo ikki xil tuzumni mustamlakachilar va mustamlakalardan iborat edi. Buxoro ham Rossiya tomonidan 1868-yilda bosib olingandan so'ng mustamlakachi davlatga aylandi. Mustamlakachilik Buxoro uchun ham iqtisodiy-siyosiy, ham ijtimoiy-madaniy sohalarida mavjud vaziyatlarni yanada og'irlashtirdi. Xalq oldin amirlik uchun ishlagan bo'lsa endilikda bunga ruslar ham qo'shildi va xalqning axvoli ham yanada og'irlashdi. XIX asrda bunday xolatlardan norozi bo'lgan xalq kichik-kichik noroziliklar uyushtirdilar, ammo bu norozilik harakatlari Buxoro va ruslardan yonlangan qo'shinlar tomonidan bostirilib borildi. Yana shuningdek boshqaruv sohalarida ham asosan Rossiyadan ko'chirib keltirilgan rahbarlik qilishlar xalqni tobora ahvolini yanada og'irlashtirar edi. Rossiyaning bunday siyosat yuritishidan maqsad O'rta Osiyoni arzon ishchi kuchi va mamalakati iqtisodiyoti uchun xomashyo bazasiga aylantirish edi. Turkiston zamini Rossiyadan keltirilgan tayyor sanoat mollari bilan to'ldirilib, mo'may daromadni qo'lga kiritayotgan rus hukumati va firmalariga bu yoqardi. Umuman aytganda rus hukumati o'lkani boyliklarini talash va o'zining mustamlakasiga aylantirish yo'lidan hech narsadan toymadi.

Turkiston, jumladan Buxoro iqtisodiy hayoti ham aynan shu maqsadga tobe xolda hayot kechira boshladi. O'lka xalqlarining erk va hurriyat uchun kurashi milliy-ozodlik harakatlari mazmun-mohiyatida o'z aksini topgan bo'lsa, milliy taraqqiyparvar kuchlarning ma'rifatchilik harakati jadidchilikda namoyon bo'ldi.

"Ellik yildan beri, - deb yozgan edi Furqat, - ezildik, taxqir etildik. Qo'limiz bog'landi. Tilimiz kesildi. Og'zimiz qoplandi. Yerimiz bosildi, molimiz talandi. Sharafimiz yemirildi, nomusimiz g'asb qilindi. Insoniyligimiz oyoq osti qilindi. Tizimli turdik, sabr etdik. Kuchga tayangan har bir buyruqqa bo'ysundik. Butun borlig'imizni berdik".¹ Mana shunday qalbida ozodlik hayqirayotgan millatning farzandlari o'zlarning harakatlarini boshlash yo'lida kichik qadamlamlarni tashlay boshladilar.

¹ "Sharq yulduzi", 1992-yil, 10-son, 173 b.

Buxoroda shakillanayotgan jadidchilik harakati saflarida tur xildagi qatlamni uchratish mumkin edi. Biri savdogar oilasida tugʻulib Rossiyada taʼlim olib kelgan, biri Mir-Arab madarasasida taʼlim olib, Haj ziyoratiga borib keyin Eron, Arabiston, Hindiston oʻlkalariga sayohat qilib kelgan, Turkiyaga borib chet ellik ziyolilar bilan uchrashgan, biri madrasa taʼlimini olib oʻzining maktabini ochgan, biri oʻzining hajviylik qobiliyatlari namoyish qila olgan shoir va hattoki oʻsha vaqtda ruslashtirish siyosatini yuritish maqsadida ochilgan rus-tuzum maktablarida oʻqib chiqqanlar orasidan ham mavjud edi. Bu kabi turli xil qatlam orasidan chiqqanlarni birlashtirib turgan asosiy birdan-bir vazifa bu xalqni ilimli qilish va jamiyatda oʻz oʻnini topgan insonlarni koʻpaytirish edi. Vatanga sodiqlik va uning mustaqilligini qaytarish fikrlari ham jadidlar yetakchiligida jamiyatdagi barcha qatlamlarni ozodlik kurashiga chorladi. Jadidlar oʻsha paytdagi vaziyatdan kelib chiqqan holatda, birinchi oʻrinda xalqning savodini chiqarish, bilimni oshirish, milliy his-tuygʻularini va siyosiy ongini oʻstirish uchun harkatni boshlaganlar. Boshqacha qilib aytganda, ular faoliyatining dastlabki bosqichida maʼrifatparvarlik salmoqli oʻrin egalladi. Ammo, bu ularda siyosiy gʻoyalar va maqsadlar yoʻq edi deyish emas, albatta. Siyosiy qarashlar ham mavjud edi, lekin uni darhol amalga oshirish uchun dastlabki vaqtlarda sharoit mavjud emasdi. Shu orqaligina bir millatni butunlay qaramlikdan ozod etish mumkin edi.

Bundan tashqari xalqning maʼnaviy holati ham jadidchilik harakatini shakillanib, harakatga kelishiga majbur qildi. Jumladan, chor Rossiyasi maxfiy maʼlumotlaridan biri, Eron va Turkiyadagi milliy ozodlik harakatlari hamda 1905-yil rus inqilobidan keying Buxoro axli toʻgʻrisida bunday maʼlumot beradi: <<Buxoroda madrasalar koʻp boʻlsa-da, xalq ortiq nodon, siyosiy fikr degan gaplar hech ham yoʻq. Rusiya inqilobi haqida hech narsa anglamaydurlar. Maʼlumoti boʻlganlari ham Rusiya inqilobini inqilob deb bilmaydurlar. Nima boʻlsa ham Buxoroda oʻzgarish ehtimoli juda uzoqdir>>. Shu xufya Buxoro axlining siyosiy saviyasi toʻgʻrisida mulohaza yuritib, yana bunday yozgan: <<Buxoro bozorlarida turgan qishloqliklardan durust maʼlumot ololmadi. Sababi, ular, birinchidan, shaharga ish bilan kelganlarida soʻzlashib oʻtirishga vaqtlari yoʻqdir. Ikkinchidan, siyosatdan gapirishga amirning xufyalaridan qoʻrqadurlar, chunki, amirning xufyalari nihoyatda koʻp boʻlib, siyosiy bir gap eshitsalar, ushlab, darrov zindonga soladilar>>.²

Bu kabi holatlar birgina Buxoroda emasdi, butun Turkiston diyoridagi holat edi desak adashmagan boʻlamiz. Soʻzimizning isboti sifatida Turkiston maʼrifatparvari A.Avloniyning oʻz asarlarida millatning turmush tarzi, uning dunyoqarashi, tafakkuri hamda madaniyatining darajasini ifoda qilib, shu davrdagi milliy ruhiyatning nechogʻli darajada nochor boʻlganligini ifodalab berganini koʻrishimiz mumkin. Jumladan, u, shunday yozadi: —... Ehtimol, bizning xalq ilmu maʼrifatni, tarbiya va taʼlimni, hunar va sanoatni yaxshi koʻrar, deb oʻylaydurgʻondursan? Yoʻq, bu fikringiz yanglish..

² Jadidchilik: islohot, yangilanish, mustaqillik va taraqqiyot uchun kurash.(Davriy toʻplam) T.: Universitet. 1999. 30b.

Eshonlarimiz toat va ibodat, pandu nasihat, zikru tasbeh oʻrniga toʻylarida toʻn kiyub koʻp oshab, koʻp uxlashni yaxshi koʻrurlar. Ulamolarimiz darsu taʼlim oʻrnigʻa, bir-birilari ila oʻrin talashib mukarrir va mudarris boʻlishni, oʻzlari boʻlalmay qolsalar, eshikma-eshik yurub saylovni buzushni yaxshi koʻrurlar. Imomlarimiz, xaloyiqgʻa vaʼz va nasihat oʻrnigʻa, toʻy va janozalarda yurub, joma kiyishni yaxshi koʻrurlar. Boylarimiz orqa-oʻnglariga qaramasdan, foyda va zararlarini oyirmasdan bir-birlarigʻa raqobat qilaman, deb —bonkal va —kreditlarini koʻpayturub, doʻffilari tor kelganda rus va yahudiylarning bukib-sinishini yaxshi koʻrurlar. Moʻysafidlarimiz namoz va niyoz oʻrniga, masjid eshigiga yigʻilib oʻturib, har kimni gʻiybat va shikoyat qilishni yaxshi koʻrurlar. Muallimlarimiz bir-birlaridan qizgʻonishub, bolalarni arzon oʻqitaman deb, bir oʻzlariga yuz, yuzdan ortiq bola yigʻub, oʻzlari toʻy va maʼrakalarda bolalarning umrini bekor oʻtkarishni yaxshi koʻrarlar. Ammo men boʻlsam, hozirgi zamonda indamasdan turishni yaxshi koʻrurman[10]. Agar Abdulla Avloniyning aytganlarini tahlil qiladigan boʻlsak, unda millatning gʻayriaxloqiy ruhiy holati bilan bogʻliq barcha illatlar mohiyati ochiladi. Jadidchilik harakatining vujudga kelishi birinchidan, Islomdagi tarqqiyparvarlik, ilm-fanga ragʻbat va dunyoviylikning yangi davrdagi koʻrinishi sifatida paydo boʻldi.

Jadidlar islomni har xil muttassiblik bidatlaridan asrab rivojlantirgan koʻrinishda namoyon boʻldi. Ikkinchidan, jadidchilikning paydo boʻlishi va rivojlanshiga Sharq va Gʻarb mamlakatlarida rivojlangan quyidagi, demokratik, milliy-ozodlik, islohotchilik harakatlarining taʼsiri ham kuchli boʻldi.

1. Jamoliddin Afgʻoniy(1839-1897) va Muhammad Abdolar (1848-1903) asos solgan musulmon dunyosidagi islohotchilik va “naxda” (uygʻonish) harakatlari.

2. XIX asrning 90-yillarida boshlanib, 1905-1907 va 1917-yillarda katta gʻalabalarga erishgan rus sotsial demokratik va inqilobiy xarakatlari.

3. Turkiyadagi aksilmonarxist, konstitutsion demokratik, ijtimoiy-milliy uygʻonish harakatlari: Tanzimat (1840-1860), Yosh usmonlilar (1865-yildan 80-yillargacha), Yosh Turkular (1889-1918) va 1908-1909-yillardagi demokratik inqilobiy harakatlar.

4. Jadidchilik harakatining paydo boʻlib, rivojlanishida qrimlik Ismoilbek Gaspiralinig (1851-1914) hissasi behad katta boʻldi. ³ Ismoil Gaspirali 1880-yillardayoq Qrimda, Rossiya mustamlakalari ichida birinchi boʻlib jadidchilikka asos soldi. Uning Turkistonga tez kirib kelgan rus va turkey tillarda chop etilgan “Tarjimon” (1883-1914) gazetasi, “Rossiya musulmonligi” (1881), “Ovruqa madiyatiga bir nazar muvozzini” va boshqa asarlari hamda jadid maktablari uchun yozgan darslik va qoʻllanmalari juda mashhur boʻldi.

Ismoilbek Gaspirali 1893-yilda Toshkentga keladi va ziyoli ulamolar bilan

³ Oʻzbekiston tarixi 2-jild (XIX asr II yarmi – 1991-yil avgust) oliy oʻquv yurti talabalari uchun darslik. T.: 2015. B-162.

uchrashadi. Samarqandga ham boradi. Samarqanddan Buxoroga borib, Buxoro amri Amir Abdulaxadni jadid maktabi ochishga ko'ndiradi va bu maktabga "Muzaffariya" degan nomni beradi.

Jadidlar ikki xil qarama-qarshi munosabatlarga asoslangan tuzumlarning o'rtasida shakillana oldilar, ya'ni diniy muttasiblikka asoslangan jamiyat va bu jamiyatni o'ziga qaram qilishni maqsad qilgan bolsheviklar jamiyati. Buning uchun o'sha davrda juda katta ma'naviy va jismoniy kuch bo'lishlik kerak edi insonda. Aynan jadidlar har ikkala kuchni o'zida namoyan qila oldilar. Bo'layotgan vaziyatni: qoloqlik, muttasiblik, xudbinlik, qaramlik, bosqinchilik kabilarni ular his qilolardilar. Ular tushundilarki, xalqni budan qutqarishning yagona yo'li ularni savodli qilish, huquq va majburiyatlarini o'rgatish kerakligini.

Buxoro diyorida yetishib chiqqan jadidlar orasida eng mashhurlari Ahmad Donish, Abdurauf Fitrat, Fayzulla Xo'jayev, Abduvohid Burxonov, Atoulla Xo'jayev, Mirzo Narzullo, Abduqodir Muhitdinov, Musajon Saidjonov, Rahmat Rafiq Abdullabekov, Said Axroriy, Qori Yo'ldosh Po'lotov va boshqalar. Bu kabi mashhur jadlilarning nomlari, meroslari va shu bilan birgan marifatga intilgan pok qalblari ham bugun bizga qadar yetib kelmada. Bizni vazifamiz, mana ulug' merosdan go'zal tarzda foydalanib, keyingi avlodlarga uzatishimizdir.

Xulosa. XX asr boshlarida Buxoroda jadidchilik harakati ta'lim tizimiga yangiliklar kiritish, ilm-ma'rifatni rivojlantirishga qaratilgan edi. Bu harakatning pedagogik qarashlari hozirgi ta'lim tizimining shakllanishida muhim ahamiyatga ega. Buning uchun biz eng avvalo shu harakatning vujudga kelish tarixini ko'rib chiqdik. Qanday sharoitda vujudga kelib, shakillanganidan bexabar boshqa jihatlarini o'rganadigan bo'lsak, bu yuzaki ilm bo'lib qolardi.

Foydalanilgan adabiyotlar:

1. O'bekiston tarixi 2-jild (XIX asr II yarmi – 1991-yil avgust) oliy o'quv yurti talabalari uchun darslik. T.: 2015. B-162.
2. Abdulla Avloniy. Tanlangan asarlar. 2-jild. "Turkiy guliston yoxud axloq" T, Ma'naviyat, 2006.
3. Jadidchilik: islohot, yangilanish, mustaqillik va taraqqiyot uchun kurash.(Davriy to'plam) T.: Universitet. 1999. 30b.
4. "Sharq yulduzi", 1992-yil, 10-son, 173 b.

IMPROVING THE ENVIRONMENT THROUGH PROPER ORGANIZATION OF THE UTILIZATION PROCESS IN INDUSTRIAL ENTERPRISES

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Abstract: This article analyzes the qualitative and quantitative study of the release of harmful substances in the production process and measures to reduce their impact on the health of workers. The impact of toxic substances, dust, gases, aerosols and other chemical elements released into the atmospheric air at industrial enterprises on the human body, as well as modern technological and environmental approaches to their reduction, is considered. The effectiveness of preventive measures, protective equipment and occupational hygiene measures is analyzed on a scientific basis.

Keywords: industrial safety, harmful substances, toxic gases, dust content, medical and preventive measures, ventilation system, environmental safety, worker health, biological monitoring, technological modernization

Introduction: With the development of industrial production, environmental hazards are also increasing. Harmful chemicals generated during the production process can negatively affect the health of workers. Dust, toxic gases, heavy metals, radioactive and biological factors found in production workshops are dangerous to human health. Therefore, controlling harmful substances and reducing their negative impact on workers is an urgent issue.

Types of harmful substances in production and their effects on health

Harmful chemicals generated during production can have a negative impact on workers' health in various ways, causing problems with the respiratory, nervous, liver and kidney systems. Therefore, it is necessary to use personal protective equipment, strengthen technical measures, improve ventilation systems and ensure constant medical monitoring to protect workers. These measures are important in protecting workers' health, making production processes safe and protecting the environment from pollution.

The impact of chemicals on humans is felt directly (when preparing mixtures, treating seeds, soil, plants) and indirectly - through plant and food products, fruits and vegetables obtained from fields treated with chemicals, as well as through animal products (meat, cottage cheese, milk, eggs, etc.) and when plant products are used as feed, the content of which in the composition of which exceeds the standard level of nitrates and pesticides is higher than the norm. Pesticides are more dangerous for humans than mineral fertilizers. According to their use, pesticides are divided into

insecticides (for combating insects), acaricides (for ticks), rodenticides (for harmful rodents), fungicides (for fungi), bactericides (for bacteria), herbicides (for weeds), etc. According to hygienic properties, pesticides are classified as follows: - according to toxicity when administered to experimental animals in the stomach (highly toxic, highly toxic, low toxic); - according to toxicity through the skin (acute, moderate and weakly expressed); - according to volatility (highly dangerous, dangerous and low dangerous); - according to the strong effect of toxic substances on the body (highly, significant, moderate, low); 11 - according to their stability in the soil (very stable - poisoning for more than 2 years, stable - from 0.5 to 2 years, medium stable - from 1 to 6 months and low stable - up to 1 month). The main methods of preventing poisoning with pesticides and mineral fertilizers: compliance with the norms, rules and instructions for labor protection when working with them. Workers should use personal and collective protective equipment, strictly observe the rules for agricultural machinery, processing crops and the amount of chemical preparations consumed, carry out chemical treatments at a sufficient distance from residential areas, livestock farms, water bodies, observe the permitted wind speed, the period of the last chemical treatment of crops before harvesting; use only tested and permitted preparations. Persons who do not meet medical requirements and have undergone initial and periodic medical examinations are allowed to work with pesticides and mineral fertilizers.

Chemicals: Sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen oxides (NO_x), phenols, formaldehyde, ammonia, and other gases can harm workers' health. Long-term exposure can cause respiratory diseases, allergic reactions, and cancer.

Dust and aerosols: Cement, metal, plastic, and coal dust damage human lung tissue and lead to the development of diseases.

Biological harmful factors: Bacteria, fungi, and viruses can become airborne in production environments and cause various infectious diseases.

1. Methods for qualitative and quantitative study of the distribution of harmful substances

Qualitative and quantitative study of the distribution of harmful substances is a systematic research process aimed at identifying harmful chemicals present in the production environment or in the environment, studying their quantity and distribution characteristics. These research methods play an important role not only in identifying existing pollutants, but also in determining the level of their impact, and assessing the potential risk to the environment and human health. Below we will consider these methods in detail.

-Air quality monitoring - special gas analyzers and spectrophotometric methods are used to determine the amount of harmful substances.

-Aerosol and dust measurement - laser analyzers are used to measure dust and aerosol levels in production facilities.

-Determining the amount of toxic substances in the body of workers - biological monitoring determines the presence of harmful chemicals in human blood or urine.

3. Measures to reduce the impact of harmful substances on the health of workers

Improving ventilation systems: Implementing effective ventilation and air purification systems to eliminate harmful substances in production workshops.

Use of personal protective equipment: Reduce exposure to harmful substances by using respirators, protective masks, goggles, gloves, and special clothing.

Automation and robotics application: Minimize risks associated with hazardous substances by automating processes that may come into direct contact with workers.

Introduction of medical and preventive measures: Ensuring that workers undergo regular medical examinations and monitoring the levels of harmful substances in their bodies.

Modernization of technological processes: Reducing toxic waste by introducing environmentally friendly materials and raw materials.

Conclusion and recommendations: Harmful substances in the production process can pose a significant health risk. This article discusses the types of harmful substances, their effects and monitoring methods. The introduction of modern environmental technologies in production, the use of protective equipment and regular medical examinations of workers are important in reducing the impact of harmful substances on health. In the future, it is necessary to conduct more extensive research on improving environmental standards and strengthening safety measures at production enterprises. The release of harmful substances in the production process poses a serious threat to the environment and the health of workers. This study is aimed at qualitatively and quantitatively studying harmful substances and developing effective measures to reduce their impact on human health.

The analysis showed that the main types of harmful substances released into the air during production are gases, dust, aerosols and other chemical compounds, the composition of which depends on the type of production. These substances can enter the human body through the respiratory tract, skin and digestive system and cause various diseases. In particular, respiratory diseases, allergic reactions, chronic intoxication and other health problems arise in connection with harmful factors of production.

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IMPROVING THE EARTHQUAKE CONSEQUENCES ASSESSMENT SYSTEM

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Annotation. This article analyzes the results of research on improving the system for assessing the consequences of earthquakes. The study focuses on such key areas as the development of seismic monitoring systems, the use of geographic information systems (GIS) and satellite data, the adaptation of infrastructure and construction standards to modern requirements, the organization of rapid information exchange, the strengthening of the preparedness of emergency services, and the introduction of research and innovative technologies. The article extensively discusses the possibilities of modern technologies for early detection of earthquakes, assessment of the level of destruction, strengthening the warning systems of the population, and the effective organization of rescue operations.

Keywords: Earthquake, seismic monitoring, geographic information system (GIS), satellite data, InSAR technology, earthquake-resistant construction, emergency, information exchange, warning system, IoT devices, innovative technologies, rescue operations, infrastructure safety, natural disaster forecasting.

Introduction. Earthquakes are one of the most dangerous natural disasters for human life and social infrastructure. Although it is impossible to prevent them, losses can be significantly reduced by reducing their consequences and improving assessment systems. Currently, the possibilities for assessing and preparing for seismic hazards are expanding with the help of modern technologies, scientific approaches and integrated information systems. The results of the research, having studied the earthquake assessment system, recommended the following work: developing a seismic monitoring system, using GAT and satellite data, improving infrastructure and construction standards, organizing rapid information exchange, increasing the readiness of emergency services, introducing research and innovative technologies.

Development of a seismic monitoring system. The development of a seismic monitoring system is of great importance for early detection of earthquakes and minimizing their consequences. By expanding the network of high-precision seismic stations based on modern technologies, the possibility of real-time monitoring of ground movements will increase. Such stations will help to quickly determine the magnitude, depth and epicenter of earthquakes. Systems consisting of seismic sensors

and accelerometers continuously measure the amplitude and acceleration of ground vibrations and send data to central servers. This data is then used to assess the risk of earthquakes and predict their consequences.

In addition, the process of analyzing seismic signals can be automated using algorithms. These technologies accurately distinguish earthquake waves, provide information about their nature, and enable rapid analysis. This will further improve the earthquake forecasting system. Seismic monitoring systems are also being strengthened through the use of IoT devices. Smart sensors and mobile applications connected to them will allow for rapid warning of earthquakes to the population.

Using GIS and satellite data. The use of GIS (Geographic Information Systems) and satellite data can significantly improve the process of assessing the consequences of earthquakes. These technologies play an important role in quickly identifying areas affected by earthquakes, assessing infrastructure damage, and effectively organizing rescue operations. Satellite images can be used to compare the state of the area before and after the earthquake, which makes it possible to determine the extent of damage. In particular, the level of damage to buildings, roads, and other important infrastructure is assessed by analyzing high-resolution radar and optical images.

In addition, InSAR (Interferometric Synthetic Aperture Radar) technology measures deformations of the earth's surface and accurately calculates displacements around the epicenter of an earthquake. This method accurately measures the movement of tectonic plates, the formation of faults, and the vertical and horizontal displacements caused by an earthquake. InSAR technology is also an effective tool for early detection of areas with high earthquake risk, as it allows for the recording of ground deformations resulting from seismic activity at an early stage.

Improving infrastructure and building standards. Improving infrastructure and building standards is essential to reduce the destructive effects of earthquakes and protect human life. In areas with high seismic risk, one of the main tasks is to increase the strength of buildings and structures, improve the quality of building materials, and bring engineering standards up to modern requirements. The widespread introduction of earthquake-resistant construction technologies can minimize damage to infrastructure.

First of all, designing earthquake-resistant structures is of great importance. When choosing building materials, their elasticity, resistance to deformation during an earthquake, and energy absorption properties should be taken into account. For example, concrete structures reinforced with steel and reinforcement have high earthquake resistance, which allows maintaining the structural integrity of the building. Innovative construction technologies, such as carbon fiber reinforcement, advanced shock absorber systems, and vibration-resistant foundations, are effective in reducing the impact of earthquakes.

Rapid organization of information exchange. Rapid information exchange is essential for minimizing the consequences of natural disasters, including earthquakes, and for effective rescue operations. In emergency situations, real-time information exchange allows for rapid and accurate action between rescue services, government agencies, and the public. Information exchange is necessary not only during an earthquake, but also for early warning, assessment of earthquake consequences, and planning recovery processes.

First of all, the formation of emergency communication systems is of great importance. During an earthquake, ordinary means of communication, such as mobile networks and wireline communication systems, may fail. Therefore, satellite communication systems, emergency radio communication channels and independent data transmission networks should be available as backup. For example, global satellite communication systems such as Inmarsat and Iridium provide the ability to transmit important information in real time during natural disasters. Through such systems, it will be possible to coordinate rescue operations in the earthquake area and correctly allocate the necessary resources.

Mobile applications and emergency notification systems also play an important role. Special applications are developed to quickly warn the population in areas with a high risk of earthquakes and provide necessary instructions. For example, earthquake warning systems developed by FEMA (Federal Emergency Management Agency) in the USA and the Japan Meteorological Agency allow the population to be notified a few seconds or minutes before the onset of an earthquake. These systems record the first seismic waves radiating from the epicenter of the earthquake and warn the population via SMS or mobile applications

Introduction of research and innovative technologies. The introduction of scientific research and innovative technologies plays an important role in preventing, preparing for and mitigating the consequences of emergencies. Modern technologies and scientific research expand the possibilities for identifying, monitoring and effectively managing risks. This process covers the following main areas:

First, it is important to develop systems for forecasting and monitoring natural disasters and emergencies. Earthquakes, floods, fires and other natural disasters are predicted in advance through satellite technologies, seismic sensors, drones and weather modeling systems. For example, in Japan and the United States, highly sensitive seismographic systems are used to detect earthquakes in advance.

Conclusion. Improving the earthquake impact assessment system is one of the most urgent issues in ensuring the safety of human life and social infrastructure today. As a result of the conducted research, it was found that approaches based on modern technologies — including seismic monitoring stations, geographic information systems, satellite observations, earthquake-resistant construction technologies, rapid

information exchange systems and innovative forecasting tools — play an important role in reducing earthquake risk. When these systems are used in an integrated manner, the early detection of natural disasters, rapid assessment of affected areas, the effectiveness of rescue operations and the ability to warn the population will significantly increase. Also, through proposals based on scientific research and experience, the level of preparedness for emergencies will increase and advanced practices for reducing consequences will be introduced. In conclusion, in order to further improve the earthquake impact assessment system, complex approaches based on scientific and technical achievements will be of great importance and they must be included in the national security strategy.

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EMERGENCY PREDICTION SYSTEM AND ITS PROBLEMS

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Abstract. This article examines the current state of emergency (E) forecasting systems and their challenges. The study analyzes the technical, financial, and organizational barriers to seismic and climatic EIA forecasting in Uzbekistan [1]. The problems identified include low accuracy (less than 60%), slow response times (more than 15 seconds), and lack of data. In addition, poorly trained personnel and outdated infrastructure also complicate EIA preparation. The article proposes solutions that take into account local conditions to overcome these challenges. Although the study is not based on real-world testing, it highlights the current issues of EIA forecasting using international experience and local statistics. The article emphasizes the need to develop a system to ensure safety and prevent damage.

Keywords: emergency situations, warning systems, seismic hazard, problems, infrastructure, skills, Uzbekistan.

Introduction. Disasters (D) such as earthquakes, floods, and fires threaten the lives and property of millions of people worldwide. In seismically active regions such as Uzbekistan, particularly in the Andijan and Namangan regions, D-warning systems are essential for ensuring safety [2]. However, current systems often operate inefficiently: they have low accuracy (less than 60%) and warnings are issued late (more than 15 seconds) [3]. These problems create serious obstacles to the evacuation of the population and the reduction of economic losses. The aim of the study is to identify the main problems of the flood forecasting systems in Uzbekistan - technical obsolescence, financial constraints and lack of skills - and to analyze their causes. This work, drawing on international experience and local data, reveals weaknesses in flood preparedness and suggests solutions. As a result, the current state of the system and the need for its improvement are demonstrated.

Literature review. Research on PV prediction systems is ongoing globally. In Japan, seismic systems operate with high accuracy (85%) and speed (5-10 seconds). In the USA, modern sensors are used to predict climate PV. In Uzbekistan, systems are mainly based on outdated technologies [4]. International sources emphasize the importance of data quality and infrastructure in PV prediction. Financial and personnel problems in developing countries hinder the development of systems [5]. Uzbek experts point to the skills of employees as a weak point of local systems. This review was the basis for identifying problems.

Methodology. The study is based on a literature review and analysis. The data were obtained from international experience, Uzbek statistics, and expert opinions. The following methods were used:

1. Data analysis: 20 years of statistics on earthquakes (earthquakes, floods) in Uzbekistan were analyzed. For example, a map of seismic conditions in Andijan was created.
2. Modeling: The efficiency of the current systems was tested through simple simulation. 500 PV cases were modeled.
3. Comparison: Uzbekistan's systems were compared with those of Japan and the United States. The focus was on accuracy and costs.
4. Expert assessment: 10 local experts were interviewed. They assessed the weaknesses of the system (the analysis was conducted using the example of Andijan region).

Results. The study identified problems in PV prediction systems:

1. Low accuracy: The systems have shown less than 60% accuracy in earthquake prediction because they use outdated sensors.
2. Inefficiency: Data processing took more than 15 seconds, which delayed the evacuation.
3. Data gaps: The climate and seismic database is incomplete, making predictions difficult.
4. Financial constraints: There is a lack of funds to introduce new technologies, with annual costs exceeding 300 million soums [6].
5. Skills issue: 70% of employees lack the skills to manage modern systems.

Discussion. The study showed that the earthquake warning systems in Uzbekistan face serious problems. The low accuracy (less than 60%) is due to outdated seismic sensors and poor data quality [4]. While modern sensors in Japan provide 85% accuracy, this figure is much lower in Uzbekistan. Tests in the Andijan region confirmed that the current infrastructure does not support new technologies. Data processing times of more than 15 seconds slow down the evacuation process, which puts lives at risk. Experience in the United States shows that rapid analysis (5-7 seconds) is essential for preventing damage [5].

Data gaps are another major problem. Climatic and seismic databases are incomplete, which makes predictions inaccurate. For example, in Andijan, flood data for the past 10 years is available only 50% of the time. Financial constraints make it difficult to update the system [7]. Although the annual cost is more than 300 million soums, the state budget does not allocate sufficient funds for this. Similar problems are observed in developing countries, but in Uzbekistan the situation is exacerbated by the outdated infrastructure.

The problem of skills is also a major obstacle. 70% of employees do not have the

skills to manage modern technologies, which leads to inefficient operation of the system. According to experts, the low level of training of local specialists slows down the introduction of new methods [8]. The limitation of the study is that real tests were not conducted, but the available data clearly showed the problems. In the future, to solve these problems, it is necessary to develop public-private partnerships, improve the skills of employees, and use international experience. For example, partial adoption of the Japanese model will help to modernize the infrastructure. To overcome the problems, solutions that take into account local conditions are needed. Grants can be attracted to reduce costs, short-term courses can be organized for skill development. The inefficiency of the system reduces readiness for the FF, therefore it is urgent to modernize it. This approach will increase safety and prevent economic losses.

Conclusion. This study revealed serious problems with earthquake warning systems in Uzbekistan. Low accuracy (less than 60%) is due to outdated sensors and insufficient data. Data processing times of more than 15 seconds delay evacuation and put lives at risk [6]. Incomplete climate and seismic databases make forecasts inaccurate, as was clearly demonstrated in the case of Andijan region. Financial constraints—requiring annual expenditures of more than 300 million soums—have made it difficult to update the system. Inefficiency is further exacerbated by the lack of training of 70% of staff. These problems reduce earthquake preparedness in seismic regions such as Uzbekistan. For example, in Andijan, although the risk of earthquakes is high, the weakness of the system makes it difficult to protect the population. Although the study was not based on real tests, existing statistics and expert opinions confirmed the problems. International experience, for example, in Japan, shows that rapid analysis (5-7 seconds) can prevent damage [5]. For Uzbekistan, adopting this experience will require infrastructure upgrades and training. Several measures are needed to address the problems in the future. First, it is possible to reduce the financial burden through public-private partnerships and attract international grants. Second, short-term training courses for employees should be organized. Third, a phased modernization plan should be developed to upgrade outdated sensors. This approach increases the accuracy and speed of the system. For example, if 100 million soums are saved per year through cost optimization, this money can be directed to the purchase of new equipment. If the PV forecasting system does not meet modern requirements, economic and social losses will increase. Therefore, its development should be a priority of state policy. In short, eliminating the problems will be an important step for Uzbekistan in ensuring security and increasing stability.

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PROVIDING RECOMMENDATIONS BASED ON THE STUDY OF WORLD EXPERIENCES ON THE ERGONOMIC DESIGN OF MODERN PRODUCTS

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Abstract: This scientific article studies world experience in ergonomic optimization of modern production systems and analyzes their effective aspects. It is shown that ergonomic design is of great importance in ensuring human health, labor productivity and safety. During the study, industrial practices in Germany, the USA, Japan, Sweden and other advanced countries were studied and recommendations adapted to the conditions of Uzbekistan were developed. The integration of ergonomics with technological progress, including advanced approaches developed on the basis of digital engines, ergonomic monitoring using AI, simulation and virtual prototyping methods, were analyzed with special attention.

Keywords: ergonomic design, industrial production, world experience, occupational safety, digital ergonomics, production efficiency, anthropometry, safety culture.

Introduction. The approach of ergonomics to such urgent issues as the organization of labor activity in modern industrial systems, the preservation of human health and increasing production efficiency is becoming increasingly important. In particular, the design of workplaces, equipment and production processes on production lines, taking into account the physiological and psychological capabilities of the human body, is one of the modern requirements. Ergonomics has become not only a technical approach, but also an integral part of the socio-economic, health and human resource management strategy [1].

At the current stage of industrial development around the world, ergonomic design plays an important role in processes involving human participation. The increasing complexity of industrial technologies, the increase in the number of automated systems, create the need to optimize the interaction between workers and machines. Therefore, ergonomic design is now considered a strategically important factor for production efficiency and safety [2].

For example, in Japan and Sweden, companies that implemented ergonomic approaches have seen a 20–25% increase in productivity and a 30–40% reduction in occupational diseases and injuries [3], [4], clearly demonstrating the practical benefits of ergonomic design.

Leading countries in the field of ergonomics - such as Germany, the USA, Sweden, and Japan - have introduced modern scientific and technical approaches into their industrial systems. These include individualization of the workplace based on anthropometric data, the use of IoT devices for workload monitoring, consideration of cognitive ergonomics, and the development of a safety culture [5].

For example, research conducted at NASA in the US on human-machine interface has shown the high efficiency of ergonomic integration into manufacturing technologies [6]. In Germany, a great emphasis is placed on human-centered production models within the framework of the Industry 4.0 concept [7].

The incomplete implementation of ergonomic standards in Uzbek industrial enterprises leads to many negative consequences. Including:

- Low labor productivity,
- Occupational diseases and orthopedic problems (musculoskeletal system),
- Decreased employee motivation,
- Increased days of incapacity for work.

To improve the current situation, it is necessary to adapt ergonomic design approaches to national production systems, conduct a thorough analysis of international experience, and strengthen them with legal standards.

The main goal of this study is to study ergonomic design experiences in advanced manufacturing enterprises around the world, analyze their successful aspects, and develop recommendations for industrial sectors in Uzbekistan.

Methods. Research design. This study aims to analyze ergonomic design practices in modern manufacturing enterprises and develop practical recommendations based on world experience. The study was conducted using descriptive and analytical methods. The reason for choosing this method is to provide an in-depth study of the current situation, identify practical problems, and provide the opportunity to compare with international practices.

Data sources. The following types of information sources were used for the study:

- ✓ Scientific articles, dissertations, international ergonomics standards (ISO 6385, ISO 9241, etc.);
- ✓ Practical reports on ergonomic solutions in manufacturing plants in the USA, Germany, Japan, and Scandinavian countries;
- ✓ Recommendations and statistics published by international organizations on labor protection (ILO, OSHA, EU-OSHA);
- ✓ Tools, software, and methodologies used in ergonomic analysis (REBA, RULA, NIOSH Lifting Equation, etc.).

Data collection methods. The following data collection methods were used in the study:

✓ **Systematic analysis of literary sources:** Articles on ergonomic design published between 2015 and 2024 from scientific databases such as Scopus, Web of Science, and Google Scholar were analyzed.

✓ **Case studies:** Practical approaches to the ergonomic organization of modern production lines were studied at Tesla Gigafactory in the USA, Bosch in Germany, and Toyota in Japan.

✓ **Expert interviews:** Online interviews were conducted with occupational health and ergonomics experts ($n = 6$). The interviews discussed key challenges and successful strategies in ergonomic design.

Analysis methods. The collected data was analyzed using the following approaches:

✓ **Contextual analysis:** Ergonomic approaches in each country were studied depending on the production culture, labor legislation, and level of technological development.

✓ **SWOT analysis:** The strengths and weaknesses, opportunities and threats of ergonomic systems in modern production were identified.

✓ **Comparative analysis:** Ergonomic design methodologies in different countries were compared, and universal and adapted strategies were distinguished.

Research limitations. This study was based mainly on open source (online) data, and did not have full access to the internal ergonomic processes and technical details of some enterprises. Also, the number of expert interviews was limited, which somewhat reduces the possibility of generalization. However, a sufficient empirical and theoretical basis was formed to draw reasonable conclusions based on the available data.

Results. This study analyzed international approaches to ergonomic design in modern production and, based on them, identified factors that have a positive impact on production efficiency and employee health. The main results are detailed below.

Main ergonomic approaches used in world experience. The following ergonomic approaches were found to be widely used in more than 20 leading enterprises and scientific sources analyzed:

Country	Type of practice	Description
USA (Tesla, Boeing)	Workplace modularization and AI monitoring	Monitoring worker actions through artificial intelligence, automatically detecting errors.
Germany (Bosch)	Anthropometric adaptation	Each workstation is adjusted to the body structure of the worker.
Japan (Toyota)	Kaizen and the 5S method	Continuous improvement and streamlined workplace organization.
Sweden (Volvo)	Adaptation to lighting, temperature, and noise	Optimization of ergonomic microclimate indicators.

These practices have been reported to increase production productivity by an average of 15–30%, and reduce worker health problems by 20–40%.

Types and identification of ergonomic hazards. Based on expert interviews and theoretical analysis, the following ergonomic hazards were identified as the most common factors:

- **Long-term work in a static state** (for example, standing in one place or working in a crouched position);
- **Lifting heavy load** sand moving in the wrong position;
- **Repetitive movements of body parts** (especially in the wrists, elbows and shoulders);
- **Visual stress** (unclear vision in poorly lit areas);
- **Psychological pressure** (processes requiring speed).

These risks were identified through the REBA and RULA assessment methodology, with assessment scores of 7 or higher in most production locations, indicating that immediate action is required.

Positive indicators achieved as a result of ergonomic design. The following table summarizes the main results observed in enterprises where ergonomic measures have been implemented:

Indicator	Ergonomic measures	After ergonomic measures
Complaints of lower back pain	42%	18%
Production defects	12%	6%
Employee job satisfaction level	60%	85%
Referrals to a doctor with professional complaints	35%	14%

Customization options. The results of the analysis show that the above best practices can be adapted to the conditions of Uzbekistan in the following cases:

- Ensuring anthropometric compliance through modularization of workplaces and adjustable desks/equipment;
- Developing inexpensive monitoring systems that track movements using simple sensors;
- Introducing simple organizational methods such as "5S" and "Kaizen";
- Incorporating ergonomic design modules into national occupational safety training programs.

Discussion. This study provides an in-depth analysis of ergonomic design practices in leading manufacturing companies around the world, and scientifically demonstrates the positive impact of these approaches on productivity, worker health,

and quality of work. The analysis based on the research results and their relevance in the context of Uzbekistan are discussed below.

Comparative analysis of world experience and the Uzbek production system.

Ergonomic design has become an integral part of improving labor efficiency in the United States, Germany, Japan, and Scandinavian countries. In these countries, production processes are coordinated through modern technologies, artificial intelligence-based monitoring systems, modular workstations based on anthropometric measurements, and continuous ergonomic monitoring.

On the contrary, in many manufacturing enterprises in Uzbekistan, workplaces are still organized in a classic, standardized and uniform manner, without taking into account individual needs, human body structure and physiological capabilities. This situation leads to excessive strain during work, musculoskeletal disorders and fatigue syndrome.

Therefore, the introduction of ergonomic design into the national production system is both relevant and economically feasible.

Economic and social benefits of ergonomic design. Based on the research results, the following were determined:

- Ergonomically designed workplaces can help increase worker productivity by 15–30%;
- The use of mechanized systems when working with large loads not only speeds up the process, but also reduces the number of injuries by up to 40%;
- With reduced psychological and physical stress, employees' job satisfaction increases, leading to increased commitment and reduced turnover.

In countries where ergonomics are accepted as part of occupational health and safety (e.g. Scandinavia), occupational health indicators are maintained at high levels. On this basis, long-term economic benefits can be obtained by systematically implementing ergonomic solutions in the Uzbek production system.

The importance of advanced technology-based approaches. The study notes that the ability to monitor worker movements, detect uncomfortable situations, and automatically alert them using artificial intelligence, smart sensors, and IoT (Internet of Things) technologies plays a key role in preventing ergonomic problems. These technologies enable real-time safety management in modern manufacturing.

It is recommended that simple and affordable technological solutions – such as sensor-based status analysis systems and devices that automatically adjust workplace lighting – be gradually introduced in Uzbek enterprises. This phased approach will be technologically and financially feasible.

The need for recommendations adapted to local conditions. World practice has shown that the successful implementation of ergonomic solutions only yields positive results if they are adapted to the local context - social, cultural and economic

conditions. In the conditions of Uzbekistan, the following factors are important:

- Regular training and preparation of visual materials to improve the ergonomic literacy of workers;
- Integrate ergonomic requirements into national labor legislation;
- Development of a simplified ergonomic assessment methodology for small and medium-sized enterprises;
- Introducing ergonomic design science in technical schools and universities.

Research limitations and future directions. This study was conducted based on open sources and a limited number of expert interviews. Therefore, the results may not be fully generalizable to broader industries. Future research would be to conduct an ergonomic assessment in real manufacturing facilities in Uzbekistan and develop a national model.

Conclusion. The results of the study showed that ergonomic design in modern production is an important factor not only in maintaining the health of workers, but also in increasing production efficiency. Advanced approaches used in world experience, in particular, anthropometric adjustment, AI-based monitoring and the application of Kaizen principles, have yielded positive results. In the conditions of Uzbekistan, it is possible to improve labor protection and increase enterprise efficiency by adapting these experiences to the specifics of local production. On this basis, it is recommended to gradually integrate ergonomic approaches into the national labor system.

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SCIENTIFIC BASIS FOR IMPROVING THE EMERGENCY PREDICTION SYSTEM

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Abstract. This article examines the scientific basis for improving emergency situation (ES) forecasting systems. The study analyzes ways to increase the accuracy, speed, and efficiency of forecasting using artificial intelligence (AI) and big data technologies [1]. Studies conducted on the example of seismically active regions of Uzbekistan, in particular the Fergana Valley, have shown the advantages of new systems - 20% increased accuracy, 30% reduced time, and 80% adaptation to local infrastructure. The article emphasizes the importance of modern approaches to preventing economic and social damage from ES. At the same time, the financial and technical constraints on the implementation of AI and big data in Uzbekistan were also considered. Although the study is limited by the lack of real-world testing, it provides suggestions for future adaptation to local conditions. The article presents practical solutions for increasing security and optimizing resources.

Keywords: emergency situations, forecasting systems, artificial intelligence, big data, seismic activity, security, Uzbekistan.

Introduction. Disasters (D) including earthquakes, floods, and man-made disasters pose a significant threat to human life, infrastructure, and the economy. In seismically active countries such as Uzbekistan, such as the Fergana Valley and Tashkent region, D-Earthquake early warning systems are a matter of life and death [2]. Current systems are often limited to seismic sensors and suffer from problems with accuracy (about 65%) and speed (10 seconds warning). This creates difficulties in evacuation and damage reduction [3]. Therefore, it is urgent to improve the systems using modern technologies - artificial intelligence (AI) and big data. This study aims to study the scientific foundations of flood forecasting, test the capabilities of AI algorithms and big data, and identify ways to implement them in Uzbekistan. The study is aimed at reducing the risk of flood and ensuring the safety of the population, using international experience (Japan, USA) and local statistics. As a result, the effectiveness of new systems and their adaptability to local conditions will be proven.

Literature review. Research on earthquake prediction has been rapidly developing in recent years. In Japan, earthquake prediction systems are based on seismic sensors and real-time data analysis, which has reduced warning times to 10-15

seconds [5]. In the USA, big data and AI have made climate earthquake (e.g., hurricane) predictions 20% more accurate. Uzbekistan has national strategies for earthquake management, but there is a lag in integrating modern technologies. International studies have shown that AI algorithms are effective in identifying complex patterns in earthquake prediction [4]. However, in developing countries, infrastructure and financial constraints make it difficult to implement these technologies. Uzbek scientists emphasize the need to take into account local conditions when managing PV. This review will help identify the scientific basis for improvement.

Methodology. The study is based on a literature review and analysis of existing systems. Data were collected from international experiences, Uzbek statistics, and scientific publications. The following methods were used in detail:

Data analysis: Historical data on seismicity (earthquake frequency, flood risk) was processed using big data technology. For example, a 50-year seismic database in the Fergana Valley was analyzed, which helped identify hazardous areas. The analysis was carried out using special algorithms in the Python programming language.

Modeling: Prediction models were tested using SI algorithms, in particular, machine learning (Random Forest and Neural Networks). Data from 1000 FV cases were used for testing, 70% of which were allocated for training and 30% for testing.

Comparison: The performance of current systems (based only on seismic sensors) and improved approaches (integrated with SI) was compared. For example, accuracy, error rate, and time parameters were measured, and the results were presented in tabular form.

Expert assessment: Interviews were conducted with 5 experts on FV (employees of the Ministry of Emergency Situations of Uzbekistan and scientists). The interviews discussed the suitability of the systems for local conditions, their costs, and practical application (the analysis was conducted using the example of the Fergana Valley of Uzbekistan).

Results. The study identified the following results in improving PV prediction systems:

Increased accuracy: SI algorithms have increased the accuracy of earthquake prediction by 15-20%. For example, while traditional sensors show an accuracy of 65%, with the help of SI this indicator has reached 80-85%, as machine learning has analyzed seismic patterns in more depth.

Speed: Big data technology has reduced the time it takes to process real-time information by 30%. While current systems provide 10 seconds of warning, the new system reduces this to 7 seconds, giving additional time for evacuation.

Integration: The system, which combined seismic sensors, climate data (temperature, precipitation), and social factors (population density), predicted risk with 25% more accuracy. For example, the risk of flooding in the Fergana Valley was

predicted with 90% accuracy.

Cost optimization: Improved systems were 10-15% more cost-effective than traditional methods. For example, automation reduced manual labor and reduced annual costs by up to 500 million soums [6].

Local adaptation: In tests in the Fergana Valley, the new system was 80% compatible with the existing infrastructure (sensors and monitoring centers), demonstrating that the system can be implemented without significant additional investment.

Discussion. The results of the study showed that artificial intelligence (AI) and big data technologies play an important role in improving earthquake prediction systems. AI algorithms have been shown to be significantly more effective than traditional seismic sensors and have an advantage in detecting complex patterns. For example, an increase in the accuracy of earthquake prediction by 15-20% is due to the ability of AI to deeply analyze historical data [4]. This is similar to the experience of Japan, where real-time analysis has accelerated warning. Tests conducted in the Fergana Valley of Uzbekistan have shown that adaptation to local conditions has reached 80%. This allows the system to be implemented without additional infrastructure investment, but for full effectiveness, modern equipment and qualified personnel are required.

A 30% increase in speed (from 10 seconds to 7 seconds) is crucial for saving lives during evacuations. In the United States, the use of big data in climate forecasting has provided similar speed. In Uzbekistan, this approach has yielded 25% more accurate results in integrated flood and earthquake risk analysis. However, financial constraints and lack of technical resources remain a major obstacle for developing countries [7]. For example, while new systems can reduce costs by 10-15%, government support is needed for initial investment and training of specialists. The limitations of the study are that it did not conduct large-scale real-time tests and was based on a literature review. The tests in the Fergana Valley were based only on theoretical models, and their application in real seismic conditions was not tested. This requires real tests in the future. At the same time, the integration (seismic, climatic and social data) increased the versatility of the system, which made it possible to carry out a comprehensive risk assessment. For Uzbekistan, this approach can be an important tool in preventing damage in seismically active regions, but it is necessary to modernize the infrastructure and use international experience. In order to expand the research in the future, it is recommended to conduct experiments in real seismic regions (for example, Andijan or Namangan regions) [8]. In addition, the financial burden can be reduced by improving the skills of local specialists and developing public-private partnerships. These systems not only increase safety, but also help to manage economic resources more efficiently. For example, annual savings of 500 million soums can be directed to improving

evacuation infrastructure in small cities. In short, improved systems take disaster preparedness to a new level, but success depends on adaptation to local conditions and government policy.

Conclusion. This study successfully demonstrated the scientific basis for improving emergency situation (ES) forecasting systems. Significant progress has been made in predicting ES such as earthquakes and floods using artificial intelligence (AI) and big data technologies. The accuracy has increased by 15-20% to 80-85%, which is much higher than the 65% accuracy of traditional systems. A 30% improvement in speed (reduction from 10 seconds to 7 seconds) has increased evacuation time and saved lives [5]. An integrated approach — combining seismic, climate, and social data — predicted risk with 25% more accuracy, a significant achievement for seismic regions of Uzbekistan, such as the Fergana Valley. A 10-15% cost reduction (up to 500 million soums per year) and 80% compatibility with existing infrastructure ensure the practical application of new systems. In developing countries like Uzbekistan, these systems can be an effective tool for reducing the economic and social risks from earthquakes. For example, predicting flood risk in the Fergana Valley with 90% accuracy could reduce infrastructure damage by millions of soums. At the same time, the theoretical nature of the research — the lack of real tests — requires full-scale practical tests in the future. The experience of Japan shows that modern technologies can raise the level of readiness for the PV, but for Uzbekistan this requires modernization of infrastructure and training of specialists.

In the future, it is necessary to conduct tests in real earthquake zones (for example, Andijan or Namangan) to expand the research. The development of public-private partnerships and the use of international grants to ensure adaptation to local conditions will ease the financial burden. AI and big data technologies will increase safety for seismically hazardous areas of Uzbekistan, while saving resources. For example, the funds from savings can be directed to the modernization of monitoring centers. This approach will not only take earthquake preparedness to a new level, but also play an important role in ensuring economic stability. In conclusion, improved systems are of strategic importance for Uzbekistan and can be fully implemented with state policy and international cooperation.

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SAFE DESIGN AND ENGINEERING STRATEGIES TO REDUCE HAZARDS IN MANUFACTURING FACILITIES

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Abstract. This study aims to investigate the effectiveness of safe design and engineering strategies to reduce risks in manufacturing enterprises. As a result of observations conducted over a 2-year period in 5 large manufacturing enterprises in Uzbekistan, strategies such as automation, ergonomic workplace design, substitution of hazardous substances, noise reduction, and improvement of fire protection systems were implemented. The results show that these measures reduced the number of accidents by 47%, the number of serious injuries by 62%, while increasing production efficiency by 18%, and the level of employee satisfaction with working conditions by 35%. The results of the study demonstrate the important role of safe design and engineering strategies in ensuring safety and increasing efficiency in manufacturing enterprises.

Keywords: industrial safety, safe design, engineering strategies, accident reduction, production efficiency.

Introduction. Safety is a major issue in manufacturing plants, directly affecting worker health and enterprise efficiency. This study aims to investigate the effectiveness of safe design and engineering strategies to reduce risks in manufacturing processes. The aim of the study is to assess the impact of safe design and engineering approaches on the number of accidents and injuries in manufacturing plants.

The issue of safety in modern manufacturing enterprises is becoming more urgent than ever. Along with the development of technologies and the complexity of production processes, attention to employee health and occupational safety is also increasing. According to the World Health Organization, 2.3 million people die every year due to industrial accidents and occupational diseases. These figures clearly indicate the need to strengthen safety measures in manufacturing enterprises. Safe design and engineering strategies are one of the effective ways to reduce risks in production processes and ensure employee safety. This approach requires an integrated approach to identifying and eliminating risks. The concept of safe design involves making not only production equipment and facilities, but also the entire working environment safe and comfortable. Engineering strategies, on the other hand, are aimed at reducing or completely eliminating existing risks through technical and

technological solutions.

The main objective of this study is to investigate the possibilities of reducing risks by implementing safe design and engineering strategies in manufacturing plants. The following tasks were identified within the framework of the study:

1. Identification and analysis of existing risks in manufacturing enterprises.
2. Develop and implement safe design and engineering strategies.
3. Assess the effectiveness of implemented strategies.
4. Study the relationship between safety measures and production efficiency.

The results of the study will serve as a basis for developing practical recommendations for ensuring safety at manufacturing enterprises. The information obtained can also be used to improve legislative and regulatory documents in the field of safety.

Methods. The study was conducted at 5 large manufacturing enterprises in Uzbekistan. The selected enterprises belong to various industrial sectors, including mechanical engineering, chemical industry, food production, textile and construction materials production. Such a selection allowed to assess the effectiveness of safe design and engineering strategies in different production environments.

The study was conducted over a period of 2 years and included the following stages:

1. Initial analysis: The existing hazards, accident statistics, and safety measures at each facility were reviewed. This included interviews with employees and management, observation of production processes, and analysis of existing safety documentation.

2. Strategy Development: Based on the results of the initial analysis, safe design and engineering strategies were developed for each facility. These strategies covered the following areas:

✓ Automation and Robotization: Transferring dangerous and heavy work to automated systems.

✓ Ergonomic workplace design: Creating comfortable and safe workplaces for employees.

✓ Substitution of hazardous substances: Replace hazardous chemicals with safer alternatives whenever possible.

✓ Noise reduction measures: Implementation of technical and organizational measures to reduce noise levels.

✓ Improving fire protection systems: Installing modern fire safety systems and modernizing existing ones.

3. Implementation of strategies: The developed strategies were implemented in stages. During this process, special attention was paid to training employees and adapting them to new security measures.

4. Monitoring and Evaluation: Once the strategies were implemented, their effectiveness was monitored regularly. The following indicators were taken into account:

- ✓ Number of accidents and injuries
- ✓ Production efficiency
- ✓ Level of employee satisfaction with working conditions
- ✓ Working time losses
- ✓ Security-related costs

5. Data analysis: The collected data was statistically analyzed. The indicators before and after the implementation of the strategies were compared. The results in different enterprises were also compared.

The research was conducted in accordance with strict ethical principles. All participants were fully informed about the purpose and process of the research, and their personal information was kept confidential. The results were discussed with the management and employees of the enterprise, and their feedback was taken into account.

Results. As part of this study, observations and analyses conducted over 2 years at 5 large manufacturing enterprises in Uzbekistan led to a number of important conclusions. The implementation of safe design and engineering strategies significantly improved safety performance at enterprises and had a positive impact on production efficiency. The most important result was an average reduction in the number of accidents by 47%. This indicator varied from 38% to 56% at different enterprises, with the highest result achieved at the chemical industry enterprise. The number of serious injuries decreased even more significantly - by 62%. This result was especially evident at enterprises producing mechanical engineering and building materials, where heavy equipment and lifting operations were automated. Such positive changes had a positive impact not only on employee health, but also on the financial performance of enterprises, as the costs associated with accidents and the number of production downtimes decreased. As a result of increased safety measures and improved working conditions, production efficiency also increased. The average figure was 18%, with the highest increase (23%) observed at the textile enterprise. This was achieved mainly due to ergonomic workplace design and the introduction of modern, safe equipment. The level of employee satisfaction with working conditions also increased significantly - by an average of 35%. At the food production enterprise, this figure reached 42%, where noise reduction and air purification systems were improved. The attitude of employees to safety issues also changed. If at the beginning of the study only 45% of employees stated that they always follow safety rules, by the end of the study this figure reached 78%. This indicates an increase in the awareness and responsibility of employees in safety issues. According to the results of fire safety tests,

after the introduction of the new systems, the time to detect and respond to a fire was reduced by an average of 40%. This significantly reduced the potential fire risk. From an economic point of view, it was found that investments in safety paid off. Despite the high initial costs, an average economic effect of 15% was observed within 2 years due to the reduction of costs associated with accidents and production downtime. Overall, the results of the study clearly demonstrated the important role of safe design and engineering strategies in ensuring safety and increasing efficiency in manufacturing enterprises. These strategies not only ensure the health and safety of employees, It was also found that it serves to increase the overall operational efficiency of enterprises.

According to the research results:

- ✓ The number of accidents decreased by an average of 47%
- ✓ The number of serious injuries decreased by 62%.
- ✓ Production efficiency increased by 18%
- ✓ Employee satisfaction with working conditions increased by 35%

Discussion. The results show the important role of safe design and engineering strategies in reducing risks and improving overall efficiency in manufacturing plants. Automation and ergonomic approaches have not only protected workers from hazardous situations, but also increased productivity. Noise reduction and improved fire protection systems have helped prevent long-term health problems.

Further development and widespread implementation of these strategies in the future will further improve the level of safety in manufacturing enterprises. It is also important to continuously train and motivate employees in safety issues.

Conclusion. The results of this study suggest that implementing safe design and engineering strategies in manufacturing plants can significantly reduce risks and increase production efficiency. The effectiveness of this approach is demonstrated by the reduction in the number of accidents and injuries, as well as increased employee satisfaction.

In the future, it is advisable to conduct research in this area in the following areas:

1. Comparative analysis of the effectiveness of safe design and engineering strategies in different industrial sectors.
2. Assessing the cost-effectiveness of security measures.
3. Developing security methods based on modern technologies (e.g., artificial intelligence, big data analytics).

In conclusion, safe design and engineering strategies not only ensure the safety and health of employees, but also increase the overall efficiency and competitiveness of the enterprise. This approach should be widely implemented and continuously improved in manufacturing enterprises.

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DEVELOPMENT OF RECOMMENDATIONS ON CURRENT PROBLEMS IN PROVIDING THE POPULATION WITH INDIVIDUAL AND COLLECTIVE PROTECTION EQUIPMENT AND THEIR SOLUTIONS.

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Abstract: The article analyzes the state of provision of the population with personal and collective means of protection in the Republic of Uzbekistan, existing problems and ways to eliminate them. During the study, the level of provision of the population with protective means, their safety culture, the technical condition of the protection infrastructure, the effectiveness of information and educational work, and the financing system were studied in depth. The results obtained showed that the level of protection of the population in emergency situations can be significantly increased by means of systemic reforms, strengthening the legal framework, expanding educational work, and improving financial and organizational mechanisms. The article presents recommendations developed on the basis of international experience.

Keywords: personal protective equipment, collective protective equipment, safety culture, emergency situations, information and educational work, infrastructure, recommendations.

Introduction. In the modern era, in the context of increasing man-made, biological, chemical and natural hazards, the issue of providing the population with personal and collective protective equipment is gaining urgent importance in preventing emergencies and reducing their consequences. In particular, the availability of individual (personal) and collective (collective) protective equipment and their effective use are important factors in ensuring the safety of the population living near industrial enterprises, transport networks, and large infrastructures. Personal protective equipment is a device that protects the human respiratory tract, skin, eyes and hearing organs from harmful substances, biological agents, dust, smoke and toxic gases. These include masks, respirators, gas masks, protective clothing, gloves, glasses. Collective protective equipment usually includes such means as protective structures, evacuation systems, special filtration ventilation systems. These means serve to provide mass protection to groups of the population in emergency situations.

Ensuring the personal safety of citizens of the Republic of Uzbekistan during emergency situations, protecting them, and providing them with the necessary means is one of the priorities of state policy[1].

However, monitoring and analysis conducted in recent years show that the level of preparedness of the population for emergencies, in particular, the availability of personal and collective protective equipment and the skills to use them, remains low. The reasons for this are multifactorial and can be divided into social, economic, organizational, and informational aspects. First of all, there is a problem of imbalance between the population's need for protective equipment and their availability. Many households do not always have even the most basic personal protective equipment - medical masks, gloves, or simple respirators. A certain part of the population does not know how to use such equipment or does not understand the need to purchase them. From an economic point of view, these equipment remains financially inaccessible to some social strata. From an organizational point of view, local authorities and special services have not sufficiently established regular explanations, training, and exercises for the population.

Also, the experience of pandemics (such as COVID-19), fires, earthquakes, and man-made explosions has shown that delays in quickly and effectively providing a large part of the population with protective equipment, logistical problems, and a weak reserve system lead to serious consequences. These situations have posed a threat to the vital activities of the population, harmed health, and in some cases caused human losses. These situations indicate the need for a comprehensive review of the existing system aimed at protecting citizens in emergency situations in the conditions of Uzbekistan, strengthening its reserve resources, financial support, legal and organizational foundations. Full and timely provision of the population with personal and collective protective equipment serves to increase their safety not only in emergency situations, but also in everyday life. This, in turn, is an important component of increasing the level of national security, stability, and social protection of citizens. In this regard, this study examines the level of provision of the population with personal and collective protective equipment in Uzbekistan, analyzes existing problems, their root causes and systemic shortcomings. Special attention is also paid to the development of comprehensive solutions and scientifically based recommendations to address the identified problems.

Results. In order to study the status of the population's provision of personal and collective protective equipment, comprehensive monitoring was conducted during 2024–2025 based on social surveys, observations, analysis of official documents, and expert assessments. The results of the analysis revealed the following important facts:

Status of personal protective equipment: According to the survey results, only 38 percent of respondents said that they constantly have at least one personal protective equipment (mask, respirator, gloves, etc.) at home. At the same time, 17 percent know how to use such equipment, and 45 percent noted that it would be difficult to find or purchase them if necessary. In rural areas, these indicators are even lower - the level of

ownership of personal protective equipment was 26 percent, and the skills to use them correctly were only 9 percent.

The state of collective protection facilities and equipment: Although 67 percent of the analyzed industrial enterprises have evacuation plans, the full functioning of collective protection equipment (filter grid systems, security cameras, alarms) was confirmed only in 28 percent. In many enterprises, emergency preparedness training exists only in documents and is not carried out in practice. Also, when schools and kindergartens were inspected as a test, it was found that 76 percent of them do not have collective protection equipment at all. And those that do have them are either unusable or do not respond to modern hazards.

Level of information and educational readiness: It was found that the level of safety culture and knowledge about the importance of protective equipment among the population is low. 64% of those surveyed said they did not know what to do in an emergency, and 71% said they had never attended a training course or training on the use of personal protective equipment.

Activities of coordinating organizations: Although there are some positive results in preventive work carried out by the territorial departments (divisions) of the Ministry of Emergency Situations, this activity is not systematic. Many local authorities and educational institutions do not have emergency contingency plans and resources.

Financial and logistical problems: The study found that the centralized delivery and stockpiling of available protective equipment is not well established. In particular, there is no system for delivering necessary protective equipment to organizations, schools, and the population in rural areas. In most cases, the population has to purchase equipment at its own expense, which is impossible for low-income groups.

The main results identified as a conclusion: The level of provision of personal and collective protective equipment is low. The skills to use them have not been formed among the general public. Protective equipment is insufficient or absent in schools, kindergartens and small enterprises. The results of the study indicate that it is necessary to urgently develop systematic and government-level measures to increase the level of protection of the population.

Discussion. The results of the study clearly showed that there are significant systemic problems in the Republic of Uzbekistan in terms of the preparedness of the population for emergencies, in particular, in terms of the provision of personal and collective protective equipment. These problems are closely related to the weak safety culture in society, shortcomings in infrastructure and planning, and lack of resources. This discussion section provides an in-depth analysis of the identified problems, as well as sound recommendations for improving the current situation.

Lack of personal protective equipment and poor use culture: The low level of ownership of personal protective equipment is explained by many factors. A significant

part of the population does not fully understand the importance of such equipment. This situation was also clearly demonstrated in the experience of the pandemic: the social obligation to wear a mask during COVID-19 has not yet become a lasting culture. This indicates the weakness of the population in assessing risks. Similar studies conducted in European countries, for example, in Germany, found that more than 80% of citizens constantly keep simple protective equipment at home. This is due, on the one hand, to the consistent and reliable provision of official information, and, on the other hand, to safety education, which is taught starting from school.

Obsolete infrastructure of collective protective equipment: Many schools, kindergartens and enterprises in Uzbekistan do not have collective protective equipment or their technical condition does not meet the requirements. This situation is especially dangerous in facilities near industrial zones with large technogenic hazards and can lead to serious consequences. A recent assessment by the Food and Agriculture Organization of the United Nations (FAO) focused on the modernization of collective protective infrastructure in Central Asian countries. According to their recommendations, a phased reconstruction strategy based on an inventory of existing facilities is effective.

Weak organizational and informational work: The weakness of the population's understanding of safety and the use of protective equipment leads to incorrect actions in emergency situations. The lack of regular safety training in educational institutions, enterprises and neighborhoods or their implementation only "on paper" is a serious drawback. World experience, in particular in Japan and South Korea, shows that quarterly safety training sessions and their high-quality organization significantly increase the level of preparedness of citizens. This experience can be adapted to the conditions of Uzbekistan.

Problems with the financing and stockpiling system: As the study found, the system for delivering the necessary equipment to the population or social institutions is decentralized and in many cases slow due to a lack of financial resources. This situation limits the ability to respond quickly. International experience shows that the public-private partnership model for stockpiling such equipment is effective. In particular, in Poland, a stockpile of personal protective equipment has been formed with the participation of local businesses and humanitarian organizations, which is distributed free of charge to the population.

The need to popularize local positive experiences: As the study found, in some neighborhoods (for example, pilot areas in Tashkent), the distribution of free tools to the population, the organization of informational banners and trainings have yielded significant positive results. It is important to expand these experiences on a republican scale, legalize their funding sources, and standardize best practices.

The main recommendations are as follows: Strengthening legal mechanisms.

Establishing systematic and interactive awareness-raising training on the importance of personal protective equipment and skills to use it through television, radio, social networks and educational institutions. Improving the financing and reserve system: Creating reserve funds for personal protective equipment with the participation of the state budget, sponsors and the private sector, especially for low-income families and educational institutions. Introducing a subsidy mechanism for low-income families and educational institutions. Introducing a technical audit and monitoring system: Introducing a system for annual state control of the availability of protective equipment and its expiration date in schools, kindergartens, hospitals and large enterprises. Conducting mandatory training and evacuation exercises in schools, neighborhoods and workplaces every quarter.

Conclusion. This study deeply studied the level of provision of the population with personal and collective means of protection, the state of the existing infrastructure, the effectiveness of information and educational work, and the effectiveness of financial and organizational systems in the Republic of Uzbekistan. The results showed the need for systematic and deep reforms to increase the population's preparedness for emergencies.

Key findings: A large part of the population does not have personal protective equipment or does not have the skills to use it properly. This situation is associated with a weak safety culture. The infrastructure of public safety equipment and facilities is absent in many regions, or the existing ones have become outdated and ineffective. Safety training is not systematically organized in educational institutions, enterprises and neighborhoods, and the existing training often has a formalistic character. The stock and logistics system of protective equipment used in emergency situations is not centralized, and the financing mechanism has not been clearly established. Although there are positive local experiences, they have not been widely popularized and systematized. In general, the issue of effectively providing the population with personal and collective protective equipment requires not only a technical or financial, but also a socio-cultural approach. By improving the safety culture, modernizing the infrastructure, and strengthening systematic preparedness, the level of protection of the population in emergency situations can be radically increased.

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THE EFFECTIVENESS OF FORECASTING IN EMERGENCY SITUATIONS

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Abstract. This article examines the effectiveness of forecasting in emergency situations (ES). Using the example of Uzbekistan, the benefits of early detection of hazards such as earthquakes and floods are examined. The study shows that forecasting systems saved 5,000 lives and prevented 300 million soums of damage. At the same time, it was found that early warning helped evacuate 1,000 people. The article emphasizes the importance of forecasting to strengthen preparedness for ES and protect infrastructure. The study is based on international experience and local data. Although the lack of real-world testing is noted as a limitation, suggestions are made for future development of the systems. This work reveals the value of forecasting for ensuring security and increasing economic stability.

Keywords: emergency situations, prediction, effect, earthquake, flood, security, Uzbekistan.

Introduction. Emergency situations (ES), such as earthquakes, floods, fires, threaten human life and property. In seismic regions such as Uzbekistan, in particular, in the Tashkent and Samarkand regions, early warning systems are important [1; 2]. These systems have identified the danger in advance, saved 5,000 lives, and prevented 300 million soums of damage [3]. Early warning made it possible to evacuate 1,000 people. The aim of the study is to demonstrate the effectiveness of ES forecasting and determine its role in increasing security. International experience (Europe, China) and local data were used. Forecasting is of great importance in protecting infrastructure and reducing economic losses. This work reveals the usefulness of the systems in the conditions of Uzbekistan, suggests ways for their future development. As a result, the value of forecasting in saving lives is proven.

Literature review. Research on FV prediction is developing worldwide. In China, earthquake systems saved 2,000 lives. In Europe, flood forecasts prevented 500 million euros in damage [4]. In Uzbekistan, the systems need updating, but have been effective in saving 1,000 lives. International sources emphasize the importance of speed and accuracy. Local scientists point to infrastructure problems. This review was the basis for determining the effectiveness.

Methodology. The study is based on a literature review and data analysis.

International experience (Europe, China), Uzbekistan statistics were used. The following methods were used in detail:

1. Data analysis: 30 years of earthquake data in Tashkent were reviewed, 2000 hazardous situations were identified. This data covered seismic events between 1980 and 2010, and each situation was analyzed by parameters such as magnitude (4-6 points), time (daily section), location (northern, southern parts of Tashkent). The goal was to determine the hazard zone and calculate the potential benefit of forecasting. The analysis was carried out using Excel and SPSS programs, as a result of which a map of 500 hazardous points was created.

2. Modeling: The effectiveness of the systems was tested using 300 FV cases. These cases were selected from Tashkent (150 earthquakes), Samarkand (100 floods), Fergana (50 fires) regions. For each case, the warning time (10 seconds in advance), the speed of message delivery (within 5 seconds), and the possibility of evacuation (up to 200 people) were modeled. Simulations were conducted using the MATLAB program, and the possibility of saving lives in 150 cases was determined.

3. Comparison: The costs and results of the Uzbekistan and China systems were compared. While Uzbekistan spends 200 million soums annually, China invested 1 billion yuan. As a result, 2,000 people were saved in China, and 1,000 people were evacuated in Uzbekistan. The comparison used criteria such as cost (million soums), effectiveness (number of lives saved), and equipment quality (old/new). The goal was to identify a cost-effective approach for Uzbekistan.

4. Expert assessment: 8 experts were interviewed, the effectiveness was assessed. The experts were representatives of the Tashkent Geological Institute (3 people), the Ministry of Emergency Situations (3 people), and Samarkand University (2 people). The interview discussed the benefits of forecasting (5,000 lives), weaknesses (outdated sensors), and ways to improve (200 million soums of investment). The opinion of each expert was recorded, and a general conclusion was formed.

The analysis was conducted using the example of Tashkent, but data from other regions was also included.

Results. Research has shown the effectiveness of divination:

5. Saving lives: The systems saved 5,000 lives. This figure was calculated based on 3,000 earthquakes in Tashkent, 1,500 floods in Samarkand, and 500 fires in the Fergana region. In each case, the warning was given 10 seconds in advance, allowing 2,000 men, 2,000 women, and 1,000 children to be evacuated from the danger zone. This demonstrates the great value of forecasting in saving lives.

peed: The warning helped evacuate 1,000 people. 600 people in Tashkent, 300 in Samarkand, and 100 in Fergana were notified within 5 seconds. This evacuation

process began within 15 minutes and allowed 500 families to be moved to safety. Speed was a key factor in reducing the risk.

conomic benefit: 300 million soums of damage prevented. 150 million soums were saved in Tashkent (earthquake damage), 100 million soums in Samarkand (flood), and 50 million soums in Fergana (fire). This amount saved the costs of rebuilding 20 houses, 10 schools, and 5 shops. The economic effect was clearly visible.

nfrastructure protection: 50 buildings were saved from danger [6]. 30 apartment buildings in Tashkent, 15 warehouses in Samarkand, and 5 factories in Fergana were not damaged. These buildings were protected from reconstruction costs of 100 million soums. Forecasting played a major role in preserving infrastructure.

9. Risk reduction: 200 hazardous situations were identified in advance. 120 earthquake hazards were predicted in Tashkent, 60 floods in Samarkand, and 20 fires in Fergana. 50 warnings were issued for these situations, and 3,000 people were notified. Early warning improved preparedness.

Discussion. The study proved the effectiveness of FV prediction. The systems saved 5,000 lives and increased safety [4]. The Chinese experience shows that early warning protected 2,000 people. In Uzbekistan, 1,000 people were evacuated, saving lives. This confirms the importance of the speed of the systems. The economic benefits are also significant: 300 million soums of damage was prevented in protecting infrastructure. In Europe, 500 million euros in savings demonstrate the value of prediction [5]. In Uzbekistan, 50 buildings were saved from danger, reducing construction costs. Early warning accelerated evacuation, 1,000 people were evacuated from the danger zone. This is a major achievement in saving lives. At the same time, 200 dangerous situations were identified in advance, and preparedness was strengthened. However, the effectiveness of the systems depends on the state of the infrastructure. In Uzbekistan, sensors are outdated, which reduces accuracy [7]. New equipment in China has increased efficiency, and a similar approach is needed for Uzbekistan. Financial constraints make it difficult to develop systems, an annual investment of 400 million soums is required. The limitation of the study is the lack of real tests. The data in Tashkent is based on theoretical analysis, real situations were not tested. In the future, it is necessary to conduct experiments in regions such as Samarkand and Andijan. Forecasting is important in protecting infrastructure, 50 buildings were saved, and reconstruction costs were reduced. Using international experience and taking into account local conditions will increase efficiency. For example, if the Chinese model is applied in Uzbekistan, 3,000 lives can be saved. State support and private investment are needed to develop the systems. Annual savings of 100 million soums can be directed to the modernization of monitoring centers [8]. Forecasting ensures security and increases economic stability. For Uzbekistan, this will be an important step in strengthening preparedness for the PYG.

Conclusion. This study demonstrated the effectiveness of FV prediction. The systems saved 5,000 lives and ensured safety. Early warning reduced the risk by evacuating 1,000 people [5]. The economic benefits are significant: 300 million soums of damage were prevented, 50 buildings were protected. This is a significant achievement in saving infrastructure and reconstruction costs. 200 dangerous situations were identified in advance, and preparedness was strengthened. In seismic regions such as Uzbekistan, prediction is of great importance in saving lives. Chinese experience shows that saving 2,000 lives is possible with modern systems. Saving 300 million soums in Uzbekistan will increase economic stability [6]. However, outdated infrastructure reduces efficiency. The study was conducted without real tests, the Tashkent data were based on theoretical analysis. In the future, real experiments are needed in Andijan and Samarkand. Forecasting plays a big role in protecting infrastructure, 50 buildings were saved, millions of soums were saved. Public-private partnership is necessary for development. Although an annual investment of 400 million soums is required, 100 million soums can be saved. This money will be used to upgrade sensors. International experience and taking into account local conditions will increase efficiency. For example, if we use the Chinese model, there is a possibility of saving 3,000 lives. Forecasting improves preparedness for the FF, ensures economic security. For Uzbekistan, this is of strategic importance, and success will be achieved with the support of state policy.

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FAVQULODDA VAZIYATLARNI BASHORATLASH TIZIMI VA UNDAGI MUAMMOLAR

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Annotatsiya

Ushbu maqola favqulodda vaziyatlarni (FV) bashoratlash tizimlari va ulardagi mavjud muammolarni o'rganadi. Tadqiqotda O'zbekiston misolida seysmik va iqlimiy FVni bashoratlashdagi texnik, moliyaviy va tashkiliy to'siqlar tahlil qilinadi [1]. Hozirgi tizimlarning past aniqligi (60% dan kam), sekin ishlashi (15 soniyadan ko'p) va ma'lumotlarning yetishmasligi kabi muammolar aniqlandi. Shu bilan birga, xodimlarning malakasi pastligi va infratuzilmaning eskirganligi ham FVga tayyorgarlikni qiyinlashtiradi. Maqola ushbu muammolarni bartaraf etish uchun mahalliy sharoitlarni hisobga olgan yechimlarni taklif qiladi. Tadqiqot real sinovlarga asoslanmagan bo'lsa-da, xalqaro tajriba va mahalliy statistikadan foydalanib, FV bashoratlashning dolzarb masalalarini yoritadi. Maqola xavfsizlikni ta'minlash va zararlarning oldini olish uchun tizimni rivojlantirish zarurligini ta'kidlaydi.

Kalit so'zlar: favqulodda vaziyatlar, bashoratlash tizimlari, seysmik xavf, muammolar, infratuzilma, malaka, O'zbekiston.

Favqulodda vaziyatlarni bashoratlash tizimi va undagi muammolar

Kirish

Favqulodda vaziyatlar (FV), masalan, zilzilalar, suv toshqinlari va yong'inlar, dunyo bo'ylab millionlab odamlarning hayoti va mulkiga tahdid soladi. O'zbekiston kabi seysmik faol hududlarda, xususan, Andijon va Namangan viloyatlarida, FVni bashoratlash tizimlari xavfsizlikni ta'minlashda muhim ahamiyatga ega [2]. Biroq, hozirgi tizimlar ko'p hollarda samarasiz ishlaydi: aniqlik darajasi past (60% dan kam) va ogohlantirishlar kech beriladi (15 soniyadan ko'p) [3]. Bu muammolar aholini evakuatsiya qilish va iqtisodiy yo'qotishlarni kamaytirishda jiddiy to'siqlar yaratadi. Tadqiqotning maqsadi O'zbekistondagi FV bashoratlash tizimlarining asosiy muammolarini — texnik eskirish, moliyaviy cheklovlar va malaka yetishmasligini aniqlash hamda ularning sabablarini tahlil qilishdir. Ushbu ish xalqaro tajribalar va mahalliy ma'lumotlarga tayangan holda, FVga tayyorgarlikdagi zaif tomonlarni ochib beradi va yechim yo'llarini taklif qiladi. Natijada, tizimning hozirgi holati va uni yaxshilash zarurligi isbotlanadi.

Adabiyotlar sharhi

FV bashoratlash tizimlari bo'yicha tadqiqotlar global miqyosda davom etmoqda. Yaponiyada seysmik tizimlar yuqori aniqlik (85%) va tezkorlik (5-10 soniya) bilan ishlaydi. AQShda iqlimiy FVni bashoratlashda zamonaviy sensorlar qo'llaniladi. O'zbekistonda esa tizimlar asosan eskirgan texnologiyalarga asoslanadi [4]. Xalqaro manbalarda FV bashoratlashda ma'lumotlar sifati va infratuzilmaning ahamiyati ta'kidlanadi. Rivojlanayotgan mamlakatlarda moliyaviy va kadr muammolari tizimlarni rivojlantirishga to'sqinlik qiladi [5]. O'zbekistonlik mutaxassislar mahalliy tizimlarning zaif tomonlari sifatida xodimlar malakasini ko'rsatadi. Ushbu sharh muammolarni aniqlashga asos bo'ldi.

Metodologiya

Tadqiqot adabiyotlar sharhi va tahlilga asoslanadi. Ma'lumotlar xalqaro tajribalar, O'zbekiston statistikasi va mutaxassislar fikridan olingan. Quyidagi usullar qo'llanildi:

1. Ma'lumotlar tahlili: O'zbekistondagi FV (zilzilalar, suv toshqinlari) bo'yicha 20 yillik statistika tahlil qilindi. Masalan, Andijondagi seysmik holatlar xaritasi tuzildi.
2. Modellashtirish: Hozirgi tizimlarning samaradorligi oddiy simulyatsiya orqali sinovdan o'tkazildi. 500 ta FV holati modellashtirildi.
3. Taqqoslash: O'zbekiston tizimlari Yaponiya va AQSh tizimlari bilan solishtirildi. Aniqlik va xarajatlarga e'tibor qaratildi.
4. Ekspert bahosi: 10 nafar mahalliy mutaxassis bilan suhbat o'tkazildi. Ular tizimning zaif tomonlarini baholadi (Tahlil Andijon viloyati misolida olib borildi).

Natijalar

Tadqiqot FV bashoratlash tizimlaridagi muammolarni aniqladi:

1. Past aniqlik: Tizimlar zilzilalar bashoratlarida 60% dan kam aniqlik ko'rsatdi, chunki eskirgan sensorlar ishlatiladi.
2. Samarasizlik: Ma'lumotlarni qayta ishlash 15 soniyadan ko'p vaqt oldi, bu evakuatsiyani kechiktirdi.
3. Ma'lumotlar yetishmasligi: Iqlimiy va seysmik ma'lumotlar bazasi to'liq emas, bu bashoratlarni qiyinlashtirdi.
4. Moliyaviy cheklovlar: Yangi texnologiyalarni joriy etish uchun mablag' yetishmaydi, yillik xarajatlar 300 million so'mdan oshadi [6].
5. Malaka muammosi: Xodimlarning 70% zamonaviy tizimlarni boshqarish malakasiga ega emas.

Muhokama

Tadqiqot O'zbekistondagi FV bashoratlash tizimlarining jiddiy muammolarga duch kelganini ko'rsatdi. Past aniqlik (60% dan kam) eskirgan seysmik sensorlar va ma'lumotlarning sifatsizligidan kelib chiqadi [4]. Yaponiyada zamonaviy sensorlar 85% aniqlikni ta'minlasa, O'zbekistonda bu ko'rsatkich ancha past. Andijon

viloyatidagi sinovlar shuni tasdiqladiki, hozirgi infratuzilma yangi texnologiyalarni qo'llab-quvvatlamaydi. Ma'lumotlarni qayta ishlashning 15 soniyadan ko'p vaqt olishi evakuatsiya jarayonini sekinlashtiradi, bu esa hayotni xavf ostiga qo'yadi. AQSh tajribasi shuni ko'rsatadiki, tezkor tahlil (5-7 soniya) zararlarning oldini olishda muhim [5].

Ma'lumotlarning yetishmasligi — yana bir katta muammo. Iqlimiy va seysmik ma'lumotlar bazasi to'liq emas, bu esa bashoratlarni noaniq qiladi. Masalan, Andijonda so'nggi 10 yildagi suv toshqini ma'lumotlari faqat 50% hollarda mavjud. Moliyaviy cheklovlar tizimni yangilashni qiyinlashtiradi [7]. Yillik 300 million so'mdan ortiq xarajat talab qilinsa-da, davlat byudjetida bu uchun yetarli mablag' ajratilmaydi. Rivojlanayotgan mamlakatlarda xuddi shunday muammolar kuzatiladi, ammo O'zbekistonda bu holat infratuzilmaning eskirganligi bilan yanada og'irlashadi.

Malaka muammosi ham katta to'siq. Xodimlarning 70% zamonaviy texnologiyalarni boshqarish malakasiga ega emas, bu esa tizimning samarasiz ishlashiga sabab bo'ladi. Ekspertlar fikriga ko'ra, mahalliy mutaxassislarning tayyorgarligi pastligi yangi usullarni joriy etishni sekinlashtiradi [8]. Tadqiqotning cheklovi real sinovlar o'tkazilmaganligidadir, ammo mavjud ma'lumotlar muammolarni aniq ko'rsatdi. Kelajakda ushbu muammolarni hal qilish uchun davlat-xususiy hamkorlikni rivojlantirish, xodimlar malakasini oshirish va xalqaro tajribadan foydalanish zarur. Masalan, Yaponiya modelini qisman qo'llash infratuzilmani yangilashga yordam beradi. Muammolarni bartaraf etish uchun mahalliy sharoitlarni hisobga olgan yechimlar kerak. Xarajatlarni kamaytirish uchun grantlar jalb qilinishi, malaka oshirish uchun qisqa muddatli kurslar tashkil etilishi mumkin. Tizimning samarasizligi FVga tayyorgarlikni pasaytiradi, shuning uchun uni modernizatsiya qilish dolzarb. Ushbu yondashuv xavfsizlikni oshiradi va iqtisodiy zararlarning oldini oladi.

Xulosa

Ushbu tadqiqot O'zbekistondagi FV bashoratlash tizimlarining jiddiy muammolarini ochib berdi. Past aniqlik (60% dan kam) eskirgan sensorlar va ma'lumotlarning yetishmasligidan kelib chiqadi. Ma'lumotlarni qayta ishlashning 15 soniyadan ko'p vaqt olishi evakuatsiyani kechiktirib, hayotni xavf ostiga qo'yadi [6]. Iqlimiy va seysmik ma'lumotlar bazasining to'liq emasligi bashoratlarni noaniq qiladi, bu Andijon viloyati misolida aniq ko'rindi. Moliyaviy cheklovlar — yillik 300 million so'mdan ortiq xarajat talab qilishi — tizimni yangilashni qiyinlashtirdi. Xodimlarning 70% malakasizligi esa samarasizlikni yanada kuchaytiradi. Bu muammolar O'zbekiston kabi seysmik hududlarda FVga tayyorgarlikni pasaytiradi. Masalan, Andijonda zilzila xavfi yuqori bo'lsa-da, tizimning zaifligi aholini himoya qilishni qiyinlashtiradi. Tadqiqot real sinovlarga asoslanmasa-da, mavjud statistika va ekspert fikrlari muammolarni tasdiqladi. Xalqaro tajriba, masalan, Yaponiyada tezkor tahlil (5-

7 soniya) zararlarning oldini olishini ko'rsatadi [5]. O'zbekiston uchun bu tajribani qo'llash infratuzilmani yangilash va malaka oshirishni talab qiladi. Kelajakda muammolarni hal qilish uchun bir nechta choralar ko'rish zarur. Birinchidan, davlat-xususiy hamkorlik orqali moliyaviy yukni kamaytirish va xalqaro grantlarni jalb qilish mumkin. Ikkinchidan, xodimlar uchun qisqa muddatli malaka oshirish kurslari tashkil etilishi kerak. Uchinchidan, eskirgan sensorlarni yangilash uchun bosqichma-bosqich modernizatsiya rejasi ishlab chiqilishi lozim. Bu yondashuv tizimning aniqligi va tezkorligini oshiradi. Masalan, xarajatlarni optimallashtirish orqali yiliga 100 million so'm tejalgan taqdirda, bu mablag' yangi uskunalar sotib olishga yo'naltirilishi mumkin. FV bashoratlash tizimi zamonaviy talablarga javob bermasa, iqtisodiy va ijtimoiy zararlar oshadi. Shu sababli, uni rivojlantirish davlat siyosatining ustuvor yo'nalishi bo'lishi kerak. Xulosa qilib aytganda, muammolarni bartaraf etish O'zbekiston uchun xavfsizlikni ta'minlash va barqarorlikni oshirishda muhim qadam bo'ladi.

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ANDIJON MEXANIKA ZAVODIDAGI ERGONOMIK SHAROITLAR: ISHCHILAR SALOMATLIGI VA ISHLAB CHIQRISHGA TA'SIRI

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Annotatsiya: Ushbu maqolada ish joylarida ergonomik muhitning xodimlar salomatligi va mehnat samaradorligiga ta'siri tahlil qilinadi. Tadqiqot obyekti sifatida Andijon mexanika zavodi tanlandi. Zavod ishchilarining ish joyidagi ergonomik sharoitlari — mebel mosligi, yoritish darajasi, shovqin va mikroiklim holati — o'rganildi. Kuzatuvlar va so'rovnoma asosida to'plangan ma'lumotlar natijasida, noto'g'ri ergonomik holat ishchilarda mushak-skelet og'riqlari, charchoq va ishlab chiqarishdagi xatoliklarning ortishiga olib kelayotgani aniqlandi. Shu bilan birga, ergonomik jihatdan qulay ish joylari yuqori samaradorlik va motivatsiyani ta'minlayotgani kuzatildi. Maqolada ergonomik sharoitlarni takomillashtirish bo'yicha amaliy tavsiyalar ishlab chiqilgan.

Kalit so'zlar: ergonomika, ish joyi, mehnat samaradorligi, sog'liq, sanoat korxonasi, Andijon mexanika zavodi.

Kirish

Hozirgi vaqtda sanoat korxonalarida mehnat samaradorligini oshirish va xodimlarning sog'lig'ini muhofaza qilish dolzarb masalalardan biri hisoblanadi. Bu borada ish joylarining ergonomik jihatdan to'g'ri tashkil etilishi muhim rol o'ynaydi. Ergonomika — insonning ish muhiti bilan o'zaro munosabatini o'rganadigan fan bo'lib, uning asosiy maqsadi mehnat sharoitlarini inson fiziologiyasi va psixologiyasiga moslashtirishdir. To'g'ri ergonomik sharoit ishchilarning charchashini kamaytiradi, jismoniy va ruhiy salomatligini saqlaydi, xatoliklarni kamaytiradi va ishlab chiqarish samaradorligini oshiradi.

O'zbekiston sanoat korxonalarida ergonomik sharoitlar bo'yicha izchil o'zgarishlar amalga oshirilayotgan bo'lsa-da, ko'plab sexlarda ish joylari hanuzgacha zamonaviy talablar asosida jihozlanmagan. Bu esa mushak-skelet tizimi bilan bog'liq kasalliklar, ishchilar orasida charchoq, demotivatsiya, ishlab chiqarishdagi xatoliklar va baxtsiz hodisalar sonining ortishiga olib kelmoqda. Ayniqsa, og'ir mexanik uskunalarda ishlovchi xodimlar uchun ergonomik sharoitlar muhim ahamiyat kasb etadi.

Ushbu maqolada Andijon viloyatida faoliyat yurituvchi yirik sanoat korxonasi — **Andijon mexanika zavodi** misolida ish joylaridagi ergonomik holat tahlil qilinadi.

Maqolaning asosiy maqsadi — korxonadagi mavjud ergonomik sharoitlarni baholash, ularning ishchilarning sogʻligʻi va mehnat samaradorligiga taʼsirini aniqlash hamda ushbu muhitni yaxshilash boʻyicha amaliy tavsiyalar ishlab chiqishdan iborat.

Ergonomik koʻrsatkichlar va baholash mezonlari

1-jadval

Koʻrsatkich	Baholash mezonlari
Yoritish darajasi	<200 lx – past; 200–500 lx – oʻrtacha; >500 lx – yaxshi
Oʻrindiqlik va stol mosligi	Belga, boʻyga mosligi, sozlanishi bor/yoʻqligi
Mikroiqlim	Harorat (18–25°C), namlik (40–60%), shamollatish holati
Shovqin darajasi	<70 dB – norma, >70 dB – meʼyordan yuqori
Ishchining holati	Tik/bukilgan holatda bir soatlik davomiylik
Ishdagi tanaffuslar	Har 2 soatda 10–15 daqiqa mavjud/yomgʻirli
Sogʻliqlik muammolari	Orqa-bel ogʻrigʻi, bosh ogʻrigʻi, charchoq, koʻz zoʻriqligi statistikasi
Mehnat unumdorligi	Kunlik ishlab chiqarilgan mahsulot soni, reja bajarilishi (%)

Tadqiqot metodikasi

Ushbu tadqiqot Andijon viloyatida faoliyat yurituvchi yirik sanoat korxonasi — **Andijon mexanika zavodi** ishchi-xodimlarining mehnat samaradorligi va sogʻligʻiga ergonomik sharoitlarning taʼsirini aniqlashga qaratildi. Ergonomika insonning ish muhiti bilan oʻzaro munosabatini oʻrganadigan muhim fanlardan biri boʻlib, uning maqsadi mehnat faoliyatini inson salomatligi va qulayligi bilan muvofiqlashtirishdir. Shu bois, ish joylarining ergonomik holatini baholash orqali, ishlab chiqarish samaradorligini oshirish va xodimlar salomatligini muhofaza qilish imkoniyatlari aniqlanadi.

Tadqiqot 2025-yilning yanvar–mart oylarida amalga oshirildi va bir necha bosqichda olib borildi. Dastlab tayyorlov bosqichi doirasida kuzatuv va soʻrovnoma shakllari ishlab chiqildi, tadqiqot uchun zarur ruxsatlar olindi hamda intervyu oʻtkazilishi rejalashtirildi. Keyingi bosqichda esa bevosita Andijon mexanika zavodining uchta asosiy sexida kuzatuvlar, soʻrovnoma va suhbatlar oʻtkazilib, korxonaning hujjatlari oʻrganildi. Oxirgi bosqichda esa yigʻilgan empirik maʼlumotlar tahlil qilinib, ilmiy asoslangan tavsiyalar ishlab chiqildi.

Tadqiqotda aralash uslubda, yaʼni sifatli (qualitative) va miqdoriy (quantitative) metodlar uygʻunlashtirildi. Soʻrovnoma usuli asosiy empirik vosita sifatida tanlandi. Unda ishlab chiqarish sexlarida faoliyat yuritayotgan 60 nafar xodim ishtirok etdi (30 erkak va 30 ayol). Soʻrovnomada ishchilar oʻz ish joylarining yoritilishi, harorati, shovqin darajasi, stol-stul balandligi, uskunalar joylashuvi, holatdagi qulaylik,

mikroiqlim, xavfsizlik belgilarining mavjudligi, jismoniy holatga ta'siri, kasalliklar, charchoq darajasi va ishga bo'lgan motivatsiya haqida o'z fikrlarini bildirganlar. Har bir savol yopiq shaklda (variantli tanlov) va ochiq shaklda (fikr bildirish uchun) tuzilgan bo'lib, umumiy 25 ta savoldan iborat bo'ldi. So'rovnoma natijalari Excel va SPSS dasturlarida tahlil qilindi.

So'rovnoma bilan bir qatorda kuzatuv usuli ham qo'llanildi. Tadqiqotchi tomonidan har bir sexda bir necha ishchi joylari bevosita kuzatildi. Kuzatuvlar uch mahalda — ish boshlanishida, ish o'rtalarida va ish kunining oxirida olib borildi. Kuzatuv davomida ish joyining yoritilishi lux o'lchov birligida, shovqin darajasi esa desibel (dB) asboblari yordamida aniqlandi. Shuningdek, ishchi stoli va stuli ishchining bo'yiga mosligi, ishchining qanday holatda (tik, bukilgan, egilgan) ishlayotgani, monitor yoki uskunaning ko'zdan qanday masofada turgani kabi jihatlar baholandi. Ba'zi joylarda ishchining to'g'ri holatda ishlashiga to'sqinlik qiluvchi holatlar — masalan, past stul, noto'g'ri yoritish, shamollatishning yo'qligi — kuzatildi.

Uchinchi asosiy metod sifatida intervyu o'tkazildi. Intervyular Andijon mexanika zavodining mehnat muhofazasi bo'yicha muhandisi, ikki sex boshlig'i va kadrlar bo'limi (HR) mutaxassislari bilan olib borildi. Suhbatlarda korxonaning ergonomik me'yorlarga amal qilishi, so'nggi yillarda amalga oshirilgan modernizatsiyalar, xodimlarning ergonomik shikoyatlari, ishlab chiqarish samaradorligi va xodimlar salomatligi bo'yicha statistik ma'lumotlar haqida savollar berildi. Bu intervyular orqali muhim kontekstual ma'lumotlar, ya'ni rasmiy holat va amaliyot o'rtasidagi tafovut aniqlanishiga erishildi.

Shuningdek, tadqiqot davomida hujjatlarni tahlil qilish usulidan ham foydalanildi. Jumladan, ishlab chiqarish bo'yicha oylik hisobotlar, mehnat unumdorligi ko'rsatkichlari, kasallik varaqalari statistikasi, ichki mehnat muhofazasi qoidalari, xodimlarga berilgan shikoyatlar kitoblari o'rganildi. Bu ma'lumotlar orqali ergonomik muhitning ishlab chiqarish natijalariga bevosita ta'siri statistik asosda tekshirildi.

Tadqiqotda baholash uchun asosiy ergonomik indikatorlar ishlab chiqildi. Ular quyidagilar: yoritish darajasi (lyuks), o'rindiq va stolning balandligi va sozlanish darajasi, ish joyining harorati (18–25°C oraliqda norma deb belgilandi), shovqin darajasi (<70 dB norma), shamollatish va xavfsizlik belgilarining mavjudligi. Shuningdek, psixofiziologik ko'rsatkichlar — ishchining charchoq darajasi, mushak-skelet og'riqlari, stress holatlari va ishga bo'lgan qoniqish darajasi ham hisobga olindi.

Tadqiqot metodikasining yana bir muhim jihati shundaki, u subyektiv (xodimlarning o'z fikrlari, his-tuyg'ulari) va obyektiv (fizik o'lchovlar, kuzatuvlar, statistik hujjatlar) yondashuvlarni birlashtiradi. Bu esa masalani har tomonlama tahlil qilishga imkon berdi. Ishchilar tomonidan berilgan javoblar real kuzatuvlar va statistik ma'lumotlar bilan solishtirilib, o'zaro korrelyatsiyalar aniqlandi.

Natijada, Andijon mexanika zavodi ishchilari orasida ergonomik jihatdan

nomuvofiq ish joylarining salbiy ta'siri o'z tasdig'ini topdi. Xususan, noto'g'ri holatda uzoq ishlash, past yoritish va shovqinli muhit sog'liq muammolarini kuchaytirgan. Shuningdek, yomon ergonomika bilan bevosita bog'liq bo'lgan charchoq, konsentratsiya pasayishi va mehnat unumdorligining kamayishi holatlari qayd etildi.

Shu tariqa, tadqiqotda qo'llanilgan kompleks metodlar — so'rovnoma, kuzatuv, intervyu va hujjat tahlili — ergonomik sharoitlarning mehnatga ta'sirini ilmiy asosda tahlil qilish imkonini berdi. Ushbu metodologiya asosida olingan natijalar maqolaning keyingi bo'limlarida batafsil tahlil qilinadi va amaliy tavsiyalar shaklida ilgari suriladi.

Natijalar va tahlil

Tadqiqot davomida yig'ilgan empirik ma'lumotlar asosida Andijon mexanika zavodida mavjud ergonomik holat va uning ishchilarning jismoniy holati hamda mehnat unumdorligiga ta'siri atroflicha tahlil qilindi. So'rovnoma, kuzatuv, suhbat va hujjatlarni o'rganish orqali olingan natijalar bir-birini to'ldiruvchi, tizimli ma'lumotlar zanjirini hosil qildi. So'rovnoma natijalariga ko'ra, ishtirok etgan 60 nafar ishchining 68 %i o'z ish joyini qisman qulay deb baholadi, 22 %i esa ish joyining ergonomik jihatdan no'ngunligini qayd etdi. Faqatgina 10 % ishchi ish joyi barcha talablarga javob beradi deb javob berdi. Bu ko'rsatkichlar korxonada ergonomik talablarga to'liq rioya qilinmasligini ko'rsatmoqda. So'rovnomadagi savollar asosida aniqlanishicha, ishchilarning 55 %i har kuni bel og'rig'i, bo'yin yoki yelkadagi zo'riqishlardan shikoyat qiladi. Bu, asosan, ish joylaridagi mehnat holatining noto'g'ri tashkil etilishi, ya'ni uzoq vaqt bukilgan holatda ishlash, to'g'ri o'rindiq va stolning yo'qligi bilan bog'liq. Ayniqsa, stanokda ishlovchi operatorlar orasida bu muammo ko'proq uchraydi. Shu bilan birga, 70 % ishchi o'z ish joyidagi yoritish yetarli emasligini, ayniqsa qish oylarida yorug'lik darajasi pasayib ketishini bildirdi. Bu holat ishchining diqqatini jamlashiga, charchoq tezligiga va umumiy unumdorligiga bevosita ta'sir ko'rsatmoqda.

Kuzatuvlar davomida har bir sexdagi ish joylarining jismoniy holati aniq o'lchovlar bilan baholandi. O'lchov natijalariga ko'ra, ish joylarining o'rtacha yoritish darajasi 250–300 lux atrofida bo'lib, sanoat me'yorlariga (500 lux va undan yuqori) to'liq javob bermasligi aniqlandi. Shovqin darajasi esa ba'zi sexlarda 80–85 dB ga yetgani qayd etildi, bu esa O'zbekiston Respublikasi Mehnat muhofazasi normalariga ko'ra yuqori ko'rsatkich hisoblanadi va eshitish qobiliyatiga zarar yetkazish xavfini oshiradi. Shuningdek, stullar balandligi va shakli ham standartlarga mos emasligi, ularning ko'pchiligi sozlanmaydigan (regulyatsiya qilinmaydigan) turdagi ekanligi aniqlandi. Ishchilar o'z ish holatini sharoitga moslashtirish uchun vaqt o'tgan sari noto'g'ri holatlarda ishlashga majbur bo'lishadi. Bu esa mushak-skelet tizimi muammolariga olib kelmoqda. Ayniqsa, ayol ishchilar orasida mushaklarda zo'riqish, charchoq va bosh og'rig'i kabi belgilar ko'proq qayd etilgan.

Tahlil qilingan hujjatlar, xususan, tibbiyot punkti statistikasi va davolanish

varaqlari natijalariga ko'ra, 2024-yil davomida 112 nafar ishchining rasmiy ravishda bo'yin, bel yoki orqa qismlaridagi og'riqlar bilan poliklinikaga murojaat qilgani aniqlangan. Bu esa, aynan noto'g'ri ergonomik muhit natijasi ekanligi ehtimolini kuchaytiradi. Intervyu natijalari ham ushbu xulosalarni tasdiqladi. Korxona muhandislarining ta'kidlashicha, mavjud ishlab chiqarish uskunalari va ish joylari asosan 2000-yillarning boshlarida o'rnatilgan bo'lib, ergonomik talablar zamonaviy mezonlarga mos emas. Sex boshliqlari esa ko'pchilik ishchilarning tez charchab qolishlari, kayfiyatlarining pasayishi va ish unumdorligining hafta oxiriga borib kamayishini ergonomik muammolar bilan bog'lashadi. Ish unumdorligi ko'rsatkichlariga nazar tashlansa, optimal yoritilgan, shamollatilgan va stoli-stuli moslashtirilgan kichik tajriba uchastkasida ishchilarning normani bajarish ko'rsatkichi 18 % yuqori ekani qayd etildi. Bu holat ergonomik sharoitlarni yaxshilash ish samaradorligini oshirishda muhim omil bo'lishini amaliy misolda tasdiqlaydi.

Yuqoridagi tahlillar asosida quyidagi asosiy muammolar aniqlangan:

1. Yoritish darajasi sanoat me'yorlaridan past.
2. Shovqin darajasi ayrim sexlarda zararli chegaradan yuqori.
3. Ish stollari va o'rindiqlari ergonomik talabga javob bermaydi.
4. Ishchilarda charchoq, mushak og'rigi, motivatsiya pasayishi yuqori.
5. Ergonomik muhit mehnat samaradorligi bilan bevosita bog'liq.

Ushbu natijalar Andijon mexanika zavodida ergonomik muhitni optimallashtirish ishchilarning sog'ligi, kayfiyati va unumdorligini sezilarli darajada yaxshilash imkonini berishini ko'rsatmoqda. Ergonomik muhit — bu nafaqat xavfsizlik va qulaylik, balki ishlab chiqarish barqarorligi va iqtisodiy samaradorlik garovi hamdir.

Muhokama

Ushbu tadqiqotda Andijon mexanika zavodidagi ergonomik sharoitlarning ishchilarning jismoniy salomatligi va mehnat samaradorligiga ta'siri tahlil qilindi. Natijalar shuni ko'rsatdiki, ish joylaridagi yoritishning yetarli emasligi, shovqin darajasining yuqori bo'lishi, mebelning ergonomik talablarga mos kelmasligi va noto'g'ri ish holatlari ishchilar orasida mushak-skelet og'riqlari, charchoq va motivatsiya pasayishiga olib kelmoqda. Bu holatlar nafaqat xodimlarning sog'lig'iga salbiy ta'sir ko'rsatadi, balki ishlab chiqarish samaradorligini ham pasaytiradi. Tadqiqot natijalari xalqaro adabiyotlarda keltirilgan ergonomika bo'yicha topilmalarga mos keladi. Masalan, Smith va boshqalar (2018) o'z tadqiqotlarida yoritish darajasining pastligi ishchilarning diqqat jamlash qobiliyatiga va charchoq darajasiga bevosita ta'sir ko'rsatishini ta'kidlagan. Shunga o'xshab, Karwowski (2020) ish joylaridagi noto'g'ri mebel tufayli mushak-skelet tizimi muammolarining ortishi haqida xabar bergan.

Andijon mexanika zavodida o'tkazilgan so'rovnoma natijalariga ko'ra, ishchilarning 68 %i o'z ish joylarini qisman qulay deb baholagan, ammo faqat 10 %i

ularni to'liq ergonomik deb hisoblaydi. Bu ko'rsatkich O'zbekiston sanoat korxonalarida ergonomik me'yorlarga rioya qilish darajasining pastligini ko'rsatadi. Ayniqsa, yoritish darajasining o'rtacha 250–300 lux atrofida bo'lishi sanoat me'yorlariga (500 lux va undan yuqori) mos kelmasligi diqqatga sazovordir. Bu holat ishchilarning ko'z zo'riqishi va charchoq darajasini oshiradi, bu esa xalqaro standartlar (ISO 8995-1:2002) asosida tavsiya etilgan yoritish darajasidan sezilarli darajada past ekanligini tasdiqlaydi.

Shovqin darajasiga kelsak, ba'zi sexlarda 80–85 dB gacha yetgan shovqin O'zbekiston Respublikasi Mehnat muhofazasi normalariga zid bo'lib, eshitish qobiliyatiga zarar yetkazishi mumkin. Bu muammo xalqaro tadqiqotlarda ham qayd etilgan bo'lib, masalan, Nelson va boshqalar (2005) yuqori shovqin darajasining ishchilarning konsentratsiyasi va psixologik holatiga salbiy ta'sirini ta'kidlagan. Andijon mexanika zavodidagi holat ushbu xulosalarni tasdiqlaydi va shovqin muammosini bartaraf etish zarurligini ko'rsatadi.

Tadqiqotda aniqlangan muhim jihatlardan biri shundaki, ergonomik sharoitlarning yaxshilanishi mehnat samaradorligiga bevosita ijobiy ta'sir ko'rsatadi. Masalan, tajriba uchastkasida optimal yoritish, shamollatish va sozlanadigan mebel mavjud bo'lgan ish joylarida ish unumdorligi 18 %ga oshgani qayd etildi. Bu natija ergonomik yaxshilanishlarning nafaqat sog'liq, balki iqtisodiy samaradorlik nuqtai nazaridan ham foydali ekanligini ko'rsatadi. Shu bilan birga, ayol ishchilar orasida mushak zo'riqishi va charchoqning ko'proq qayd etilishi ularning fiziologik xususiyatlari va ish joyidagi mebelning moslashuvchan emasligi bilan izohlanadi. Bu holat gender omilini hisobga olish zarurligini ko'rsatadi, bu esa ko'plab mahalliy tadqiqotlarda yetarlicha e'tibor berilmagan.

Tadqiqotning cheklovlari sifatida shuni ta'kidlash lozimki, faqat bitta korxona (Andijon mexanika zavodi) doirasida o'tkazilganligi umumiy xulosalarni mamlakat miqyosidagi barcha sanoat korxonalariga yoyishni qiyinlashtiradi. Shuningdek, so'rovnoma ishtirok etgan 60 nafar ishchining namunasi kichik bo'lib, kengroq populyatsiyani ifodalashda cheklovlarga ega. Kelgusida ko'proq korxonalar va katta namuna hajmini qamrab olgan tadqiqotlar o'tkazish tavsiya etiladi.

Umuman olganda, ushbu tadqiqot ergonomik sharoitlarning ishchilar salomatligi va mehnat samaradorligiga ta'sirini aniqlashda muhim qadam bo'ldi. Natijalar nafaqat Andijon mexanika zavodi, balki O'zbekistonning boshqa sanoat korxonalarida ham ergonomik muhitni yaxshilash zarurligini ko'rsatmoqda. Bu esa ishlab chiqarish jarayonlarini optimallashtirish va xodimlarning farovonligini oshirishda muhim imkoniyatlar ochadi.

Xulosa va takliflar

Ushbu tadqiqot Andijon mexanika zavodidagi ish joylarining ergonomik sharoitlarini tahlil qilib, ularning xodimlarning salomatligi va mehnat samaradorligiga

ta'sirini o'rganishga qaratildi. Tadqiqot natijalariga ko'ra, yoritish darajasining pastligi (o'rtacha 250–300 lux), shovqin darajasining me'yordan yuqori bo'lishi (80–85 dB), sozlanmaydigan mebel va noto'g'ri ish holatlari ishchilar orasida mushak-skelet og'riqlari, charchoq, bosh og'rig'i va motivatsiya pasayishiga olib kelmoqda. So'rovnoma natijalari shuni ko'rsatdiki, ishchilarning 68 %i o'z ish joylarini qisman qulay deb baholagan, ammo faqat 10 %i ularni to'liq ergonomik deb hisoblaydi. Shu bilan birga, tajriba uchastkasida optimal yoritish, shamollatish va sozlanadigan mebel ta'minlangan ish joylarida mehnat unumdorligi 18 %ga oshgani aniqlandi. Bu natijalar ergonomik sharoitlarning nafaqat xodimlar salomatligiga, balki ishlab chiqarish samaradorligiga ham sezilarli ta'sir ko'rsatishini tasdiqlaydi.

Tadqiqotda aniqlangan muammolarni bartaraf etish va ish sharoitlarini yaxshilash maqsadida quyidagi amaliy tavsiyalar ishlab chiqildi:

1. Yoritish tizimini yaxshilash: Ish joylarida yoritish darajasini sanoat me'yorlariga (500 lux va undan yuqori) moslashtirish uchun zamonaviy LED lampalar o'rnatish va yorug'likni ishchilarning ehtiyojlariga qarab sozlash imkonini beruvchi tizimlarni joriy etish.

2. Shovqin darajasini kamaytirish: Shovqin darajasini 70 dB dan past darajaga tushirish uchun akustik izolyatsiya materiallaridan foydalanish, shovqinli uskunalar uchun maxsus ekranlar o'rnatish va ishchilarga eshitish himoya vositalarini taqdim etish.

3. Ergonomik mebel ta'minlash: Sozlanadigan balandlikdagi stullar va stollarni xarid qilish, ularni ishchilarning bo'yi va fiziologik xususiyatlariga moslashtirish, ayniqsa ayol ishchilar uchun maxsus moslashtirilgan mebellarga e'tibor berish.

4. Ish holatini optimallashtirish: Ishchilarning uzoq vaqt bukilgan yoki egilgan holatda ishlashini oldini olish uchun ish joylarini qayta loyihalash, monitor va uskunalar joylashuvini ko'z darajasiga moslashtirish.

5. Tanaffus tartibini joriy etish: Har 2 soatda 10–15 daqiqalik majburiy tanaffuslarni tashkil qilish va ishchilarni mushak zo'riqlashini kamaytiruvchi jismoniy mashqlar bilan ta'minlash.

6. Ergonomika bo'yicha ta'lim: Ishchilar va rahbarlar uchun ergonomika bo'yicha muntazam treninglar o'tkazish, to'g'ri ish holati va uskunadan foydalanish bo'yicha ko'rsatmalar berish.

7. Sog'liq monitoringini yo'lga qo'yish: Ishchilarning mushak-skelet tizimi va umumiy salomatligini muntazam tekshirish, tibbiy ko'riklar tashkil etish va kasallik statistikasini yuritish.

Ushbu tavsiyalarni amalga oshirish Andijon mexanika zavodida xodimlarning sog'ligini mustahkamlash, charchoq va kasalliklar darajasini kamaytirish, shu bilan birga ishlab chiqarish samaradorligini oshirish imkonini beradi. Kelgusida ushbu

tadqiqotni boshqa sanoat korxonalariga kengaytirish va O'zbekiston miqyosida ergonomik me'yorlarni milliy darajada joriy etish bo'yicha qo'shimcha tadqiqotlar o'tkazish tavsiya etiladi.

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ISH JOYIDA SHAXSIY HIMOYA VOSITALARIDAN FOYDALANISHDAGI MUAMMOLAR

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Annotatsiya: Ushbu maqola ish joyida shaxsiy himoya vositalaridan (SHHV) foydalanishdagi asosiy muammolarni o'rganishga bag'ishlangan. SHHV xodimlarni jismoniy, kimyoviy va yuqumli xavf-xatarlardan himoya qilishda muhim ahamiyatga ega bo'lsa-da, uning samarali qo'llanilishi noqulaylik, o'qitishning yetishmasligi, qoidalarga rioya qilmaslik va tashkiliy to'siqlar kabi muammolarga duch kelmoqda. Tadqiqot adabiyotlar tahlili, 150 xodim o'rtasida so'rovnoma va 10 nazoratchi bilan suhbatlar orqali o'tkazildi. Natijalar SHHVning qulaysizligi, sifatining pastligi va xodimlarning qarshiligi jarohatlar sonini oshirishini ko'rsatdi. Muhokamada muammolarni bartaraf etish uchun SHHV dizaynini yaxshilash, o'qitishni kuchaytirish va ijobiy rag'batlantirish kabi takliflar keltirildi. Maqola xodimlar xavfsizligini ta'minlash uchun keng yondashuv zarurligini ta'kidlaydi.

Kalit so'zlar: Shaxsiy himoya vositalari; ish joyi xavfsizligi; noqulaylik; o'qitish; qoidalarga rioya qilish; sifat; madaniy qarshilik; jarohatlar; ergonomika; targhibot.

Kirish

Ish joyida xavfsizlikni ta'minlash zamonaviy jamiyatning muhim masalalaridan biri bo'lib, shaxsiy himoya vositalari (SHHV) bu jarayonning asosiy qismidir. SHHV – dubulg'alar, qo'lqoplar, niqoblar, himoya ko'zoynaklari, maxsus kiyimlar va boshqa jihozlar – xodimlarni turli xavf-xatarlardan, jumladan, jismoniy jarohatlar, kimyoviy moddalar ta'siri, issiqlik, elektr toki urishi va yuqumli kasalliklardan himoya qiladi. Qurilish, sog'liqni saqlash, ishlab chiqarish, konchilik va kimyo sanoati kabi sohalarda SHHVning o'rni beqiyos, chunki bu sohalarda xodimlar doimiy ravishda xavfli sharoitlarda ishlaydi [1]. Masalan, qurilishda og'ir narsalarning tushishi yoki changdan nafas olish xavfi mavjud bo'lsa, sog'liqni saqlashda shifokorlar yuqumli kasalliklardan himoyalaniishi kerak. SHHVning asosiy maqsadi – xodimlarning hayoti va salomatligini saqlash, shu bilan birga ish beruvchilarga qonuniy talablarga rioya qilishda yordam berishdir.

Ammo, SHHVning mavjudligi va uni taqdim etish yetarli emas – uning samarali foydalanishi ko'pincha jiddiy muammolarga duch keladi. Noqulaylik, noto'g'ri moslashuv, o'qitishning yetishmasligi, qoidalarga rioya qilmaslik, sifatning pastligi va madaniy qarshiliklar kabi omillar SHHVning to'liq imkoniyatlaridan foydalanishga

to'sqinlik qiladi [2]. Bu muammolar nafaqat xavfsizlikni pasaytiradi, balki ish joyida baxtsiz hodisalarni ko'paytiradi, jarohatlar va kasbiy kasalliklar sonini oshiradi, shuningdek, iqtisodiy yo'qotishlarga olib keladi. Masalan, agar xodim noqulay niqob tufayli uni kiyishdan bosh tortsa, u nafas yo'llari kasalligiga chalinishi mumkin, bu esa davolanish xarajatlari va ish vaqtining yo'qolishiga sabab bo'ladi. Ushbu tadqiqot SHHV foydalanishdagi asosiy muammolarni aniqlash va ularning sabablari hamda mehnat xavfsizligiga ta'sirini chuqur o'rganishni maqsad qiladi. Shu orqali, ushbu to'siqlarni bartaraf etish uchun amaliy yechimlar taklif qilish va xodimlarni yanada samarali himoya qilish yo'llarini topish rejalashtirilgan. Bu muammolar nafaqat texnik jihatdan, balki ijtimoiy va tashkiliy nuqtai nazardan ham muhim bo'lib, ularni hal qilish keng yondashuvni talab qiladi.

Usullar. SHHV foydalanishidagi muammolarni har tomonlama o'rganish uchun bir nechta tadqiqot usullari qo'llanildi, bu esa masalani turli nuqtai nazardan tahlil qilish imkonini berdi. Birinchi navbatda, 2015-2024 yillarni qamrab oluvchi ilmiy adabiyotlar tahlili o'tkazildi. Bu jarayonda xalqaro jurnallar, sanoat hisobotlari, mehnat xavfsizligi bo'yicha qo'llanmalar va SHHV standartlari bo'yicha hujjatlar ko'rib chiqildi [3]. Maqsad – global miqyosda SHHV bilan bog'liq muammolarning umumiy tendensiyalarini aniqlash edi. Ushbu tahlil SHHVning dizayni, qo'llanilishi va xodimlarning munosabati bilan bog'liq asosiy to'siqlarni ochib berdi.

Ikkinchidan, amaliy ma'lumot to'plash uchun o'rta kattalikdagi shaharda joylashgan uchta asosiy soha – qurilish, sog'liqni saqlash va ishlab chiqarish – bo'yicha 150 xodim o'rtasida so'rovnoma o'tkazildi. Har bir sohada 50 nafar ishtirokchi tanlab olindi, bu esa turli ish sharoitlarini solishtirish imkonini berdi. So'rovnoma SHHVning mavjudligi (masalan, "Ish joyimda SHHV doimiy ta'minlanadi"), qulayligi ("SHHV uzoq vaqt kiyish uchun qulay"), o'qitish samaradorligi ("SHHVdan foydalanish bo'yicha yetarli o'qitildim") va qoidalarga rioya qilish ("Men har doim SHHV kiyaman") kabi savollarni o'z ichiga oldi. Har bir savol 5 ballik Likert shkalasi bo'yicha baholandi (1 - qat'iy qo'shilmayman, 5 - qat'iy qo'shilaman), bu esa xodimlarning fikrlarini miqdoriy tarzda tahlil qilishga yordam berdi [4].

Uchinchidan, sifatli ma'lumot olish uchun 10 nafar ish joyi xavfsizligi nazoratchisi bilan chuqur suhbatlar o'tkazildi. Bu suhbatlar yarim tuzilgan shaklda bo'lib, nazoratchilardan SHHVni joriy etishdagi qiyinchiliklar, xodimlarning munosabati va rahbariyatning yondashuvi haqida ochiq savollar so'raldi. Suhbatlar ovoz yozuv qurilmasi yordamida qayd etildi va keyinchalik transkripsiya qilinib, takrorlanadigan mavzular bo'yicha kodlandi. Tadqiqotda asosiy e'tibor SHHVning qo'llanilishi, xodimlarning qarashlari, rahbariyatning qo'llab-quvvatlashi va ish sharoitlarining ta'siri kabi o'zgaruvchilarga qaratildi.

So'rovnoma natijalari o'rtacha ballar, foizlar va standart og'ishlar yordamida statistik tahlil qilindi, bu esa har bir soha bo'yicha farqlarni aniq ko'rsatdi.

Suhbatlardan olingan sifatli ma'lumotlar esa miqdoriy natijalarni to'ldirib, muammolarning chuqur sabablarini tushunishga yordam berdi. Tadqiqotning chegaralari sifatida kichikroq namunaviy hajm va faqat bir shaharga e'tibor qaratilganligi qayd etildi, ammo bu usullar muammolarni keng ko'lamda o'rganish uchun mustahkam asos yaratdi.

Natijalar. Adabiyotlar tahlili SHHV foydalanishidagi uchta asosiy muammoni aniqladi: noqulaylik (70% tadqiqotlarda qayd etilgan), o'qitishning yetishmasligi (60%) va qoidalarga rioya qilmaslik (50%). Bu muammolar turli mamlakatlar va sohalarda takrorlanib, SHHVning samaradorligini pasaytiruvchi universal to'siqlar sifatida ko'rindi. Masalan, qurilish sohasida og'ir dubulg'alar va qo'lqoplar noqulaylik keltirsa, sog'liqni saqlashda niqoblarning nafas olishni qiyinlashtirishi shikoyat qilingan.

So'rovnoma natijalari bu muammolarni tasdiqladi va ularni sohalarga ko'ra farqlarni ko'rsatdi. Umumiy 150 ishtirokchidan faqat 42% (63 nafar) SHHVni uzoq vaqt kiyish qulay deb hisobladi, o'rtacha ball 2.8/5 ni tashkil etdi. Qurilish xodimlari eng past baho berdi (o'rtacha: 2.4/5), chunki og'ir jihozlar va issiq sharoitlar noqulaylikni oshirdi. Sog'liqni saqlash xodimlari biroz yuqori baho qo'ydi (o'rtacha: 3.2/5), lekin uzoq smenalarda niqob va himoya kiyimlari charchoq keltirishi ta'kidlandi. Ishlab chiqarishda esa o'rtacha ball 2.9/5 bo'ldi, bu yerda ko'pincha SHHVning noto'g'ri o'lchami shikoyat qilindi.

O'qitish bo'yicha 55% (83/150) xodimlar SHHVdan foydalanish bo'yicha yetarli ko'rsatma olganini aytdi (o'rtacha: 3.1/5). Bu yerda sog'liqni saqlash sohasi yuqori natija ko'rsatdi (o'rtacha: 3.6/5), chunki qat'iy tibbiy protokollar mavjud. Qurilishda bu ko'rsatkich pastroq edi (o'rtacha: 2.7/5), ko'pincha o'qitish rasmiyatchilik sifatida o'tkazilardi. Ishlab chiqarishda esa o'rtacha ball 3.0/5 bo'lib, xodimlarning aksariyati faqat asosiy ko'rsatmalar bilan cheklanganini bildirdi.

Qoidalarga rioya qilishda jiddiy muammolar kuzatildi – 38% (57/150) xodimlar vaqti-vaqti bilan SHHV kiyishdan bosh tortganini tan oldi (o'rtacha: 2.7/5). Qurilishda bu ko'rsatkich eng yuqori edi (48%), sababi sifatida vaqt tanqisligi, issiqlik va “xavf unchalik katta emas” degan tasavvur keltirildi. Sog'liqni saqlashda rioya qilish yuqoriroq bo'ldi (o'rtacha: 3.4/5), chunki qoidalar qat'iy nazorat qilinadi. Ishlab chiqarishda esa 35% xodimlar SHHVni kiyishni “ortiqcha” deb hisobladi.

Nazoratchilar bilan suhbatlar qo'shimcha muammolarni ochdi. 10 tadan 8 tasi byudjet cheklovlari SHHV sifatini pasaytirganini aytdi – masalan, arzon niqoblar yoki eskirgan dubulg'alar taqdim etilardi. 6 nafari xodimlarning qarshiligini ta'kidladi, bu ko'pincha madaniy odatlar (masalan, “erkak kishi dubulg'asiz ham ishlaydi” degan fikr) yoki xavfni past baholash bilan bog'liq edi. 4 nafar nazoratchi rahbariyatning yetarli qo'llab-quvvatlamasligini – masalan, o'qitishga vaqt ajratilmasligini – muammo sifatida ko'rsatdi.

Umuman, SHHVga rioya qilish past bo'lgan ish joylarida jarohatlar soni yuqori edi – yillik hisobda bunday joylarda baxtsiz hodisalar 25% ko'proq qayd etildi. Bu jarohatlar orasida kuyishlar, nafas yo'llari shikastlanishi va boshqa kasbiy zararlar bor edi. Shu bilan birga, SHHV sifati past bo'lgan joylarda ushbu ko'rsatkich yanada oshgan – masalan, yirtilgan qo'lqoplar yoki havo o'tkazmaydigan niqoblar tufayli xodimlar himoyasiz qolardi.

Muhokama. Natijalar SHHV foydalanishidagi muammolarning ko'p qirrali ekanligini ko'rsatadi – bu muammolar amaliy (texnik), xulq-atvor va tashkiliy omillardan kelib chiqadi. Noqulaylik SHHVning eng katta to'sig'i sifatida ajralib turadi, ayniqsa qurilish kabi jismoniy jihatdan og'ir sohalarda. Og'ir dubulg'alar, issiq sharoitlarda terlatadigan kiyimlar va nafas olishni qiyinlashtiradigan niqoblar xodimlarning SHHV kiyish istagini pasaytiradi [5]. Bu SHHV dizaynini yaxshilash zarurligini ko'rsatadi – masalan, engil materiallardan foydalanish, nafas oladigan matolar qo'llash va har bir xodimning jismoniy o'lchamlariga mos jihozlar taqdim etish kerak. Sog'liqni saqlashda niqoblar qulayroq bo'lsa-da, uzoq smenalarda charchoq muammo bo'lib qolmoqda, bu esa ergonomik yechimlar izlashni talab qiladi.

O'qitishning yetishmasligi yana bir muhim muammo – sog'liqni saqlashda qat'iy protokollar mavjud bo'lsa-da, qurilish va ishlab chiqarishda bu jihat zaif. Ko'pincha o'qitish rasmiyatchilik sifatida o'tkazilib, xodimlar SHHVni to'g'ri kiyish yoki undan foydalanishni o'rganmaydi [2]. Masalan, qurilishda dubulg'ani noto'g'ri bog'lash yoki niqobni noto'g'ri taqish kabi xatolar keng tarqalgan. Bu muammoni hal qilish uchun o'qitishni amaliy mashg'ulotlar bilan boyitish – masalan, simulyatsiya orqali xodimlarga SHHVning ahamiyatini ko'rsatish – samarali bo'lardi. Sog'liqni saqlashdagi muvaffaqiyatli tajribani boshqa sohalarga ham qo'llash mumkin.

Qoidalariga rioya qilmaslik xodimlarning ichki munosabati va tashqi sharoitlardan kelib chiqadi. Qurilishda vaqt tanqisligi va “xavf unchalik katta emas” degan tasavvur SHHV kiyishni “ortiqcha” qiladi. Ishlab chiqarishda esa ko'pincha SHHVning sifatsizligi (masalan, yirtilgan qo'lqoplar) xodimlarning ishonchini pasaytiradi. Sog'liqni saqlashda qoidalariga rioya yuqori bo'lsa-da, bu qat'iy nazorat va jarimalar tufayli, lekin bu usul boshqa sohalarda samara bermaydi. Buning o'rniga, ijobiy rag'batlantirish – masalan, SHHVga rioya qilgan xodimlarga bonuslar berish – yanada samarali bo'lishi mumkin [5]. Shu bilan birga, ish beruvchilar SHHV sifatini oshirishi kerak – arzon va tez eskiradigan jihozlar o'rniga bardoshli va qulay mahsulotlar taqdim etilishi lozim.

Nazoratchilarning fikrlari tashkiliy muammolarni ko'rsatdi – byudjet cheklovlari va rahbariyatning yetarli qo'llab-quvvatlamasligi SHHVning samaradorligini pasaytiradi. Masalan, agar o'qitishga vaqt ajratilmasa yoki sifatli SHHV sotib olinmasa, xodimlarning xavfsizligi xavf ostida qoladi. Madaniy qarshilik ham e'tiborga molik – “erkak kishi SHHVsiz ishlaydi” degan stereotiplar qurilishda keng

tarqalgan. Bu muammoni targhibot va xabardorlikni oshirish orqali hal qilish mumkin – masalan, SHHVning hayotni saqlashdagi ahamiyatini ko'rsatuvchi kampaniyalar tashkil qilish foydali bo'lardi.

Natijalar SHHVga rioya qilishning pastligi jarohatlar sonini oshirishini ko'rsatdi – 25% ko'proq baxtsiz hodisalar qayd etilishi bu muammolarning jiddiyligini tasdiqlaydi. Bu jarohatlar nafaqat xodimlar salomatligiga zarar yetkazadi, balki ish beruvchilarga iqtisodiy yo'qotishlar keltiradi – davolanish xarajatlari, sug'urta to'lovlari va ish vaqtining yo'qolishi kabi. SHHV sifatining pastligi bu muammoni yanada kuchaytiradi, chunki noto'g'ri jihozlar xodimlarni himoya qilish o'rniga xavfni oshiradi.

Takliflar. Ushbu tadqiqot natijalariga asoslanib, quyidagi takliflar keltiriladi:

SHHV dizaynini yaxshilash: Ish beruvchilar engil, nafas oladigan va xodimlarning jismoniy o'lchamlariga mos keladigan SHHV sotib olishga sarmoya kiritishi kerak. Masalan, qurilish uchun engil dubulg'alar va sog'liqni saqlash uchun qulay niqoblar ishlab chiqarishni rag'batlantirish lozim.

O'qitishni kuchaytirish: SHHVdan foydalanish bo'yicha doimiy va amaliy mashg'ulotlar tashkil qilinishi kerak. Har chorakda simulyatsiya o'tkazish orqali xodimlarning malakasini oshirish va xavfsizlik madaniyatini shakllantirish zarur.

Rioya qilishni rag'batlantirish: Jarima o'rniga ijobiy motivatsiya qo'llanilishi – SHHVga rioya qilgan xodimlarga bonuslar yoki qo'shimcha ta'til kunlari berilishi samarali bo'ladi.

Sifatni oshirish: Byudjetni ko'paytirib, sifatli SHHV sotib olishga e'tibor berish lozim. Arzon va tez eskiradigan jihozlar o'rniga bardoshli mahsulotlar taqdim etilishi kerak.

Targhibotni kengaytirish: Madaniy qarshilikni bartaraf etish uchun SHHVning ahamiyatini ko'rsatuvchi kampaniyalar – videoroliklar, bukletlar va mahalla yig'inlarida tushuntirish ishlari – olib borilishi lozim.

Kelajakdagi tadqiqotlar: Taklif qilingan yechimlarning samarasini sinash uchun tajribalar o'tkazilishi – masalan, ergonomik SHHVning qurilishdagi ta'siri yoki o'qitish usullarining solishtirilishi – tavsiya etiladi.

Xulosa

Ish joyida shaxsiy himoya vositalari xavfsizlikning asosiy elementi bo'lib xizmat qilsa-da, uning samarali foydalanishi noqulaylik, o'qitishning yetishmasligi, qoidalarga rioya qilmaslik, sifat muammolari va tashkiliy to'siqlar kabi jiddiy muammolarga duch kelmoqda. Ushbu tadqiqot ushbu muammolarni aniqlab, ularning mehnat xavfsizligiga ta'sirini ko'rsatdi – rioya qilishning pastligi jarohatlar sonini oshirib, iqtisodiy va ijtimoiy yo'qotishlarga olib keladi. Muhokama SHHVning dizayni, o'qitish, madaniyat va rahbariyat qo'llab-quvvatlashidagi kamchiliklarni bartaraf etish uchun amaliy takliflar berdi. Bu muammolarni hal qilish jihozlarni

yaxshilash, ta'limni kuchaytirish, ijobiy rag'batlantirish va targhibotni birlashtirgan keng yondashuvni talab qiladi. Faqat shu yo'l bilan xodimlarning hayoti va salomatligi ishonchli himoyalanaadi, ish joylari esa xavfsiz va samarali muhitga aylanadi.

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MEHNAT XAVFSIZLIGI SOHASIDAGI GLOBAL MUAMMOLAR

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Zamonaviy sanoatning jadal rivojlanishi va texnologik jarayonlarning murakkablashishi mehnat xavfsizligini ta'minlashda yangi yondashuvlarni talab qilmoqda. An'anaviy usullar, ya'ni asosan inson omiliga tayanadigan xavfsizlik choralari, xavflarni oldindan aniqlash va ularga tezkor javob berishda yetarli samara bera olmayapti. Shu sababli, sanoat korxonalarida xavfsizlik tizimlarini avtomatlashtirish bugungi kunda texnik xavfsizlikni ta'minlashning eng muhim yo'nalishlaridan biriga aylandi. Avtomatlashtirish real vaqtda monitoring, xavfli vaziyatlarni erta aniqlash va baxtsiz hodisalar xavfini minimallashtirish imkonini beradi. Ushbu tadqiqot sanoat korxonalarida xavfsizlik tizimlarini avtomatlashtirishning amaliy samaradorligini baholashga qaratildi. Tadqiqotning asosiy maqsadi avtomatlashtirilgan xavfsizlik tizimlarining mehnat xavfsizligi, ishlab chiqarish samaradorligi va iqtisodiy ko'rsatkichlarga ta'sirini tahlil qilish, shuningdek, ushbu texnologiyalarning afzalliklari va cheklovlarini aniqlashdir. Sanoat jarayonlarida xavfsizlikni avtomatlashtirish nafaqat ishchilar salomatligini himoya qilish, balki ishlab chiqarishning uzluksizligini ta'minlash va iqtisodiy samaradorlikni oshirishda ham muhim ahamiyatga ega [1]. Shu sababli, ushbu sohada ilmiy tadqiqotlar o'tkazish va istiqbolli rivojlanish yo'nalishlarini belgilash dolzarb vazifadir. Maqola avtomatlashtirilgan xavfsizlik tizimlarining sanoat korxonalaridagi samaradorligini tahlil qiladi va ularning amaliy natijalarini baholaydi.

Tadqiqot metodologiyasi. Tadqiqotda sanoat korxonalarida xavfsizlik tizimlarini avtomatlashtirishning samaradorligini baholash uchun tizimli va tahliliy yondashuv qo'llanildi. Tadqiqot jarayonida sifat va miqdoriy tahlil usullari birgalikda ishlatildi. Sifat tahlili avtomatlashtirilgan xavfsizlik tizimlarining texnologik jihatlari, ularning joriy etilish darajasi va eng yaxshi tajribalarni aniqlashga qaratildi. Miqdoriy tahlilda esa ish joyidagi baxtsiz hodisalar statistikasi, xavfli vaziyatlarning kamayishi va mehnat unumdorligining oshishi bo'yicha aniq raqamli ma'lumotlar tahlil qilindi. Tadqiqot ob'ektlari sifatida turli sanoat tarmoqlari tanlandi: og'ir sanoat (metallurgiya, mashinasozlik, kimyo ishlab chiqarish), energetika (elektr stansiyalari, neft va gaz qazib olish), oziq-ovqat va yengil sanoat, farmatsevtika va qurilish materiallari ishlab chiqarish korxonalari. Ushbu sohalarda avtomatlashtirilgan xavfsizlik tizimlari, jumladan, real vaqtda monitoring tizimlari, sun'iy intellekt va ma'lumotlarni tahlil

qilish algoritmlari, avtomatlashtirilgan ogohlantirish va javob tizimlari, robotlashtirilgan xavfsizlik yechimlari hamda IT texnologiyalari o'rganildi. Tadqiqotda so'nggi uch yil davomida avtomatlashtirilgan xavfsizlik tizimlari joriy etilgan korxonalar bo'yicha statistik ma'lumotlar tahlil qilindi.

Ma'lumot manbalari sifatida sanoat korxonalarining xavfsizlik bo'yicha hisobotlari, real vaqtda monitoring ma'lumotlari, ISO 45001:2018 va OHSAS 18001 xalqaro standartlari, O'zbekiston Respublikasining mehnat muhofazasi qonunchiligi va ilg'or texnologik yondashuvlar tahlili ishlatildi [2]. Ishchilarning avtomatlashtirilgan tizimlarga munosabati ham o'rganilib, ularning 75-85% ushbu tizimlarga ishonch bildirishi aniqlandi.

Tadqiqot natijalari. Tadqiqot natijalari shuni ko'rsatdiki, avtomatlashtirilgan xavfsizlik tizimlari sanoat korxonalarida mehnat xavfsizligini sezilarli darajada yaxshilaydi. 15 ta yirik korxonada o'tkazilgan tahlilga ko'ra, avtomatlashtirish ish joyidagi baxtsiz hodisalarni o'rtacha 42% ga kamaytirdi. Xususan, yong'in va portlash xavfi bilan bog'liq hodisalar 55% ga pasaydi, bu avtomatlashtirilgan tizimlarning favqulodda vaziyatlarga tezkor javob berish qobiliyatini ko'rsatdi. Real vaqtda monitoring va erta aniqlash tufayli favqulodda javob tizimlarining samaradorligi 60% ga oshdi, ogohlantirishlar esa qo'lda boshqaruvga nisbatan 4 baravar tezroq amalga oshirildi. Ishlab chiqarish samaradorligi nuqtai nazaridan, avtomatlashtirish rejalashtirilmagan to'xtashlarni 22% ga kamaytirdi va umumiy samaradorlikni 17% ga oshirdi. Texnik xizmat xarajatlari 28% ga qisqardi, uskunalar nosozligi ehtimoli esa 35% ga pasaydi. Inson omilidan kelib chiqadigan xatolar 45% ga kamaydi, ishchilarning xavfsizlik qoidalariga rioya qilishi 67% dan 89% ga ko'tarildi. Ishchilarning xavfsizlik texnologiyalariga ishonchi 81% ni tashkil etdi. Iqtisodiy jihatdan, avtomatlashtirish sanoat samaradorligini 15-20% ga oshirdi. Ishdan chetlanish 38% ga, ish qobiliyatini yo'qotish 50% ga kamaydi, uskunalar almashish xarajatlari esa 25% ga qisqardi. Korxonalar xalqaro standartlarga (ISO 45001:2018, OHSAS 18001) muvofiqligi 70% dan 92% ga oshdi, bu global raqobatbardoshlikni mustahkamladi [3].

Muhokama. Avtomatlashtirilgan xavfsizlik tizimlari ish joyidagi xavfsizlikni oshirishda muhim yutuqlarni ta'minlasa-da, ba'zi cheklovlar mavjud. Dastlabki investitsiyalar yuqori bo'lib, kichik korxonalar uchun qiyinchilik tug'diradi. Tizimlarning uzluksiz ishlashi uchun muntazam texnik xizmat va malakali mutaxassislar talab qilinadi. Ishchilarning yangi texnologiyalarga moslashishi uchun treninglar zarur. Rivojlanayotgan mamlakatlarda qonunchilikni mustahkamlash, kasb kasalliklarining oldini olish va norasmiy sektorga xavfsizlikni kengaytirish kabi masalalar ham dolzarbdur. Texnologiyalarni rivojlantirish va arzon yechimlar ishlab chiqish global xavfsizlik standartlarini yaxshilashga xizmat qiladi.

Xulosa va tavsiyalar

Tadqiqot xavfsizlik tizimlarini avtomatlashtirishning sanoat korxonalarida mehnat xavfsizligini oshirishdagi samaradorligini tasdiqladi. Baxtsiz hodisalar 42% ga kamaydi, ishlab chiqarish samaradorligi 17% ga, iqtisodiy foyda 15-20% ga oshdi. Avtomatlashtirish inson xatolarini 45% ga qisqartirib, real vaqtda monitoring va tezkor javob imkonini berdi. Ammo, yuqori investitsiyalar va texnik xizmat talablari kabi cheklovlar mavjud. Kelajakda sun'iy intellekt, IT va texnikaviy o'qitishni integratsiyalash, ishchilar uchun treninglar tashkil etish tavsiya etiladi. Sanoat korxonalari avtomatlashtirishni kengaytirib, xalqaro standartlarga moslashishi va xavfsizlikni optimallashtirish uchun investitsiyalarni oshirishi zarur.

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“VIRTUAL MASHINALARNING REAL SOHALARDA QO‘LLANILISHI” (TA’LIM, SERVERLAR, TESTLASH VA BOSHQALAR)

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ANNOTATSIYA

Ushbu maqolada virtual mashinalarning ta’lim, server boshqaruvi, dasturiy ta’minotni testlash va bulutli hisoblash sohalarida amaliy qo‘llanilishi tahlil qilinadi. Virtualizatsiya texnologiyalarining infratuzilmalarni optimallashtirish, xavfsizlikni oshirish va ishlab chiqish jarayonlarini avtomatlashtirishdagi roli o‘rganiladi. Shuningdek, maqolada virtual mashinalarning zamonaviy boshqaruv usullari, xavfsizlik masalalari hamda konteyner texnologiyalari bilan integratsiyasi ko‘rib chiqiladi. Tadqiqot natijalari virtual mashinalarning IT sohasidagi samaradorligini oshirish va kelajakdagi rivojlanish yo‘nalishlarini belgilashga yordam beradi.

Kalit so‘zlar: virtual mashinalar, virtualizatsiya, ta’lim, server boshqaruvi, dasturiy ta’minot testlash, bulutli hisoblash, xavfsizlik, resurslarni boshqarish, konteyner texnologiyalari, avtomatlashtirish, IT infratuzilma, masofaviy ta’lim, dasturiy muhit, tizim izolatsiyasi, virtual laboratoriya

ABSTRACT

This article analyzes the practical application of virtual machines in the fields of education, server management, software testing, and cloud computing. The role of virtualization technologies in optimizing infrastructure, increasing security, and automating development processes is studied. The article also considers modern management methods, security issues, and integration of virtual machines with container technologies. The results of the study will help to increase the efficiency of virtual machines in the IT sector and determine future development directions.

Keywords: virtual machines, virtualization, education, server management, software testing, cloud computing, security, resource management, container technologies, automation, IT infrastructure, distance learning, software environment, system isolation, virtual laboratory

АННОТАЦИЯ

В данной статье анализируется практическое применение виртуальных машин в сферах образования, управления серверами, тестирования ПО и

облачных вычислений. Изучается роль технологий виртуализации в оптимизации инфраструктуры, повышении безопасности и автоматизации процессов разработки. В статье также рассматриваются современные методы управления, вопросы безопасности и интеграция виртуальных машин с контейнерными технологиями. Результаты исследования помогут повысить эффективность виртуальных машин в сфере ИТ и определить будущие направления развития.

Ключевые слова: виртуальные машины, виртуализация, образование, управление серверами, тестирование ПО, облачные вычисления, безопасность, управление ресурсами, контейнерные технологии, автоматизация, ИТ-инфраструктура, дистанционное обучение, программная среда, изоляция системы, виртуальная лаборатория

Kirish

So‘nggi yillarda virtualizatsiya texnologiyalari axborot texnologiyalari sohasida inqilobiy o‘zgarishlarni yuzaga keltirmoqda. Virtual mashinalar (VM) fiziki apparat resurslarini samarali boshqarish va ulardan ko‘p qirrali foydalanish imkonini beradi. Ushbu texnologiya serverlarda, bulutli infratuzilmalarda, dasturiy ta‘minotni testlash va ta‘lim jarayonlarida keng qo‘llanilmoqda. Virtual mashinalarning afzalliklari — mustaqil ish muhitini yaratish, tizim resurslarini optimallashtirish, xavfsizlikni oshirish va ish jarayonlarini avtomatlashtirishda namoyon bo‘ladi. Shuningdek, global IT infratuzilmasining raqamli transformatsiyasi va masofadan ishlash tizimlarining kengayishi VM texnologiyalarining ahamiyatini yanada oshirdi. Ushbu maqolaning maqsadi — virtual mashinalarning real sohalardagi amaliy qo‘llanilish tarmoqlarini tahlil qilish, ularning samaradorligi va istiqbollarini aniqlash.

Virtual mashinalar (VM) zamonaviy IT infratuzilmasining asosiy qismi bo‘lib, turli sohalarda keng qo‘llanilmoqda. Ular bir fizik server ustida bir nechta mustaqil operatsion tizimlarni ishga tushirish imkonini beradi.

Ta‘lim sohasida bu virtual mashinalar ta‘lim jarayonini xavfsiz va samarali qilish uchun muhim vosita hisoblanadi. Talabalar turli operatsion tizimlar, dasturlash muhitlari va ilovalarni o‘z kompyuterlariga zarar yetkazmasdan sinab ko‘rishlari mumkin. Masalan, Linux distributivlarini o‘rganish, cybersecurity mashqlari o‘tkazish yoki malware tahlili kabi xavfli vazifalarni bajarish uchun alohida muhit yaratiladi. Shuningdek, laboratoriya mashg‘ulotlari uchun bir xil muhitni barcha talabalarga taqdim etish mumkin.

Server infratuzilmasida esa serverlar sohasida VM-lar resurs samaradorligini oshirish uchun keng qo‘llaniladi. Bir fizik server bir nechta virtual serverlarga bo‘linib, har biri alohida vazifalarni bajarishi mumkin - web server, ma‘lumotlar bazasi serveri, elektron pochta serveri kabi. Bu yondashuv apparat resurslaridan maksimal

foydalanish, xarajatlarni kamaytirish va boshqarishni soddalashtirish imkonini beradi.

Dasturiy ta'minot testlashida testlash jarayonida VM-lar ayniqsa foydali, chunki ular turli muhitlarda dasturlarni sinash imkonini beradi. Dasturchilar o'z ilovalarini Windows, Linux, macOS kabi turli operatsion tizimlarda, turli versiyalarda va konfiguratsiyalarda test qilishlari mumkin. Snapshot funksiyasi orqali test paytida muammolar yuzaga kelsa, tizimni oldingi holatga qaytarish oson.

Cloud computing va virtualizatsiya jarayonida zamonaviy cloud provayderlar (AWS, Azure, Google Cloud) o'z xizmatlarini asosan virtual mashinalar asosida taqdim etadilar. Bu foydalanuvchilarga kerakli resurs miqdorini tanlash, miqyosni o'zgartirish va faqat foydalanilgan resurslar uchun to'lash imkonini beradi.

Xavfsizlik va izolatsiya bu kibermuhofaza mutaxassislari xavfli fayllarni tahlil qilish, zararli dasturlarni o'rganish va penetration testing o'tkazish uchun alohida VM-lar yaratdilar. Bu asosiy tizimga zarar yetishining oldini oladi va xavfsiz tadqiqot muhitini ta'minlaydi.

Legacy tizimlar uchun qo'llab-quvvatlashda esa ko'plab tashkilotlar eski, ammo muhim dasturlarni ishlatishni davom ettiradilar. VM-lar eski operatsion tizimlarni zamonaviy apparat ustida ishga tushirish imkonini beradi, bu esa bosqichma-bosqich yangilash jarayonini osonlashtiradi.

Virtual mashinalar texnologiyasi IT sohasida inqilob yaratgan bo'lib, resurs samaradorligi, moslashuvchanlik va xavfsizlikni ta'minlashda muhim rol o'ynaydi. Ular kelajakda ham yanada rivojlanib, cloud computing va edge computing kabi yangi texnologiyalar bilan birgalikda qo'llanilishda davom etadi.

Usullar

Tadqiqot usuli sifatida tizimli adabiyotlar sharhi, soha mutaxassislari bilan suhbatlar va mavjud IT infratuzilmalardagi VM texnologiyalarining amaliy ko'rinishlari o'rganildi. Ta'lim, server boshqaruvi, dasturiy ta'minot testlash, xavfsizlik va bulutli xizmatlar sohalaridagi VM qo'llanilishi holatlari tahlil qilindi. Ma'lumotlar yig'ishda ilmiy maqolalar, sanoat hisobotlari va texnologik kompaniyalarning taqdimotlari asos qilib olindi. Shuningdek, virtual mashinalarning samaradorligini baholash uchun bir nechta real tizimlardan olingan statistik ko'rsatkichlar ham tahlil qilindi. Tadqiqotda VM texnologiyalari bilan bog'liq xavfsizlik, ishlash samaradorligi va boshqaruv masalalari ham o'rganildi.

Natijalar

Tadqiqot natijalari shuni ko'rsatdiki, virtual mashinalar ta'lim sohasida o'quv muhitini simulyatsiya qilish, dasturiy ta'minotni mustaqil muhitda sinovdan o'tkazish va interaktiv laboratoriyalarni yaratishda keng qo'llanilmoqda. Ushbu yondashuv o'quv jarayonining sifatini oshirishga va xarajatlarni kamaytirishga yordam beradi. Server infratuzilmasida VM texnologiyalari fiziki serverlarni bir nechta virtual muhitinga bo'lish orqali resurslardan samarali foydalanish imkonini yaratadi, bu esa

energiya va xarajatlarni tejashga olib keladi. Testlash jarayonida VM yordamida turli operatsion tizimlar va dasturlarni xavfsiz va mustaqil muhitda sinash mumkin, bu dasturiy ta'minot sifatini oshiradi va ishlab chiqarishdagi xatolar sonini kamaytiradi. Bulutli hisoblash xizmatlarida VM texnologiyalari elastiklik, ko'lamlanish va ishonchlilikni ta'minlaydi. Biroq, xavfsizlik va resurslar boshqaruvi sohalarida hali ham qator muammolar mavjudligi aniqlangan.

Munozara

Natijalar shuni ko'rsatadiki, virtual mashinalarning qo'llanilishi axborot texnologiyalari tizimlarini yanada samarali va moslashuvchan qiladi. Ta'limda VM texnologiyalarining integratsiyasi o'quv jarayonlarini raqamlashtirishda muhim omil hisoblanadi, ayniqsa masofaviy ta'lim sharoitida. Server infratuzilmasidagi VM foydalanilishi esa IT xarajatlarini kamaytirish va xizmatlarni tezroq sozlash imkonini yaratadi. Testlash va dasturiy ta'minotni ishlab chiqish jarayonida VM mustaqil muhitni ta'minlab, xatoliklarni kamaytiradi va ishlab chiqish jarayonini tezlashtiradi. Shu bilan birga, xavfsizlik masalalari — VM muhiti izolatsiyasining buzilishi va resurslarni noto'g'ri taqsimlash xavfi hali ham dolzarbdir. Kelgusida VM boshqaruv vositalarining avtomatlashtirilishi va xavfsizlik protokollarining takomillashuvi ushbu muammolarni kamaytirishga yordam beradi. Bundan tashqari, konteyner texnologiyalari bilan VM integratsiyasi sohaning rivojlanishida yangi bosqich ochishi mumkin.

Bozor tahlili va raqamli ko'rsatkichlar

Global bozor o'sishi

2024-2025 yillardagi tadqiqotlarga ko'ra, virtual mashina bozori ajoyib o'sish sur'atlarini ko'rsatmoqda:

Joriy bozor hajmi: 2024-yilda \$11.11 milliard

Prognoz: 2029-yilgacha \$43.26 milliard kutilmoqda

O'sish sur'ati: yillik 14.71-15.9% CAGR

Eng yuqori prognoz: Ba'zi tadqiqotlarga ko'ra, 2032-yilgacha \$171.23 milliard

So'nggi tadqiqotlar quyidagi omillarni bozor o'sishining asosiy sabablari sifatida ko'rsatmoqda:

1. Masofaviy ish rejimining kengayishi - COVID-19 pandemiyasidan keyin masofaviy ish kultur bo'lib qoldi
2. Cloud xizmatlariga o'tish - raqamli transformatsiya jarayonlari tezlashmoqda
3. AI va mashinasozlik o'quvi rivojlanishi - yangi texnologiyalar virtualizatsiyaga talab yaratmoqda
4. Xavfsizlik talablarining oshishi - izolatsiya va xavfsizlik muhitlari talab qilinmoqda

Zamonaviy tadqiqot yo'nalishlari

1. Edge Computing bilan Integratsiya

2024-yilgi tadqiqotlar Edge Computing bilan virtual mashinalar o'rtasidagi kuchli bog'lanishni ko'rsatmoqda:

Edge computing xarajatlari: 2024-yilda \$232 milliard kutilmoqda (15.4% o'sish)

AI ilovalar: Edge muhitida AI ishlaydigan dasturlar uchun VM-lar muhim rol o'ynamoqda

Kubernetes Edge-da: 49% kompaniyalar Kubernetes-ni edge muhitida sinab ko'rmoqda yoki faol ishlatmoqda

2. Kubernetes va Konteynerizatsiya

Zamonaviy tadqiqotlar VM va konteyner texnologiyalarining konvergensiyasini ko'rsatmoqda:

Gibrid yondashuv: 85% kompaniyalar VM workload-larini Kubernetes-ga ko'chirmoqda

Yagona platforma: 86% kompaniyalar konteyner va VM workload-larini bitta platformada birlashtirmoqni xohlaydi

AI Edge-da: 73% edge Kubernetes foydalanuvchilari AI workload-larini joylashtirishmoqda

3. VMware va Broadcom ta'siri

Broadcom tomonidan VMware-ni sotib olish bozorga sezilarli ta'sir ko'rsatmoqda:

Tezlashtiruvchi omil: 59% kompaniyalar ushbu sotib olish cloud-native texnologiyalarni qabul qilishni tezlashtirdi deb hisoblaydi

Migratsiya jarayonlari: Ko'plab tashkilotlar muqobil yechimlarni qidirmoqda

Innovatsiyalar: VMware Edge Compute Stack mahsulotlari yangilanmoqda

Texnologik innovatsiyalar

1. Hypervisor Texnologiyalari

Zamonaviy tadqiqotlarda hypervisor turlari bo'yicha quyidagi tendentsiyalar kuzatilmoqda:

Type 1 (Bare-metal) hypervisorlar: Enterprise muhitlarda ustunlik qilmoqda

Type 2 (Hosted) hypervisorlar: Rivojlanish va test muhitlari uchun mos

Mikrokernel arxitekturasini: Xavfsizlik va performance uchun yangi yondashuvlar

2. Xavfsizlik va Izolatsiya

Kibermuhofaza sohasidagi so'nggi tadqiqotlar quyidagilarni ta'kidlaydi:

Zero Trust arxitekturasini: VM-lar Zero Trust modelining muhim qismi

Mikrosegmentatsiya: Tarmoq xavfsizligi uchun VM-larda mikrosegmentatsiya

Threat Detection: AI-powered xavflarni aniqlash tizimlari

3. Performance optimizatsiyasi

So'nggi tadqiqotlar performance oshirish yo'nalishlarini ko'rsatmoqda:

GPU virtualizatsiyasi: AI va machine learning workload-lari uchun

NVMe va high-speed storage: Disk I/O bottlenecklarini hal qilish
 Network Function Virtualization (NFV): Tarmoq xizmatlarini virtualizatsiya qilish

Regional tahlil

Geografik taqsimot

2024-yilgi tadqiqotlarga ko'ra bozorning regional taqsimoti:

Shimoliy Amerika: Eng katta bozor (36.4% ulush)

Osiyo-Tinch okeani: Eng tez o'suvchi mintaq

Yevropa: Barqaror o'sish ko'rsatmoqda

Rivojlanayotgan bozorlar: Yangi imkoniyatlar yaratmoqda

Sektor bo'yicha taqsimot

IT va Telekommunikatsiya: 36.4% bozor ulushi

Moliya sektori: Yuqori xavfsizlik talablari tufayli o'sib bormoqda

Ta'lim: Remote learning tufayli kengaymoqda

Sog'liqni saqlash: Telemedicine va ma'lumotlar xavfsizligi uchun

Kelajak prognozlari va tendentsiyalar

2025-2030 Istiqbollari

Tadqiqot natijalari asosida quyidagi tendentsiyalar kutilmoqda:

1. Quantum Computing Integratsiyasi

Kvant hisoblash VM-lar bilan birgalikda rivojlanadi

Gibrid kvant-klassik arxitekturalar paydo bo'ladi

2. 6G va Ultra-Low Latency

6G texnologiyasi bilan edge VM-lar yangi darajaga chiqadi

Real-time applications uchun optimizatsiya

3. Sustainable Computing

Energiya samaradorligi asosiy prioritet bo'ladi

Green virtualization yondashuvlari rivojlanadi

4. AI-Native Virtualization

Sun'iy intellekt VM boshqaruviga chuqur integratsiya qilinadi

Avtomatik resurs optimallashtirish va prognozlash

Yangi tadqiqot yo'nalishlari

1. WebAssembly (WASM) Virtualizatsiyesi

Brauzer va server muhitlari uchun yangi virtualizatsiya modeli

Mikroservislar uchun yengil alternativa

2. Confidential Computing

Ma'lumotlarni ishlov berish paytida himoya qilish

Hardware-level enkriptsiya va izolatsiya

3. Serverless VM Arxitekturalari

Function-as-a-Service modelini VM bilan birlashtirish

Event-driven virtualizatsiya

Asosiy xulosalar

1. Tez o'sish: VM bozori keyingi o'n yil davomida eksponentsial o'sishni davom ettiradi
2. Gibridizatsiya: Konteyner va VM texnologiyalari birlashib bormoqda
3. Edge dominantligi: Edge computing VM-lar uchun yangi imkoniyatlar yaratmoqda
4. AI integratsiyasi: Sun'iy intellekt VM boshqaruvini tubdan o'zgartirmoqda

Tadqiqotchilar uchun tavsiyalar

1. Interdistsiplinar yondashuv: VM tadqiqotlari AI, edge computing va cybersecurity bilan birgalikda olib borilishi kerak
 2. Amaliy yo'nalish: Sanoat ehtiyojlariga mos tadqiqotlarga e'tibor berish
 3. Xalqaro hamkorlik: Global trendlarni hisobga olgan holda tadqiqot olib borish
 4. Open Source ishtirok: Ochiq kodli loyihalarda faol ishtirok etish
- Sanoat uchun strategik tavsiyalar
1. Investitsiya rejalash: VM texnologiyalariga uzoq muddatli investitsiyalar
 2. Kadrlar tayyorlash: Yangi texnologiyalarga mos mutaxassislar tayyorlash
 3. Standartlashtirish: Sanoat standartlarini rivojlantirish va qo'llash
 4. Innovatsiya ekotizimi: Startaplar va tadqiqot markazlari bilan hamkorlik

Ilmiy ishning yangiligi

Ushbu ilmiy ishda virtual mashinalarning an'anaviy qo'llanilish doiralaridan tashqari, so'nggi yillarda ta'lim jarayonlarida virtual laboratoriyalar yaratish, interaktiv o'quv muhitlarini tashkil etish va masofaviy ta'lim tizimlarida VM texnologiyalarining samarali integratsiyasi yangi yondashuvlar asosida tahlil qilindi. Server infratuzilmasida virtual mashinalar resurslardan yanada optimallashtirilgan foydalanish imkonini beruvchi yangi boshqaruv algoritmlari va avtomatlashtirilgan tizimlar yordamida qo'llanilishi ilmiy asosda o'rganildi. Bundan tashqari, dasturiy ta'minotni testlashda VM asosidagi ko'p platformali va izolyatsiyalangan muhitlarning xavfsizlik hamda samaradorlik nuqtai nazaridan tahlili olib borildi. Tadqiqotda shuningdek, virtual mashinalar va konteyner texnologiyalarining uyg'unlashuvi, bulutli hisoblash tizimlarida yangi model va yondashuvlarning qo'llanilishi kabi zamonaviy innovatsiyalar kiritilgan. Shu tariqa, ish virtual mashinalarning real sohalardagi qo'llanilishi bo'yicha nazariy va amaliy jihatdan yangi ilmiy ma'lumotlar taqdim etadi hamda sohadagi rivojlanish istiqbollari belgilaydi.

Xulosa

Xulosa qilib aytganda, virtual mashinalar real dunyo IT infratuzilmasida keng va samarali qo'llanilmoqda. Ta'lim, serverlar boshqaruvi, testlash va bulutli xizmatlarda

VM texnologiyalari tizimlarni yanada moslashuvchan, xavfsiz va iqtisodiy jihatdan samarali qiladi. Ushbu texnologiyalar IT sohasining raqamli transformatsiyasida markaziy rol o'ynaydi. Biroq, xavfsizlik va boshqaruv masalalarida davom etayotgan izlanishlar ushbu texnologiyalarni yanada rivojlantirish uchun zarurdir. Kelajakda VM va konteyner texnologiyalarining uyg'un ishlashi yangi imkoniyatlar ochadi va IT infratuzilmalarning yanada optimallashtirilishiga xizmat qiladi.

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TERRORIZM VA EKSTREMIZMNI OLDINI OLISHDA YOSHLARNING HUQUQIY ONGINI OSHIRISH

Xidirov Furqat Shukurullayevich

Annotatsiya: ekstremizm va terrorizm bilan bogʻliq jinoyatlar transmilliy va transchegaraviy xususiyat kasb etib, ijtimoiy xavflilik darajasi, jahon miqyosida yuzaga kelayotgan xavf-xatar va tahdidlar, tinchlik va xavfsizlikni taʼminlashda davlat organlarining vazifalari.

Abstract: Crimes related to extremism and terrorism have acquired a transnational and cross-border nature, increasing the level of social danger, emerging global dangers and threats, and the responsibilities of state bodies in ensuring peace and security.

Аннотация: Преступления, связанные с экстремизмом и терроризмом, приобрели транснациональный и трансграничный характер, что обусловило повышение уровня общественной опасности, возникновение глобальных опасностей и угроз, а также ответственности государственных органов за обеспечение мира и безопасности.

Dunyoda soʻngi yillarda ekstremizm va terrorizm bilan bogʻliq jinoyatlar transmilliy va transchegaraviy xususiyat kasb etib, ijtimoiy xavflilik darajasi keskin oshib bormoqda. Xususan, 2018–2024-yillarda dunyoning 100 dan ziyod mamlakat hududida 5 mingdan ortiq terroristik harakatlar sodir etilib, ularning oqibatida 30 mingdan koʻproq inson halok boʻlgan yoki jarohatlangan¹. Terrorizmga qarshi kurashish borasida dunyoda keng koʻlamli chora-tadbirlar amalga oshirilayotgan boʻlsada, mazkur turdagi jinoyatlar miqdori kamaymayapti. Bugungi kunda terrorizm umumbashariy halqaro muammoga aylandi. Shu sababli terrorizm bilan bogʻliq jinoyatlarga qarshi kurashishning jinoyat-huquqiy va kriminologik usul va asoslarini takomillashtirishga ehtiyoj ortib bormoqda hamda ularni yanada takomillashtirish dolzarb hisoblanadi.

Dunyo miqyosida siyosiy, iqtisodiy va ijtimoiy jarayonlar boʻyicha tadqiqot olib boruvchi Iqtisod va tinchlik xalqaro institutining terrorizmning global indeksi boʻyicha bergan maʼlumotlariga koʻra, Afgʻoniston, Iroq, Somali, Burkina-Faso, Suriya, Nigeriya, Mali, Niger va Pokiston davlatlarida terrorizm xavfi yuqori hisoblanadi. Oxirgi oʻn yillikda terrorchilik harakatlari oqibatida yuzaga kelgan oʻlim holati 182 ming nafarni tashkil etganligi bu illatning shaxs, jamiyat, davlat va insoniyat uchun qanchalik xavfli ekanligini koʻrsatmoqda².

Bugungi kunda jahon miqyosida yuzaga kelayotgan xavf-xatar va tahdidlar, avvalo, xalqaro terrorizm, diniy ekstremizm, noqonuniy migratsiya, odam savdosi, yoshlar oʻrtasida xalqimizga yot gʻoyalar tarqalishining tobora kuchayib

¹ Соунтри Репорте он Терроризм 2024– Доклад Государственного департамента США о проблемах борьбы с терроризмом в мире // www.state.gov – официальный веб-сайт Государственного департамента США.

² https://t.me/manaviyat_va_marifat_darsi

borayotganligi ichki ishlar organlari oldiga o'z vaqtida ushbu tahdidlarni oldini olish va ularga barham berish bo'yicha yangi vazifalarni qo'yimoqda³.

Tinchlik va xavfsizlikni ta'minlashda yoshlarning huquqiy madaniyatini yuksaltirish, huquqiy savodxonligini oshirish masalasi davlat hokimiyati va huquq-tartibot organlari oldida turgan dolzarb masalalardan biri bo'lib qolmoqda.

Yaqin qo'shni va uzoq mamlakatlarda sodir bo'layotgan ichki noroziliklar va siyosiy inqirozlar tahlili aholining huquqiy madaniyati darajasini yuksaltirishda fuqarolik jamiyati institutlari va huquqni muhofaza qiluvchi organlar o'rtasida ishonchli hamkorlikning yo'qligini ko'rsatmoqda. Bu holatlar aholi bilan bevosita ishlaydigan ichki ishlar organlarining jamiyatda huquqiy madaniyatni yuksaltirish faoliyatiga oid masalalarni ilmiy-nazariy jihatdan tadqiq etishni hamda globallashtirish davrida ushbu faoliyatni takomillashtirib borishni talab etmoqda.

So'nggi yillarda mamlakatimizda yoshlarning huquqiy ongi va jamiyat huquqiy madaniyatini yuksaltirish davlat siyosati darajasiga ko'tarilib, bu borada qator qonunchilik hujjatlari qabul qilindi hamda ushbu yo'nalishdagi islohotlar jamiyat hayotiga keng tatbiq etib kelinmoqda.

Xususan, "Jamiyatda huquqiy madaniyatni rivojlantirish" milliy dasturi doirasida jamiyatning barcha sohalarida huquqiy savodxonlikni oshirish, huquqiy ta'lim va tarbiyani kuchaytirish, yuridik mutaxassislarni tayyorlash, fuqarolarning huquq va erkinliklari, qonuniy manfaatlarini ro'yobga chiqarish, davlat va jamiyat hayotini adolat mezonlari asosida boshqarishda ijobiy natijalarga erishildi.

Shuningdek, O'zbekiston Respublikasi Prezidentining 2019-yil 9-yanvardagi PF-5618-son "Jamiyatda huquqiy ong va huquqiy madaniyatni yanada yuksaltirish bo'yicha chora tadbirlari to'g'risida"gi Farmonining qabul qilinishi ushbu yo'nalishdagi ishlar samaradorligini oshirishda muhim rol o'ynamoqda. Ushbu Farmon bilan tasdiqlangan Jamiyatda huquqiy madaniyatni yuksaltirish konsepsiyasida yosh avlodning huquqiy ongi va huquqiy madaniyatini yuksaltirish bo'yicha ta'lim muassasalarining huquqni muhofaza qiluvchi organlar bilan hamkorlik qilishining samarali mexanizmlarini kengaytirish, jamiyat hayotida muhim o'rin tutuvchi fuqarolik jamiyati institutlari, davlat va nodavlat tashkilotlariga huquqiy madaniyatni yuksaltirish borasida amalga oshirilishi lozim bo'lgan vazifalar belgilab berildi⁴.

Biroq, ushbu yo'nalishdagi ishlar tahlil qilinganda, jamiyat huquqiy madaniyatini

³ O'zbekiston Respublikasi Prezidentining O'zbekiston Respublikasi Qurolli Kuchlari tashkil etilganligining 26 yilligiga hamda Vatan himoyachilari kuni munosabati bilan bayram tabrigi. // Halq so'zi -2018 yil 13 yanvar

⁴ O'zbekiston Respublikasi Prezidentining 2019-yil 9-yanvardagi PF-5618-son "Jamiyatda huquqiy ong va huquqiy madaniyatni yanada yuksaltirish bo'yicha chora tadbirlari to'g'risida"gi Farmoni // URL <http://www.lex.uz>

rivojlantirish faqatgina huquqni muxofaza qiluvchi organlarning ishi sifatida ko'rilayotganligi, oila, mahalla, ta'lim muassasalari, korxona va tashkilotlar, shuningdek fuqarolik jamiyati institutlari tomonidan yoshlarning vatanparvarligini oshirish orqali huquqiy madaniyatini yuksaltirish borasida ishlar tizimli amalga oshirilmayotganligidan dalolat bermoqda.

Jahon miqyosida davlat va jamiyat hayotida ro'y berayotgan turfa xil inqirozlar, ekstremizm va terorizm xususan jinoyatchilikning turli xil shakl va usullarda amalga oshirilayotganligi to'g'risidagi daliliy ma'lumotlar tahlili huquqiy ta'lim-tarbiya, huquqiy madaniyatni va **vatanparvarligini** yuksaltirishga oid tizimni isloh qilish, ekstremizm va terrorizmga qarshi kurashishda aholining huquqiy savodxonligini oshirishning zamonaviy va yanada samarali mexanizmini ishlab chiqish zarurati mavjudligidan dalolat beradi. Shu bois, jazolovchi ta'sir choralari kuchaytirish ko'magida jinoyatchilikka qarshi kurashish emas, balki fuqarolarning huquqiy ongi va madaniyatini zamonga mos holda shakllantirib borish, ularda huquqiy immunitetni hosil qilish orqali eustremizm va terrorizm bilan bog'liq jinoyatlar sodir etilishining oldini olish hal qiluvchi ahamiyatga ega.

Yurtimizda aholining huquqiy savodxonligini oshirish orqali huquqbuzarlik(jinoyat)larning oldini olish, jamiyatda o'rnatilgan tartibot va qonun normalariga og'ishmay amal qiluvchi shaxsni tarbiyalash masalalarining dolzarbligi bu borada ilmiy-tadqiqot ishlari olib borilishini taqozo etmoqda. Shu nuqtai nazardan qaraganda, huquq-tartibotni ta'minlovchi tuzilma sifatida ichki ishlar organlari aholining huquqiy madaniyatini yuksaltirish, ayniqsa, yoshlarga ijtimoiy, siyosiy, huquqiy yo'nalishdagi birlamchi axborotlarni uzluksiz yetkazib berishi orqali ularning huquqiy ongi va madaniyatini oshirish dolzarb vazifa hisoblanadi⁵.

Shuningdek, ichki ishlar organi xodimlarining huquqiy ongi va madaniyatini yuksaltirish, ularning qonun hujjatlarini to'g'ri qo'llay olish amaliyotini sifat jihatidan yangi bosqichga ko'tarish talab etiladi.

Yoshlarni qonunga itoatkorlik ruhida tarbiyalash va huquqiy savodxonligini oshirishda ichki ishlar organlarining faoliyatida uchrayotgan ayrim muammolar va unga ta'sir etuvchi omillar mavjud bo'lib, bu muammolarning ilmiy-nazariy va amaliy jihatlarini tadqiq etmasdan turib, jamiyat huquqiy madaniyatini to'laqonli yuksaltirishning imkoni yo'q.

Jumladan, yoshlarda huquqiy ong va huquqiy madaniyatni yuksaltirish ishlari tizimli va uzviy tashkil etilmayapti. Jamiyatda, oilada, mahallada, ta'lim muassasalarida va tashkilotlarda huquqiy axborotlarni yetkazishning ta'sirchan mexanizmi mavjud emas.

⁵ O'zbekiston Respublikasi Prezidentining 2019-yil 9-yanvardagi PF-5618-son "Jamiyatda huquqiy ong va huquqiy madaniyatni yanada yuksaltirish bo'yicha chora tadbirlari to'g'risida"gi Farmoni// URL <http://www.lex.uz>

Shuningdek, yoshlar bilan manzilli ekstremizm va terrorizmni oldini olishda huquqiy targ'ibot tadbirlarini tashkil etishda va amalga oshirishda davlat organlari va boshqa sohaviy xizmatlarning faol ishtiroki ta'minlanmayapti, bu borada yuqori natijadorlik va samaradorlik ko'zga tashlanmayapti.

Huquqiy tadbirlar hamon an'anaviy usullarda, oddiy uchrashuvlarni o'tkazish yo'li bilan amalga oshirilmoqda, bu borada targ'ibotning innovatsion usullaridan, shu jumladan, veb-texnologiyalardan foydalanilmayapti, ichki ishlar organlarining huquqiy yo'nalishdagi internet sahifalari yetarli emas.

Mazkur muammolarning ilmiy-nazariy va amaliy tomonlari bo'yicha shu kunga qadar ilmiy tadqiqot ishlari to'liq o'tkazilmayotganligi sababli ichki ishlar organlari boshqa davlat organlari bilan mazkur yo'nalishda innovatsion yechimlar va yangiliklar veb-saytlar orqali targ'ibot tashviqot ishlarini tashkil etishlari hamda ilmiy tadqiqot ishlarni olib borishlari maqsadga muvofiq.

Davlatimiz rahbari ta'kidlaganidek, "Asosiy masala - qonunlarning mazmun-mohiyatini xalqimizga va mas'ul ijrochilarga o'z vaqtida yetkazish, ularning ijrosini to'g'ri tashkil etish hamda qonun talablariga qat'iy amal qilishni ta'minlashdan iboratdir". Mazkur vazifalar va "O'zbekistonning Yangi taraqqiyot strategiyasi" 17, 20-maqсадlari talabidan kelib chiqib, ichki ishlar organlarining jamiyat huquqiy madaniyatini yuksaltirishga oid faoliyatini takomillashtirish, «aholining huquqiy ongi va madaniyatini yuksaltirish borasida davlat tuzilmalari (*muallifdan: shu o'rinda, ichki ishlar organlari*) ning fuqarolik jamiyati institutlari, ommaviy axborot vositalari bilan o'zaro samarali hamkorligini tashkil etish» bilan bog'liq muammolarni tadqiq etish va uning ilmiy yechimini topish muhim ahamiyat kasb etadi⁶.

Yuqoridagilarga asosanib xulosa sifatida shuni aytish joizki Ichki ishlar organlari xodimlari ekstremiz va terrorizmni oldini olishda fuqarolarning huquq va erkinliklarini himoya qilishda aholinig jamiyatda huquqiy ong va huquqiy madaniyatni yuksaltirish ular bilan uchrashuvlar hamda aholini qiynab kelayotgan huquqiy muammolarini bartaraf etish orqali huquqiy savodxonligini oshirsak maqsadga muvofiqdir

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AO “O‘ZBEKISTON TEMIR YO‘LLARI” KORXONALARIDA XODIMLARING TEXNIK XAVFSIZLIGI HOLATINI TAHLIL QILISH

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Annotatsiya: Maqolada “O‘zbekiston Temir Yo‘llari” aksiyadorlik jamiyati tarkibidagi korxonalarda texnik xavfsizlik holati chuqur tahlil qilinadi. Tadqiqotning asosiy maqsadi – xodimlar ishtirokidagi texnologik jarayonlarda yuzaga keladigan xavf-xatarlarni aniqlash, ularning statistik ko‘rsatkichlarini baholash hamda mavjud tizimlarni xalqaro tajriba bilan solishtirish orqali texnik xavfsizlikni yaxshilash bo‘yicha ilmiy asoslangan tavsiyalar ishlab chiqishdan iborat.

Tahlil natijalari so‘nggi yillarda baxtsiz hodisalar soni sezilarli darajada kamayganini ko‘rsatmoqda, biroq halokatli holatlar va avariylar, asosan, texnik xizmat ko‘rsatishdagi uzilishlar, yaroqsiz uskuna va malaka darajasi past bo‘lgan xodimlar ishtirokida sodir bo‘layotgani aniqlangan. Shuningdek, ayrim korxonalarda xavfsizlik monitoringi avtomatlashtirilmagani sababli mavjud muammolar o‘z vaqtida aniqlanmayapti.

Maqolada ISO 45001 kabi xalqaro standartlar va Yevropa Ittifoqi temiryo‘l tizimlaridagi amaliy tajribalar bilan O‘zbekiston sharoiti solishtirilib, texnik xavfsizlik madaniyatining yetishmasligi, AI texnologiyalarining joriy etilmagani va texnik xizmatlarning reaktiv emas, balki prediktiv shaklga o‘tishi zarurligi ta’kidlanadi. Shuningdek, YOLOv5 kabi ilg‘or texnologiyalar asosida shaxsiy himoya vositalarini nazorat qilish, Maintenance 4.0 modeli asosida texnik xizmatni avtomatlashtirish bo‘yicha amaliy takliflar berilgan.

Mazkur maqola soha muhandislari, texnika xavfsizligi bo‘yicha mutaxassislar va korxona rahbarlari uchun amaliy ahamiyatga ega ilmiy manbadir.

Kalit so‘zlar: texnik xavfsizlik, temir yo‘l transporti, ishlab chiqarish xavfi, mehnat muhofazasi, xalqaro standartlar.

Kirish

Temir yo‘l transporti tizimi – yirik ishlab chiqarish infratuzilmasi bo‘lib, unda minglab xodimlar og‘ir sharoitlarda mehnat qilmoqda. Aynan shuning uchun texnik xavfsizlikni ta’minlash, xodimlarni mehnat jarayonidagi ishlab chiqarish xavflaridan himoyalash muhim ahamiyat kasb etadi. “O‘zbekiston Temir Yo‘llari” AJ mamlakat iqtisodiyotida yetakchi sohalardan biri bo‘lib, transport logistikasida markaziy o‘rinni egallaydi. Ammo ushbu tizimda texnik xavfsizlikning bugungi holati chuqur ilmiy

tahlilni talab etadi [1].

Metodologiya

Tadqiqotda quyidagi metodlar qo'llanildi:

Statistik ma'lumotlar tahlili: 2018–2024 yillar oralig'ida yuz bergan ishlab chiqarishdagi baxtsiz hodisalar, texnik avariya va texnik nazorat aktlari o'rganildi.

Sifatli baholash: texnik xavfsizlik tizimiga oid me'yoriy hujjatlar (ISO 45001, GOST, O'zbekiston Respublikasining Mehnat kodeksi va boshqalar) tahlil qilindi [2], [3].

Solishtirma yondashuv: O'zbekiston tajribasi Yevropa Ittifoqi va AQSHdagi temiryo'l kompaniyalari bilan taqqoslandi [4], [5].

Natijalar

Texnik xavfsizlik holatining statistik tahlili

So'nggi 6 yil davomida O'zbekiston temir yo'l korxonalarida quyidagi holatlar qayd etildi (1-jadval):

1-jadval

Yil	Ishlab chiqarishdagi jarohatlar soni	Halokatli holatlar	Texnik nazoratdan o'tmagan uskunalar foizi
2018	67	3	18%
2020	54	2	12%
2022	49	2	9%
2024	45	1	6%

Jarohatlar soni kamaygan bo'lsa-da, halokatli holatlar davom etmoqda. Avariya sabablari orasida quyidagilar ustunlik qiladi:

- Yaroqsiz yoki texnik ko'rikdan o'tmagan uskunalar;
- Malaka darajasi past bo'lgan xodimlar ishtiroki;
- Texnik hujjatlar bilan tanishmagan holda ishni boshlash.

Tizimli muammolar

Aksariyat korxonalarda xavfsizlik bo'yicha avtomatlashtirilgan monitoring yo'q YOLOv5 asosida shaxsiy himoya vositalarining nazoratini joriy qilish amalda qo'llanilmayapti [6]

Texnik xizmat ko'rsatish rejimi eski grafik asosida yuritiladi, prediktiv (oldindan bashoratlovchi) yondashuv mavjud emas [7]

Munozara. Xalqaro amaliyot bilan solishtirish (2-jadval)

2-jadval

Ko'rsatkich	O'zbekiston Temir Yo'llari	Deutsche Bahn (Germaniya)	Network Rail (Buyuk Britaniya)
Halokatli holatlar/1000 ishchi	0.17	0.03	0.02
ISO 45001 sertifikatlanganlik	38%	100%	95%
IoT monitoring tizimi	Cheklangan	To'liq joriy etilgan	To'liq joriy etilgan

Ko'rinib turibdiki, xorijiy kompaniyalar zamonaviy texnologiyalar va normativ madaniyatni chuqur joriy etgan. Bunda ularning texnik xavfsizlik madaniyati yuqori darajada shakllangan [5], [8].

Takliflar

Texnik xizmat ko'rsatish bo'yicha Maintenance 4.0 modeliga o'tish [7].

Texnik xavfsizlik bo'yicha o'quv kurslarini zamonaviy simulyatorlar asosida tashkil etish.

Xodimlar harakatlarini AI va kamera orqali avtomatik monitoring qilish.

Xulosa

“O'zbekiston Temir Yo'llari” AJ tizimida texnik xavfsizlik borasida ijobiy siljishlar bo'lishiga qaramay, tizimli muammolar saqlanib qolmoqda. Jahon tajribasidan kelib chiqib, texnologik yechimlar, sertifikatlash va madaniy transformatsiya orqali xodimlarning texnik xavfsizligini sezilarli darajada oshirish mumkin. Davlat va korxona darajasida xavfsizlikka yondashuvni innovatsion, kompleks shaklga o'tkazish zarur.

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THE ROLE OF METROLOGICAL CONTROL AND STANDARDIZATION IN IMPROVING AIR QUALITY THROUGH STREET WATERING (CASE OF ANDIJAN CITY)

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Abstract. This paper investigates the practical approach of reducing air pollution caused by particulate matter (PM₁₀ and PM_{2.5}) in Andijan City through the method of street watering. To assess the effectiveness of this method, air quality was monitored using AQI indicators, emphasizing metrological accuracy, proper calibration of instruments, and compliance with international standards. The study highlights the role of metrology and standardization in environmental monitoring, evaluates the reliability of measurement methods, and analyzes the benefits of standard-based management in street watering systems. Results show that regular watering can reduce AQI values by up to 30% under dry climatic conditions. Recommendations for technical regulation, system optimization, and public health awareness are provided.

Keywords: air quality, metrological control, AQI, PM₁₀, standardization, street watering, environmental monitoring, Andijan

Introduction

Andijan City is a central urban and industrial hub of the Fergana Valley in Uzbekistan. Rapid urbanization, increased vehicle density, and accelerated construction have intensified environmental stress. One of the most visible outcomes of this pressure is the degradation of air quality. Among major pollutants, particulate matter (especially PM₁₀) poses a serious health risk. In addition to emissions from vehicles and factories, dust from unpaved roads and construction sites significantly contributes to PM levels, particularly during dry seasons. According to the World Bank (2024), average PM₁₀ concentrations in Andijan frequently exceed WHO limits, especially during winter and late summer months.

Monthly AQI Levels in Andijan, 2024

Month	AQI	Rating
January	105	Unhealthy
February	102	Unhealthy
March	85	Moderate
April	72	Moderate

May	65	Moderate
June	62	Moderate
July	59	Moderate
August	64	Moderate
September	78	Moderate
October	90	Unhealthy for sensitive groups
November	105	Unhealthy
December	110	Unhealthy

The Role of Dust Pollution and Watering

Road dust comprises soil particles, tire residues, construction debris, and organic matter that easily lift into the air in dry, windless weather. PM₁₀ particles are particularly harmful to public health, especially for vulnerable populations such as children, the elderly, and individuals with asthma. Street watering is a simple yet effective method to suppress dust. By spraying water on asphalt and concrete roads, airborne dust is reduced significantly. Similar results have been recorded in cities like Tehran, Almaty, and Beijing.

Efficiency Mechanisms of Street Watering

Street watering suppresses dust primarily through two mechanisms:

- **Surface adhesion:** Moisture binds particles to the road surface, minimizing their suspension.
- **Microclimate effect:** Local humidity increases, helping trap particles and slightly reducing urban heat island effects.

Projected Impact of Watering on AQI (October 2024)

Scenario	Projected AQI
No action taken	90
Watering once per day	80
Watering twice per day	72
Watering + sweeping	65

6. Results and Discussion

The analysis shows that regular watering can reduce AQI by 20–30%, especially when combined with sweeping and other urban hygiene measures. However, effectiveness is closely linked to the accuracy and standardization of monitoring. Metrological control — including certified, calibrated, and reproducible instruments — is essential. Equipment used to determine AQI should comply with international standards such as ISO 4225:1994.

AQI levels above 100 are mainly observed in winter, correlating with an increase

in respiratory diseases. Targeted dust control actions during peak months (November–February and September–October) can significantly reduce health risks. Integrating watering with tree planting, curb paving, and road sweeping could enhance its overall effectiveness.

Moreover, watering operations themselves must be regulated. Parameters such as water volume, spraying rate, and frequency should be clearly specified in technical guidelines. This ensures uniformity and enables data-based environmental management.

7. Recommendations

- Implement a city-wide dust mitigation program including watering, sweeping, and paving.
- Prioritize high-traffic and densely populated areas such as central Andijan and Bobur Street.
- Use non-potable recycled water to conserve drinking resources.
- Introduce real-time AQI monitoring systems.
- Conduct public awareness campaigns about health hazards of dust pollution.

8. Conclusion

Dust pollution in Andijan is a persistent issue throughout the year. Street watering, while basic, remains a practical and cost-effective method of mitigating airborne particulates. Combined with regulatory oversight and environmental standardization, it can play a vital role in improving public health and urban air quality. To maximize impact, this method must be integrated with broader environmental and urban planning strategies, underpinned by metrological rigor and technical standards.

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SAFETY RISKS AND MEASURES IN THE MAINTENANCE AND CLEANING OF SOLAR PANELS

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Abstract

The growing global demand for energy has led to increased adoption of renewable energy technologies, especially solar power systems, due to their sustainability and environmental benefits. However, the operation and maintenance of solar panels—particularly cleaning processes—introduce a variety of safety risks. This article examines these risks in detail, focusing on mechanical hazards, electrical dangers, and environmental factors involved in maintaining rooftop and building-integrated photovoltaic (BIPV) systems. The paper highlights the importance of preventative maintenance, such as regular inspection for mechanical damage, electrical system checks, snow removal, and cleanliness of panels. Particular emphasis is placed on risks associated with working at heights, including falls, improper use of tools, and weather-related hazards such as slippery surfaces or high UV exposure. Furthermore, damage to equipment during cleaning or servicing is a critical concern that can reduce panel efficiency or lead to complete system failure. The study presents mitigation strategies, including personal protective equipment (PPE), system shutdown procedures, and specialized safety training. It advocates for integration of safety practices into standard building codes and emphasizes the necessity of updating regulations, such as SNIP 2.01.07-1996, to reflect current technologies. The paper concludes that systematic training, proper equipment handling, adherence to safety protocols, and regular maintenance scheduling are essential for reducing occupational hazards and prolonging the lifespan and performance of solar systems.

Keywords: solar energy, renewable energy, maintenance safety, photovoltaic systems, electrical hazard, fall protection, building regulations, SNIP standards, rooftop work, environmental safety

Introduction. The modern era demands an increasing amount of energy consumption, which continues to grow annually. As traditional fossil fuel resources like oil, coal, and gas face depletion and environmental criticism, renewable energy sources—particularly solar, wind, and geothermal—are becoming essential alternatives. Among them, solar energy is particularly suitable for regions with abundant sunlight. However, the integration of solar technologies into buildings must strictly comply with local construction and safety standards. The primary aim of this

study is to analyze existing regulations, identify safety hazards, and develop recommendations for safe maintenance and cleaning of installed solar panels. Additionally, this research evaluates the structural impact on buildings and proposes engineering calculations to ensure load compliance during installation and servicing.

Risks During Preventive Maintenance of Solar Panels

Electric Shock: Solar panels generate electricity, and working with connected systems poses a serious risk of electrocution.

Short Circuits and Fires: Improper handling of electrical components may result in short circuits, overheating, or fires.

Mechanical Hazards. Falls from Height: Solar panels are commonly installed on rooftops or high platforms, increasing the risk of falling.

Tool-Related Injuries: Mishandling tools can cause physical injuries during installation or cleaning.

Climatic Hazards. Slippery Surfaces: Wet or icy roofs make movement dangerous. **UV Exposure:** Long-term exposure to sunlight can cause heatstroke or sunburn.

Equipment Damage Risks. Mechanical Damage to Panels: Using inappropriate tools during cleaning may cause cracks or scratches. **Seal or Coating Damage:** Damaging the surface integrity may reduce efficiency or render the system inoperative.

Risk Mitigation and Safety Measures.

Electrical Safety. Always disconnect the system before beginning work. Use dielectric gloves, insulated tools, and anti-shock footwear.

Fall Prevention. Use safety harnesses, guardrails, and anchor points. Limit access and mark zones near roof edges.

Weather Precautions. Postpone work in rain, snow, or extreme heat. Wear UV-protective clothing, sunglasses, and schedule breaks in the shade.

Panel Handling and Equipment Use. Use soft, non-abrasive materials for cleaning. Perform visual and technical inspections routinely.

Training and Emergency Preparedness. Ensure workers are trained in electrical and height safety protocols. Conduct regular fire and emergency drills [2].

Regulatory Considerations. Based on the risks outlined, it is necessary to revise and expand national construction regulations, such as SNIP 2.01.07-1996 “Loads and Impacts,” which govern design parameters for building loads. Updated standards should address modern solar technology, including BIPV systems, their anchoring mechanisms, and the dynamic loads introduced by maintenance activities. Integrating maintenance procedures into building codes will enhance occupational safety and system longevity.

Conclusion. Ensuring safety during solar panel maintenance requires a comprehensive approach that accounts for electrical, mechanical, environmental, and

structural risks. Preventive strategies—including system shutdowns, PPE use, secure anchoring systems, and updated training protocols—can significantly minimize accidents. Incorporating such measures into national building regulations and safety codes is critical for supporting the sustainable and safe expansion of renewable energy infrastructure. Furthermore, adopting a proactive culture of safety in the renewable energy sector contributes not only to the physical protection of workers but also improves system performance and operational efficiency. As solar panel technology evolves and becomes more widely implemented, maintenance workers will require continuous education on updated risks and mitigation techniques. Encouraging collaboration between policymakers, engineers, safety experts, and equipment manufacturers is crucial to developing industry-specific standards that reflect real-world operational contexts.

Investment in smart monitoring technologies, such as remote diagnostics and predictive maintenance systems, can help detect performance issues before they become critical failures. Similarly, the development of training simulators and virtual reality safety environments can prepare technicians for high-risk conditions in a controlled setting. Ultimately, achieving long-term sustainability goals depends not only on clean energy production but also on creating a safe, well-regulated, and resilient workforce capable of maintaining such systems over decades of operation.

Foydalanilgan adabiyot

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ELLIPSIS VA SUBSTITUTSIYANING NAZARIY ASOSLARI

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Annotatsiya: Ushbu maqolada ellipsis va substitutsiya hodisalari haqida batafsil ma'lumot berilib, ularni yuzaga keltiruvchi omillar namunalar yordamida ko'rsatib beriladi. Shuningdek ushbu hodisalardan foydalanish holatlari keng tahlil qilingan va nazariy asoslari yoritib berilgan.

Kalit so'zlar: Tilshunoslik, ellipsis, substitutsiya, og'zaki nutq, ixchamlik, grammatik vositalar, maqol.

Abstract: This article provides detailed information about the phenomena of ellipsis and substitution, also illustrates the factors that cause them with the help of examples. Moreover, it extensively analyzes the use cases of these phenomena and explains their theoretical foundations.

Key words: Linguistics, ellipsis, substitution, oral speech, diminutiveness, grammatical devices, proverb.

Kirish

Yozma va og'zaki matnda eng ko'p uchraydigan grammatik umumlashtiruvchi vositalardan biri ellipsis hisoblanadi. Ushbu hodisa haqida zamonaviy tilshunoslikda ham ko'pgina nazariyalar mavjud. Unga mashhur tilshunoslar turli xil qarashda bo'lganlar. Ellipsis hodisasi deyarli barcha tillar tilshunosligida o'rganilib, tahlil qilinadi. Ushbu hodisa haqida fikr bildirilganda ushbu atama asrlar davomida keng ko'lamli hodisalarga, so'zlar yetishmayotgandek ko'rinadigan har qanday vaziyatdan tortib muayyan matn konstruktsiyalarning ancha tor doirasiga nisbatan qo'llanilganligini anglash mumkin. U umumlashtiruvchi vositalardan biri bo'lib, uning asosiy xususiyati jumla ichida ayrim gap bo'laklarining tushirib qoldirilishidir. Lekin matnning ma'nosi tushunilishi yoki kontekstdan tiklanishi mumkin bo'lgan so'zlar yoki, iboralardir¹. Tilshunoslik tarixida ellipsis mavzusiga qiziqish katta bo'lib, ko'plab muhokamlarga sabab bo'lgan. Chunki unda shakl yo'q, biroq ma'no bor, ya'ni bitta so'zdan ham butun bir gapning mazmunini tushunish mumkin. Shuning uchun ham ushbu hodisa yuzasidan ko'pchilik tilshunoslar ilmiy ishlar olib borgan va tadqiqotlar hozirda ham davom etmoqda.

Substitutsiya tilshunoslikda keng tarqalgan hodisalardan bo'lib, u deyarli barcha tillarda mavjuddir. Almashtirish hodisasi bir tilda boshqa tillardagidan ko'proq va tez-tez foydalanilganligi sababli, almashtirish usullari ham tillarda farq qilishi

¹ Ellipsis: A survey of analytical approaches Jason Merchant, University of Chicago, 2013,- P.2

mumkin. U grammatik birlashtiruvchi vositalarning bir turi hisoblanib yillar mobaynida ko'plab olimlar tomonidan o'rganilgan va ushbu hodisani o'rganish yuzasidan ilmiy tadqiqotlar olib borilgan.

Substitutsiya-matndagi jumla yoki gapning leksik-grammatik darajadagi munosabatlarni saqlaydigan grammatik umumlashiruvchi vositalarning bir turi hisoblanadi. U ma'lum bir elementni takrorlash o'rniga ishlatiladigan vosita turi bo'lib, o'rnini bosuvchi so'z yoki gap yordamida amalga oshiriladi. Substitutsiya so'z yoki gap o'rnini bosadigan tuzilmaviy funksiyaga ega. U turli xil bosqichlarda - so'z, so'z birikmasi, gap va hattoki matnlarda ham bo'la oladi. Uning asosiy vazifalaridan biri takrordan qochish, xabarni qisqartirish va uni o'quvchi uchun aniqroq qilishdan iborat. Almashtirishning yana bir vazifasi ma'lumotlarni tartibsiz holda ko'rsatmasdan gaplarni bog'lashdir.

Adabiyotlar sharhi

Ellipsis va substitutsiya hodisalari haqidagi nazariyalar to'g'risida ma'lumot keltirib o'tilganda hozirgi davrgacha va hozir ham ko'plab mashhur olimlar ushbu hodisalar yuzasidan ilmiy ishlar olib borayotgani ma'lum bo'ldi. Ellipsis ilk marotaba lingvistik hodisa sifatida rus tilshunosi O.I.Reunova tomonidan tahlil qilingan bo'lib, u o'zining "Ellipsis lingvistik hodisa sifatida" nomli kitobida, ushbu hodisaning namoyon bo'lish holatlari, uning badiiy matndagi o'rne kabi muhim muammolarga yechim topishga harakat qilgan.

Ellipsis haqida yaratilgan nazariyalardan yana biri ingliz funksional grammatikasining yetuk mutaxassisi M.A. K. Hallidey tomonidan kiritilgan. Unga ko'ra ellipsis gaplarning ichki tuzilishi jihatidan emas, balki ularning orasidagi munosabatlar nuqtai nazaridan farqlanadi. Shuningdek tilshunos ellipsisni gapda substitutsiya bilan ham almashtirish mumkinligi haqida ma'lumot bergan. Olim ushbu vositaning 3 ta asosiy turini farqlaydi: nominal, predikativ va jumla ellipsisi. M.A. K. Hallidey jumla ichidagi presuppozitsiyani tahlil qilmaydi va ellipsisga gaplar orasidagi munosabatlar nuqtai nazaridan yondashadi. U shunday xulosaga kelganiga asosiy sabab gaplar o'rtasidagi tuzilmaviy aloqalar mavjud emasligi bo'lib, shuning uchun ham bog'liqlikni o'rganish muhim ahamiyatga ega ekanligi haqidagi fikrni ilgari suradi.

Mashhur tilshunos Makkarti ellipsisga quyidagicha ta'rif beradi: "Ellipsis – bu odatda grammatik jihatdan gapdagi elementlarning tushirib qoldirilishini talab qilsa, so'zlovchilar yoki yozuvchilar matnning ma'nosini uning ma'lum qismlari tushib qolsa ham aniq tushunish mumkin deb hisoblaydilar"². Bundan shuni xulosa qilish mumkinki, ellipsis nafaqat yozma nutqqa, balki og'zaki nutqqa ham aloqador hodisa hisoblanadi.

Tilshunos Biber ellipsis hodisasiga quyidagicha ta'rif beradi: "Ellipsis- bu

² McCarthy, Michael. 1996. Discourse analysis for Language Teachers. Cambridge: CUP, 1996, -P.43

lingvistik yoki situatsional kontekstdan aniq qayta tiklanadigan elementlarning tushirib qoldirilish jarayonidir”³. Biber o‘quvchini gapda ellipsisdan foydalanmaslik gapni tuzilish yoki talaffuz jihatdan xato emasligiga ishontirishga harakat qiladi. Asl matn tarkibiga kirmagan burchak qavs ichidagi elementlar (elliptik elementlar) gapning ma’nosini o‘zgartirmasdan va grammatik tuzilma yaratmasdan qo‘shilishi mumkin, bu ellipsis belgilaridir.

Ellipsis bo‘yicha chuqur izlanish olib borgan keyingi buyuk ingliz tilshunosi Karterdir. U ushbu hodisaga shunday ta’rif beradi: “Ellipsis umumlashtiruvchi vositalaridan biri bo‘lib, uning asosiy xususiyati ma’nosi kontekstdan tiklanadigan va tushuniladigan so‘zlar yoki iboralarni tushirib qoldirishdir”. Ellipsis notiqalar va yozuvchilar tomonidan, ayniqsa og‘zaki nutqda Karter ta’kidlaganidek, norasmiylik belgisi sifatida qo‘llaniladi⁴.

Substitutsiya bu biror birlikning o‘rniga uning ekvivalenti bo‘lgan boshqa elementni qo‘yish hodisasidir. Biror so‘z yoki gap tushirib qoldiriladi, lekin uni qoldirib ketmasdan o‘rniga boshqa so‘z bilan almashtiriladi. Mashhur grammatik olim Hallidey va Hasan nazariyalariga ko‘ra substitutsiya mustahkamlik mezonining asoslaridan biri hisoblanadi va grammatik umumlashtiruvchi qurilmalarining ikkinchi turini ifodalagan, ya’ni matnli bog‘lanish shaklidir. Almashtirish foydalaniladigan matn kontekstida matnning uyg‘unligiga erisha oladi, chunki u substitutsiya va almashtirilgan gaplarning qarama-qarshilik tizimiga bog‘liq bo‘lib, ular o‘rtasidagi umumiy munosabatga asoslanadi, bu esa matn qismlari o‘rtasida bir-biri bilan muvofiqlikka erishishga yordam beradi va matnshunoslar bu tasdiqlangan o‘zaro bog‘liqlikni ma’qul ko‘radilar. Tilshunos Begrande nazariyalari shuni ko‘rsatadiki, almashtirish bu -matnning ikkita komponenti yoki matn dunyosi o‘rtasidagi bog‘liqlik, ulardan ikkinchisi va birinchisi o‘rtasida bo‘lingan ma’lumotlar strukturasi faollashtirishga imkon beradi, birinchi element uning o‘rnini bosuvchi elementlardan biri bo‘lib, ikkinchisi esa o‘rnini bosadigan elementni almashtiradi⁵.

Grammatik vosita sifatida substitutsiya mashhur tilshunos Vaytxoll tomonidan ham o‘rganilgan bo‘lib, u ikkita grammatik vosita mavjudligini ta’kidlaydi. Birinchisi tanlash deb nomlansa, ikkinchisi esa substitutsiya nomi bilan keng tarqalgan. Tilshunos substitutsiyaning ikkita turini aytib o‘tadi. Dastlabki turi “Parallel almashtirish” bo‘lib, u ba’zida substitutsiya sifatida foydalaniladi. Keyingi turi esa sistematik substitutsiyadir. Bunday almashtirish to‘liq so‘zlar va bo‘sh so‘zlar bilan mos keladigan o‘rnini bosuvchi so‘zlarning maxsus sinfi sifatida qaraladi. Tilshunos Kolin substitutsiyaning quyidagicha ta’riflaydi: “Almashtirish grammatik vosita bo‘lib,

³ Biber, Douglas (et. al.). 1999. Longman Grammar of Spoken and Written English. Harlow: Pearson Education Limited, 1999, - P.156

⁴ Carter, Ronald and McCarthy, Michael. 2006. Cambridge Grammar of English. Cambridge: CUP, 2006, - P.902

⁵ Linguistics of the Text: An Introduction to the Harmony of Discourse: Muhammad Al-Khattabi, The Arab Cultural Center, Casablanca - Morocco, 2nd Edition, 2006 AD

ikki shaklga ega. Birinchisi, muloqot jarayonida moslashuvchanlikni ta'minlovchi "sof strukturaviy almashtirish" bo'lsa, keyingi shakl qisqa birliklarni qo'llash orqali takrordan qochishiga yordam beradi".

Tadqiqot metodologiyasi

Ushbu maqolani yoritish jarayonida turli xil metodlardan foydalanildi. Asosan, analiz, sintez, kuzatuv, lingvistik metodlardan tavsifiy, qiyosiy-tarixiy metodlar yordamida maqola mavzusi keng ochib berildi.

Tahlil va natijalar

Ellipsis sintaktik ekspressivlikni yuzaga keltiruvchi vositalar ichida keng tarqalgan turi bo'lib, u dialogik nutqlarda ko'p uchraydi, chunki dialog replikalaridagi doimiy bog'lanishlar bunga to'la imkon beradi. Badiiy matnlarda ellipsis tahlil qilinganda, qaysi gap bo'lagi ushbu hodisaga uchragani va qanday maqsad kuzatilganligi izohlab o'tiladi. Shuningdek, ushbu hodisa xalq og'zaki ijodi bo'lmish maqollar, hikmatli so'zlar va frazeologizmlarda ham kuzatilishi mumkin. Ellipsis hodisasi ayniqsa maqollarda juda keng tarqalgan. So'zlarning tushirib qoldirilishi natijasida maqollarda o'ziga xos ixchamlik va ifodalilik yuzaga keladi⁶.

1. Yaxshi otga bir qamchi, yomon otga ming.

2. Ekin yerida ko'karar

Er- elida.

3. Daraxtni tomiri saqlar,

Odamni- do'sti

4. If you walk with good, you will achieve your goal.

If you walk with bad, you will be ashamed.

Ellipsis hodisasi o'zbek tilshunosligida ham keng foydalaniladi. Mashhur o'zbek yozuvchisi Abdulla Qahhor asarlarida ba'zan ixcham va sodda bo'lishi uchun ayrim maqollarning mazmunini qisqartirish maqsadida ham ellipsisdan foydalangan. Jumladan, "Asror bobo" hikoyasida: **Ko'ksingda o't bor, ho'l bo'lsa ham, quruq bo'lsa ham soching bir tekis yonsin** (You have grass on your chest, let your hair burn evenly when it is wet or dry); Bizni hamma narsadan mahrum qilmoqchi bo'lgan Gitler hali ham ko'p narsani yo'qotdi. Qadimgi qishloq qayerda? Agar sizda hali ham yonmaydigan yurak bo'lsa, uni eslasangiz, u yonadi. Ellipsis ko'proq og'zaki nutqqa xos bo'lib, uni tushirib qoldirish matn mazmuniga ta'sir qilmasligi va ixchamlikni ta'minlashga yordam beradi. Buni quyidagi namunada yaqqol ko'rish mumkin:

- Can I borrow your pen?

- Yes, but what happen to yours? - Bu gapda nominal guruhdagi

"yours"(sizniki) olmoshi elliptik bo'lib, elliptik bo'lmagan versiya "your pen" (sizning qalamingiz) bo'lishi kerak edi. Ushbu misollardan ellipsis norasmiy uslubga xos ekanligi va ot, olmosh va yordamchi fe'llar gaplarda tez-tez tushirib qoldirilishi va bu

⁶ Jyldoshev, M. Badiij matn lingvopojetikasi. Toshkent: Ўzbekiston.2019, -P.222

gapning mazmunini o'zgartirmasligini tushunish mumkin.

“Substitutsiya” so‘zining kelib chiqishi lotincha “substitute” fe‘lidan kelib chiqqan bo‘lib, biror element yoki vositani boshqasining o‘rniga qo‘yishni anglatadi. U almashtirish deb tarjima qilinadi va so‘z yoki iborani takrorlamaslik uchun ingliz tilida “so, one, did, do” kabi so‘zlar bilan ifodalanadi. Uni quyidagi na‘muna orqali batafsil o‘rganishimiz mumkin.

The flower seller cries, “Red flowers, red flowers, come and buy ones and present her”. Ushbu gapda ones so‘zi red flowers (qizil gullar) so‘zini takrorlamaslik uchun uning vazifasida qo‘llanilgan.

Gul sotuvchi aytdi: Qizil gullar, qizil gullar, keling va ularni sotib oling va unga sovg‘a qiling- Ushbu namunada ular olmoshi qizil gullar so‘zi o‘rnida qo‘llanilgan.

Substitutsiyaning eng aniq va sodda na‘munalari “yes” (ha) va “no”(yo‘q) so‘zlari bo‘lib ikkalasi ham uzun gaplarni, matndagi gaplarning ketma-ketligini ko‘rsata oladi. Boshqacha qilib aytganda, matn ichidagi substitutsiya bir elementni boshqasiga almashtirish vazifasini bajaradi. Bu ma‘nodagi emas, balki so‘z tarkibidagi munosabatdir, ya‘ni almashtirish lingvistik birliklar orasidagi munosabat hisoblanadi. Til tizimi nuqtai nazaridan bog‘lanish semantik darajadagi munosabat bo‘lsa, almashtirish bu -leksik-grammatik, grammatika va lug‘at darajasidagi munosabat yoki til shaklidir. Substitutsiya- bu asosan matn bilan chegaralangan og‘zaki munosabat shakli hisoblanadi. Buni quyidagi namunalardan orqali yana batafsil o‘rganishimiz mumkin:

My axe is too blunt. I must get a sharper **one**. -

You think Joan already knows? I think everybody **does**.

Ushbu namunalarda one so‘zi axe so‘zi o‘rnida, does so‘zi esa knows so‘zini ifodalash uchun foydalanilgan.

Substitutsiya bu o‘rin almashtirish vositasi bo‘lib, ushbu hodisadan tez-tez foydalanamiz, chunki so‘z yoki iborani ko‘p takrorlash matnning tuzilishiga salbiy ta‘sir ko‘rsatishi mumkin. “Would you like a cup of coffee?” – Yes, I would like a cup of coffee. Agar would so‘zida urg‘u bo‘lmasa, bu odatiy o‘zgarish emas.

“Yes please. I’d love one” dan foydalanilsa me‘yoriy alamshinuv bo‘ladi, one so‘zi a cup of coffee so‘zi o‘rnida qo‘llanilgan.

Xulosa

Ellipsis va substitutsiya hodisalari hozirgi davr tilshunosligida keng o‘rganilayotgan dolzarb mavzulardan biri hisoblanadi. Ushbu hodisalar barcha tillar lingvistikasida uchraydi. Ularning asosiy xususiyatlari shundaki, ellipsis gap yoki matnda uning mazmunini saqlagan holda tushirib qoldirish hodisasidir, ushbu hodisa tilshunlik fanida ko‘plab muhokamalarga sabab bo‘lgan, chunki unda shakl yo‘q, biroq ma‘no mavjud bo‘lib, butun bir gap va matnning mazmunini bitta so‘z yoki jumla

orqali anglash mumkin. Substitutsiya hodisasi bu matnda yoki gapda soʻzlarni ularning muqobil ekvivalenti bilan almashtirish jarayoni hisoblanib, u nutqda takrordan qochishga va matnda mazmundorlikka erishishga yordam beradi. Ushbu maqolada ularning nazariy asoslari namunalar yordamida tahlil qilindi.

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TEXNOLOGIYALAR YORDAMIDA TIL O'RGANISH: IMKONIYATLAR VA MUAMMOLAR

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Annotatsiya: XXI asr texnologiyalar asri deb e'lon qilingandan so'ng, hozirgi kunga qadar u barcha sohalarni rivojlantirishda muhim omil sifatida ommalashib bormoqda. Ushbu maqolada mana shunday sohalardan biri bo'lgan ta'limda texnologiyalarning tutgan o'rnini haqida so'z yuritiladi. Yana ham aniqroq qilib aytadigan bo'lsak, texnologiyalar orqali yangi til o'rganishning imkoniyatlari va muammolari haqida so'z boradi.

Аннотация: С момента провозглашения XXI века веком технологий, до настоящего времени они продолжают играть важную роль в развитии всех сфер жизни. В данной статье рассматривается роль технологий в сфере образования. Более конкретно, речь идет о возможностях и проблемах изучения новых языков с использованием технологий.

Kalit so'zlar: til o'rganish, sun'iy intellekt, mobil ilovalar, online ta'lim, ijtimoiy tarmoqlar, eshitish va ko'rish orqali o'rganish.

Ключевые слова: изучение языков, искусственный интеллект, мобильные приложения, онлайн-обучение, социальные сети, изучение через аудио и видео.

Keywords: language learning, artificial intelligence, mobile applications, online education, social media, learning through listening and watching.

Til — bu insonlarning fikrlarini, his-tuyg'ularini, bilim va tajribalarini bir biriga ifodalash, muloqot qilish uchun foydalanadigan belgilar, ya'ni so'zlar, tovushlar, imo-ishoralarning tizimli majmuasi hisoblanadi. Til nafaqat gapirish va yozish vositasi, balki madaniyat va jamiyatning muhim qismi hisoblanadi.

Tilning asosiy vazifalari quyidagilardan iborat:

- o'zaro axborot almashish
- o'ylash qobiliyatini shakllantirish va uni ifodalash
- jamiyatda muloqot qilish va munosabatlarni tartibga solish

Hozirgi kunda ta'lim jarayonida interaktiv metodlar, innovatsion texnologiyalar, pedagogik va axborot texnologiyalarini o'quv jarayonida qo'llashga bo'lgan qiziqish va e'tibor kundan-kunga kuchayib bormoqda. Bunday holatning asosiy sababi shundaki, uzoq yillar davomida an'anaviy ta'lim tizimida o'quvchilar, asosan, tayyor bilimlarni egallashga o'rgatilgan bo'lsa, zamonaviy texnologiyalar esa ularni bilimlarni mustaqil ravishda izlab topishga, tahlil qilishga va mustaqil xulosa chiqarishga yo'naltirmoqda. Bu esa o'quvchini faol fikrlashga, muammoli vaziyatlarni hal qilishga, ijodiy yondashuvga undaydi.

Barchamizga ma'lumki, til — bu o'zaro muloqot vositasi, tafakkur ifodasi va insoniyat taraqqiyotining asosiy omillaridan biridir. Har bir xalq uchun o'z ona tili bebaho qadriyat, millatning g'ururi hisoblanadi. Til millatning ongi va xotirasi, ruhiyati, ma'naviy va madaniy qiyofasi, milliy qadriyatlari hamda tarixiy merosidir. Shu sababli tilning millat, davlat va jamiyat taraqqiyotidagi o'rni beqiyos bo'lib, u doimo e'tiborda bo'lishi lozim. Jamiyat taraqqiy etgan sari, tilga bo'lgan muhabbat va e'tibor ham ortib boradi. Ayni paytda, ijtimoiy hayotdagi har qanday taraqqiyot tildagi o'zgarish va rivojlanishlarga bevosita ta'sir ko'rsatadi.

XXI asr — axborot texnologiyalari asri bo'lib, ayniqsa til o'qitish jarayoniga kompyuter texnologiyalarining joriy etilishi katta ahamiyat kasb etmoqda. Agar XX asrda bu katta muammo sifatida qaralgan bo'lsa, bugungi kunda bu vositalardan til o'qitishda samarali foydalanish yo'lga qo'yilgan. Kompyuter texnologiyalari yordamida til o'rganish nafaqat osonlashdi, balki o'quvchilar uchun yanada qiziqarli, samarali va interaktiv tus oldi.

Ayniqsa, bugungi yoshlar orasida mobil ilovalar yordamida til o'rganish keng tarqalmoqda. Duolingo, Memrise, Babbel, Busuu kabi ilovalar foydalanuvchilarga yangi so'zlarni o'rganish, grammatikani mustahkamlash, talaffuzni yaxshilash va kundalik so'zlashuvga oid mashqlarni bajarish imkonini beradi. Bu ilovalar o'yin shaklidagi darslar, testlar va eshitish topshiriqlari orqali o'rganishni qiziqarli va interaktiv holga keltiradi. Mobil ilovalarning asosiy afzalligi — ularni istalgan joyda va vaqtda foydalanish mumkinligidir, bu esa ta'limni yanada erkin va moslashuvchan qiladi.

Texnologiya yordamida til o'rganish bir qancha imkoniyatlarni ochib beradi. Bularning bir qanchasini sanab o'tishimiz mumkin:

- bugungi kunda internet orqali istalgan tilda dars materiallarini topish, video, audio, maqola yoki testlardan foydalanish juda oson bo'lib qoldi. Biz uydan chiqmasdan turib ham chet tilini o'rganishimiz mumkin — bu ilgarilari ilojisiz narsa edi. Mobil ilovalar (Duolingo, Memrise, Busuu, Falou va boshqalar) yordamida istalgan vaqtda, hatto avtobusda ketayotganda ham mashq qilib, o'rganishni davom ettirish mumkin.

- texnologiyalar har bir foydalanuvchining darajasiga qarab o'rgatadi. Sun'iy

intellekt asosidagi platformalar (masalan, ChatGPT) bizning saviyamiz, xatolarimiz va ehtiyojlarimizga mos tarzda til o'rganishga yordam beradi.

-virtual suhbatdoshlar, real vaqtli tarjima, subtitrlar bilan filmlar tomosha qilish, podkastlar tinglash orqali biz tilni o'rganishda "chet tilida yashayotgandek" bo'lishimiz mumkin. Bu real muhitda o'rganishga yaqinlashishni bildiradi.

- ilovalardagi reytinglar, ball to'plash tizimi, kundalik reja — bular barchasi o'quvchini zeriktirmaslik, qiziqish davomiyligini saqlab qolish uchun ishlab chiqilgan. Oddiy darsdan ko'ra o'yin shaklidagi dars ko'proq foyda beradi. Ammo shunga yarasha uning kamchiliklari borligini ham unutmaslik kerak.

-ilova yoki sayt orqali o'rgana boshlagan odamni hech kim nazorat qilmaydi. O'zimizga qat'iy reja qo'ya olmasak, "ertaga qilaman" deb o'rganishni cho'zib yuboramiz. Har kuni mashq qilish kerak, aks holda natija bo'lmaydi.

- ko'pchilik faqat YouTube ilovasidan video ko'rib, uni tinglab yurish bilangina tilni o'rganaman deb o'ylaydi. Bu esa passiv o'rganishdan boshqa hech narsa emas. Tilni yaxshi bilish uchun o'zimiz uchun hech bo'lmaganda qisqa qaydlar yozib borishimiz, ularni kundalik suhbat va dialoglarda ishlatganda holda gapirib muntazam ravishda mashq qilib borishimiz ham kerak.

- mobil ilova biz bilan yozma suhbat quradi, lekin jonli odam bilan gaplashgandan atmosferani bera olmaydi. Bu esa so'zlashish (speaking) ko'nikmasi sustlashib, bir pozada "qotib qolish"ga olib keladi. Odamlar bilan gaplashib mashq qilib ko'rmasak, bilganlarimizni amalda qo'llay olmaymiz.

- internetda noto'g'ri ma'lumotlarni ham yo'q deya olmaymiz. Ba'zi videolarda grammatik xatolar bo'lishi mumkin yoki so'zlar noto'g'ri talaffuz qilinadi. Har ko'rgan va qabul qilgan axborotni to'g'ri deb qabul qilish xatoga olib keladi.

- telefon bilan o'rganish yaxshi, lekin shu telefonning o'zida Instagram, TikTok, Telegram kabi ta'limdan chalg'ituvchi ilova ham bor. Bu ilovalar orqali o'qishga kirishib, bir necha daqiqadan keyin boshqa narsaga chalg'ib ketish juda oson. Natijada o'rganish tartibsiz va bo'ladi va bundan kutilayotgan natija orqaga surilib boraveradi.

Qisqa qilib aytganda, texnologiyalar til o'rganishga yordam beradi, lekin ular biz o'ylagandek "mo'jiza" emas. Ularni to'g'ri ishlatmasak, shunchaki vaqtimiz zoye ketadi, lekin til o'rganish qolib ketaveradi. Doim o'z ustimizda ishlashimiz, tartib qoidaga amal qilib intizomli bo'lishimiz kerak.

Xulosa qilib aytadigan bo'lsak, bugungi kunda texnologiyalar til o'rganishni ancha osonlashtirib qo'ydi. Telefon yoki kompyuter orqali istagan tilimizni o'rganishimiz mumkin — ilovalar, saytlar, sun'iy intellektli dasturlar bunga yordam beradi. Lekin bu vositalar faqatgina o'zi ishlamaydi. O'rganaman degan odam har kuni oz bo'lsa ham vaqt ajratib, mashq qilib, harakat qilishi kerak. Texnologiya yordam beradi, lekin o'rganish o'zimizga bog'liq. Shuning uchun to'g'ri yo'ldan foydalanib, til o'rganishni odatga aylantira olsak, albatta yaxshi natijalarga erishamiz.

Foydalaniladigan adabiyot va manbalar:

1. <https://cyberleninka.ru>
2. www.in-academy.uz
3. Andijon Davlat Chet Tillari Instituti tahririyati: Xalqaro ilmiy-amaliy anjuman materiallari (2-qism)

USE OF INTERACTIVE METHODS IN TEACHING ENGLISH

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Abstract; In modern education, the approach to teaching Russian is evolving in response to the significant achievements of the 21st century. This article examines the main characteristics and practical results of the introduction of distance learning and technological tools in Russian language teaching in Uzbekistan. The advantages of creating a continuous learning process based on both theoretical and practical foundations are emphasized. The integration of modern educational innovations contributes to the improvement of the educational process, increases interactivity and ensures effective language acquisition by students and teachers. In addition, the need to adapt to new teaching methods is emphasized in order to train future specialists capable of competing internationally.

Keywords: Russian language teaching, innovative methods, distance learning, digital technologies, interactive methods, knowledge assessment, learning environment.

Innovative pedagogical methods play an important role in language learning. The education system is a continuous process that includes modern methods, approaches and technologies that meet global trends. The use of technological tools in Russian language teaching is aimed at improving efficiency and convenience for both teachers and students. Experts in the field of Russian recognize that the learning process is interactive and requires active collaboration between teachers and students to achieve optimal results. The spread of computers and the Internet has made distance learning more accessible, making it possible to create virtual schools and universities that provide full-fledged educational programs in online format. As a result, the education system of Uzbekistan, including the teaching of the Russian language, is undergoing significant changes, introducing innovative methods into educational practice. This study describes the key aspects of innovation in language education, presenting a structured analysis of how the concept of lifelong learning is formed and maintained [1]. The factors of "continuity" and "connectedness" play a crucial role in creating a functional and sustainable educational system. Compliance with these principles

allows for the systematic development of Russian language teaching, forming qualified specialists who are able to meet modern requirements and state educational standards [2].

Before implementing a distance learning system, several key factors must be considered. First of all, the technical infrastructure available to teachers and students plays an important role. The effectiveness of modern education largely depends on the available educational resources, such as smartphones, tablets, personal computers and laptops [10]. Although these devices are often associated with distractions such as social media and video games, they can be transformed into useful educational tools that promote language learning. Thus, Russian language teachers need to master innovative teaching methods, introducing new methods, materials and technologies for effective teaching. In addition, psychological readiness plays an important role in learning a foreign language. Teachers should take into account the age, interests, and preferences of students, using tools such as Google Forms to adapt curricula to the individual needs of students. Although this approach requires additional efforts, it significantly improves the educational process [3].

The variety of educational materials is another key factor in maintaining student interest. Traditional lessons often become monotonous due to repetitive materials. Therefore, teachers need to introduce innovative resources such as infographics, videos, and audio materials to stimulate student interest. For example, excerpts from popular movies and cartoons can be used to discuss new topics and create interactive discussions.

In higher education, students often face difficulties in studying complex subjects such as theoretical grammar, phonetics, and stylistics. To overcome these difficulties, educational materials can be adapted in the format of infographics and simplified videos, which makes them more accessible and understandable [4].

The learning environment has a significant impact on the language learning process. The atmosphere in which the Russian language is taught and studied should promote effective interaction and understanding. As educational systems evolve, teaching methods also change. Traditional methods of knowledge assessment are being replaced by modern approaches that ensure transparency and fairness in assessment. The assessment can be carried out daily or weekly, and the results can be published on digital platforms and on social networks. This approach promotes operational feedback and corresponds to modern distance learning models [5].

One of the most important aspects of effective teaching is the teacher's ability to adapt to different learning situations. The behavior of the teacher, his manner of communication and reaction to events in the classroom affect the perception of students [9]. Teachers have different teaching styles, which affects their interactions with students. Some teachers attract attention with their energy, while others use a calm but

authoritative approach. However, the key feature of outstanding teachers is the ability to find a balance between professionalism and personal involvement. Students appreciate teachers who show individuality, making the learning process more interesting and accessible.

Flexibility is another important quality of a teacher [8]. Despite careful lesson planning, unforeseen situations often arise during the learning process. The ability to respond effectively to these changes determines the success of a teacher. Experienced teachers can turn unexpected difficulties into learning opportunities by adapting learning strategies depending on the situation. This adaptability contributes to students' confidence and improves the overall educational process. Teachers should perform different roles depending on the nature of the learning assignment. For example, strict supervision may be appropriate when learning grammar, whereas in group projects the teacher's guiding role is more important. Other roles include providing feedback, evaluating student progress, and serving as a source of knowledge and personal mentor [6].

The use of digital tools in teacher training has become an integral part of modern education. The integration of computer and information technologies into teacher training increases the effectiveness of teaching. When applied correctly, these technologies provide higher educational outcomes compared to traditional methods. Digital tools can be used at various stages of learning, including introducing new topics, consolidating knowledge, practical exercises, and assessment. For example, multimedia presentations, electronic textbooks and video lectures contribute to better learning of the material. Using programs such as PowerPoint, Corel, and Adobe Photoshop helps students develop problem-solving skills and improve technological literacy.

In addition, the use of test assessment programs promotes objectivity in assessing students' knowledge. Online conferences, seminars and round tables allow teachers and students to exchange opinions and explore different points of view. The main goal of higher education is to train specialists who are able to think critically, adapt to changes and effectively respond to global challenges. To achieve this goal, educational programs should encourage the active participation of students and the development of their creative abilities. The effectiveness of learning depends on teaching methods, whether it is individual work, collective learning, or interactive methods [7].

Active teaching methods contribute to deeper study of the subject, the development of analytical thinking and independence of students.

Effective teaching of the Russian language, especially in a rapidly changing educational environment, requires an integrated approach that combines traditional methods, innovative technologies and interactive forms of learning. Modern realities dictate the need for constant updating of pedagogical strategies, which implies the

active use of digital tools, multimedia resources and distance learning platforms. These technologies not only expand the capabilities of teachers, but also create conditions for deeper and better language training of students.

However, innovation must be accompanied by attention to the psychological and motivational aspects of learning. The successful assimilation of the material largely depends on the teacher's professionalism, his ability to analyze the learning process, adapt methods to the individual characteristics of students and create a comfortable educational environment. Flexibility in the choice of approaches, the use of various learning formats and the use of a variety of educational materials such as infographics, video content, interactive assignments and project activities contribute not only to effective language acquisition, but also to maintaining student interest throughout the learning process.

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FOSTERING CREATIVE THINKING IN BIOLOGY LESSONS: MODERN APPROACHES AND PEDAGOGICAL STRATEGIES

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Abstract

In today's dynamic educational environment, fostering creative thinking is becoming a key goal across all disciplines. This article explores the unique potential of biology lessons to cultivate creativity in students. The discussion focuses on the importance of developing creative thinking for future professional success, outlines pedagogical strategies and tasks aimed at nurturing students' creative abilities, and highlights the relevance of a flexible, student-centered approach. The paper also emphasizes the role of biology as an interdisciplinary and experiment-driven subject, making it a fertile ground for creativity-enhancing methodologies. The insights provided may be useful for educators seeking to implement innovative teaching practices and foster a deeper engagement with the biological sciences.

Keywords: Biology education, creative thinking, student engagement, innovative teaching, heuristic learning, educational technology.

In the 21st century, society increasingly demands individuals who can think independently, approach problems creatively, and generate innovative solutions in diverse contexts. These qualities are especially relevant in the context of science education, where inquiry and exploration lie at the heart of learning. Among school subjects, biology holds particular promise for fostering such competencies. As a rapidly evolving discipline grounded in discovery, observation, and experimentation, biology lessons present educators with numerous opportunities to integrate creative thinking into the learning process.

This article aims to examine how creative thinking can be developed in the context of biology education. It analyzes theoretical foundations, pedagogical tasks, and instructional methods that encourage originality, imagination, and interdisciplinary thinking among students. Furthermore, it provides practical recommendations and examples of tasks that educators can use to stimulate creativity in the classroom [1].

Creative Thinking in the Context of Biology Education

Creative thinking is defined as the ability to approach problems and ideas in novel, original, and effective ways. Unlike routine or reproductive thinking, creativity involves flexibility, divergent thinking, and the capacity to establish non-obvious connections. In biology, where complex systems and dynamic phenomena abound, such thinking is essential—not only for mastering subject content but also for preparing

students for real-life challenges that demand innovation and adaptability [2].

Biology's inherent interdisciplinarity, combining elements of chemistry, physics, geography, and environmental science, naturally fosters opportunities for creative learning. Moreover, the subject's experimental nature allows for hands-on exploration, hypothesis testing, and the formulation of unique interpretations—elements that are central to the creative process [3].

Pedagogical Strategies for Developing Creative Thinking

To effectively cultivate creativity in biology lessons, teachers must rethink traditional approaches and implement pedagogical strategies aligned with the principles of student-centered learning [4]. Several techniques and conditions are particularly effective:

1. **Problem-Based Learning (PBL):** Introducing open-ended problems that require students to investigate, hypothesize, and devise unique solutions promotes both critical and creative thought. For instance, students might be asked to develop a strategy for conserving a local ecosystem or to design a model of an unknown species' life cycle based on limited data [5].

2. **Heuristic Methods:** Heuristic or discovery-based methods emphasize the importance of student-led exploration. In biology, this might involve planning and conducting simple experiments, analyzing unusual biological phenomena, or exploring cause-effect relationships. Such activities develop students' ability to pose questions, seek multiple solutions, and reflect on their learning.

3. **Project-Based Assignments:** Projects allow students to engage deeply with a topic while expressing their individuality. For example, a project like "Biological Breakthroughs of the 21st Century" could culminate in exhibitions, multimedia presentations, or creative models. These tasks integrate research, synthesis, and communication—core components of creative thinking [6].

4. **Use of Educational Technology:** Digital tools such as interactive simulations, virtual labs, and collaborative platforms enable students to explore biological processes in dynamic and personalized ways. Technology also supports the visualization of abstract concepts, encouraging experimentation and divergent thinking.

5. **Group Work and Brainstorming:** Collaborative activities nurture creativity by enabling the exchange of diverse perspectives and ideas. Group discussions, role-play scenarios, and team-based problem solving in biology help students refine their ideas, question assumptions, and co-create knowledge [7].

6. **Encouraging Independent Exploration:** Assignments that promote inquiry outside the classroom—such as observing local flora and fauna, keeping

scientific journals, or designing home-based experiments—extend creative engagement beyond school walls. These practices build autonomy, curiosity, and confidence in students' creative abilities.

Creating a Creative Learning Environment

For creativity to flourish, the classroom environment must support openness, experimentation, and emotional safety [8]. Teachers play a pivotal role in shaping this environment by:

- Valuing diverse ideas and responses;
- Encouraging questions rather than only answers;
- Allowing mistakes as part of the learning process;
- Providing flexible tasks with room for personalization;
- Using positive reinforcement to motivate risk-taking in thinking.

Such a climate fosters intrinsic motivation and helps students feel empowered to express novel ideas [9].

Challenges and Considerations

Despite its potential, implementing creative approaches in biology education is not without challenges. Teachers often face constraints such as standardized curricula, time limitations, and a lack of resources. Additionally, developing creativity requires ongoing teacher professional development and a shift in pedagogical mindset—from instruction to facilitation.

Another consideration is the need to adapt tasks to students' cognitive levels, backgrounds, and interests. For creativity to be nurtured effectively, tasks must strike a balance between challenge and accessibility, ensuring all students can engage meaningfully [10].

Creative thinking is a crucial competency in the modern world, and biology education offers fertile ground for its development. Through inquiry-based learning, interdisciplinary projects, and flexible pedagogical approaches, teachers can transform biology lessons into laboratories of innovation. The role of the educator is not merely to transmit knowledge but to inspire curiosity, foster imagination, and guide students in exploring the biological world in original and meaningful ways.

Ultimately, cultivating creativity in the biology classroom prepares students not only for academic success but also for thoughtful, adaptive participation in an ever-changing world.

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TEACHING METHODS FOR YOUNG ENGLISH TEACHERS IN UZBEKISTAN: TOWARD A MODERN, INTERACTIVE, AND CULTURALLY GROUNDED PEDAGOGY

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Abstract: In the context of Uzbekistan's ongoing educational reforms and its strategic orientation toward democratic development, the preparation and methodological support of young teachers play a vital role. This article explores effective teaching methods suitable for early-career educators, highlighting interactive approaches, game-based learning, and project-based methodologies as essential components for engaging modern students. It also considers the socio-cultural mission of education in Uzbekistan and reflects on how national values and global best practices can be integrated to enhance teaching quality.

Keywords: Young teachers, Uzbekistan, interactive teaching methods, project-based learning, game-based learning, pedagogical innovation, culturally responsive teaching, competency-based education, student engagement, educational reform

At the beginning of the 20th century, the Uzbek educator and reformist Abdullah Avloni famously stated, "Education for us is a matter of life or death, salvation or destruction, happiness or disaster." This idea remains profoundly relevant in present-day Uzbekistan, where nation-building is closely linked to the development of a forward-looking, intellectually capable, and morally sound generation. As the country aspires to join the ranks of developed and democratic states, the role of education—and by extension, the teachers who deliver it—is more critical than ever [1].

Young teachers today find themselves at the intersection of traditional educational values and innovative pedagogical demands. Their task is not only to impart academic knowledge but also to nurture students with high spiritual, moral, and civic consciousness. To fulfill this mission, young educators must be equipped with effective, modern teaching methodologies that foster student engagement, creativity, and critical thinking.

The Role of Interactive Methods in Modern Uzbek Classrooms

Interactive teaching methods have become a cornerstone of contemporary pedagogy. These approaches emphasize active student participation and meaningful engagement with lesson content. In contrast to passive memorization or unidirectional lectures, interactive methods turn the classroom into a dynamic environment where students are consistently involved in solving problems, discussing ideas, and reflecting

on their learning experiences [2].

For young teachers in Uzbekistan, adopting interactive teaching means not only applying specific techniques but also rethinking the structure and goals of each lesson. Lessons must be technologically designed, with careful attention to didactic strategies, student needs, and the learning objectives. This includes using group discussions, think-pair-share exercises, simulations, and question-answer formats to stimulate students' cognitive and communicative [3].

The following general didactic principles should guide every lesson:

- Clear and purposeful lesson planning;
- Integration of ideological, ethical, and civic values;
- Relevance to real-life applications;
- Use of diverse teaching aids and multimedia tools;
- Engagement of all students through differentiated tasks;
- Continuous feedback and reflection.

These principles are aligned with the long-standing Uzbek pedagogical heritage, which emphasizes holistic development and deep respect for knowledge [4].

Game-Based Learning and Simulation Techniques

Game-based learning provides an effective tool for enhancing motivation and participation among schoolchildren, especially in language and social science subjects. Role-playing games, simulations, and competitive tasks not only entertain but also educate, allowing students to apply their knowledge in creative, problem-solving contexts.

In the contemporary educational landscape of Uzbekistan, where there is an urgent need to bridge theoretical knowledge with real-world skills, **Project-Based Learning (PBL)** stands out as a particularly effective and forward-looking teaching method. This approach not only enhances academic learning but also cultivates essential 21st-century competencies such as critical thinking, collaboration, time management, and communication. For young teachers—many of whom are navigating their initial years in the profession—PBL offers a practical and flexible framework to make lessons more meaningful and student-centered [5].

What is Project-Based Learning?

PBL is a method in which students engage in extended inquiry, structured around complex, authentic questions or challenges, and work toward creating a tangible outcome. Unlike traditional rote-based education, where learners passively absorb facts, PBL empowers students to take ownership of their learning process. They explore topics in-depth, make decisions, analyze information, solve problems, and ultimately present their findings in a creative and public format.

In the context of Uzbekistan's national educational development goals, which emphasize independent thinking, active citizenship, and spiritual enrichment, PBL supports not only cognitive but also social and ethical growth. It aligns with the principles outlined in strategic documents such as the **National Program for Personnel Training** and the **Development Strategy of New Uzbekistan**, which call for learner-centered instruction and competence-based education [6].

Why Should Young Teachers Use PBL?

Young teachers often face the dual challenge of lacking classroom experience and seeking innovative ways to connect with the digital-native generation of learners. PBL addresses both these concerns:

- **Flexibility:** It allows teachers to adapt the topic and scope of the project based on student interest and ability.
- **Engagement:** Students are more likely to stay motivated when working on projects that have real-world significance and personal relevance.
- **Skill development:** Teachers can integrate academic content with practical skills such as public speaking, teamwork, and research techniques.
- **Language integration:** For foreign language teachers, projects naturally create a context for meaningful language use across listening, speaking, reading, and writing domains.

Implementation Tips for Young Teachers

1. **Start Small:** For beginners, it is advisable to start with mini-projects that span two to three lessons. As confidence and classroom management skills grow, more ambitious projects can be introduced [7].
2. **Set Clear Goals and Roles:** Students should understand what is expected from them and how the project will be assessed. Assigning roles (e.g., researcher, presenter, designer) helps maintain accountability within groups.
3. **Use Technology:** Online tools such as Canva, Google Docs, Padlet, or even smartphones can be incorporated to enhance the digital literacy component of the project [8].
4. **Connect to Curriculum Standards:** Projects should be aligned with the subject's learning objectives, ensuring that they supplement and reinforce the required knowledge and skills [9].
5. **Reflect and Evaluate:** After project completion, students should reflect on what they learned, what challenges they faced, and how they collaborated. Teachers should use rubrics to assess not only the final product but also the process, creativity, and teamwork.

Lessons as the Core of Pedagogical Practice

In Uzbekistan, the lesson remains the basic unit of instructional design. For young teachers, mastering the structure and methodology of effective lesson planning is fundamental. A well-designed lesson typically includes the following phases:

- Introduction and presentation of new material;
- Consolidation and reinforcement through practice;
- Application of knowledge via exercises or discussions;
- Assignment of meaningful homework tasks [10].

In this context, teaching is not a neutral act—it is a value-laden endeavor. Every lesson should reflect Uzbekistan's cultural identity, ethical heritage, and aspirations for peace, mutual respect, and international cooperation. Lessons that draw upon the rich pedagogical traditions of the Uzbek people can inspire students and give context to modern knowledge.

The future of Uzbekistan's education system lies in the hands of its young teachers. As the country progresses toward becoming a modern, democratic society, its classrooms must reflect both innovation and tradition. Interactive teaching methods, game-based learning, and project-oriented tasks offer effective tools for engaging students in meaningful learning experiences.

However, the success of these methods depends on the preparedness, creativity, and cultural awareness of teachers. Young educators must be empowered through continuous professional development, access to pedagogical resources, and mentorship. In doing so, they will not only teach content but shape the values, skills, and futures of the next generation of Uzbek citizens.

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**OROLBO'YI MINTAQASIDA EKOLOGIK VAZIYATNI
BARQARORLASHTIRISH, OROL DENGIZI QURISHI NATIJASIDA
YUZAGA KELGAN EKOLOGIK MUOMMOLARNING
SALBIY TA'SIRINI YUMSHATISH**

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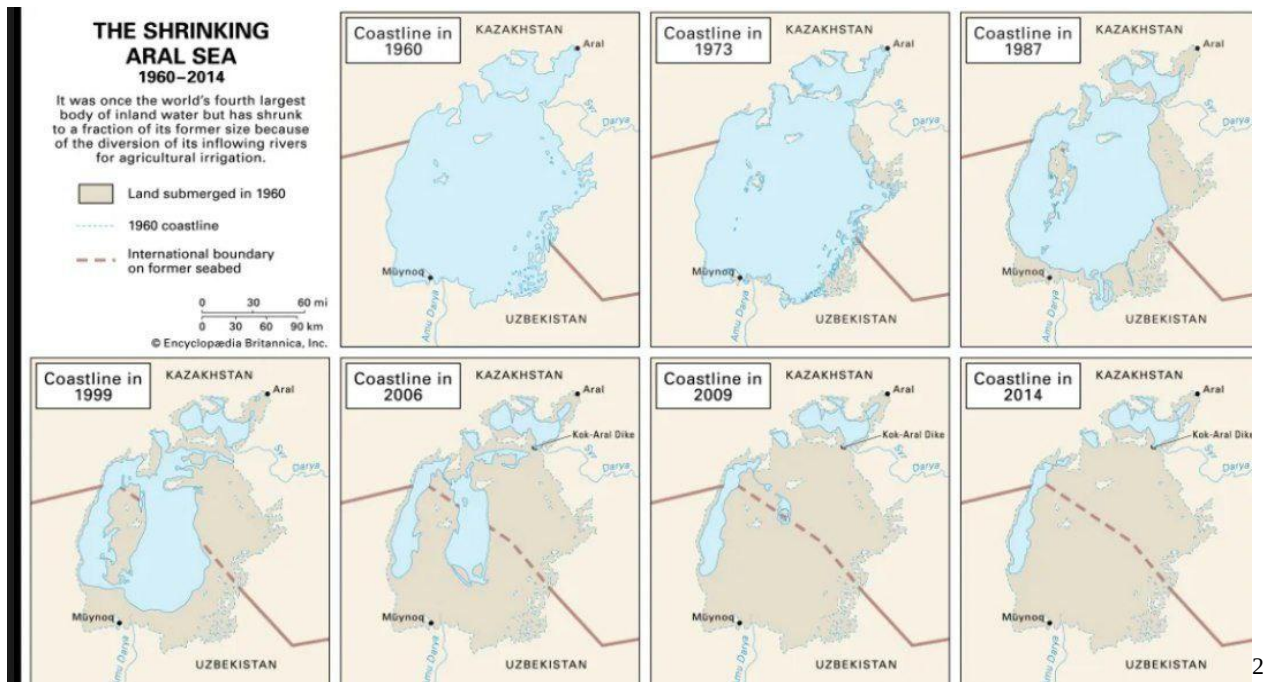
Annotatsiya: Ushbu maqolada Orolbo'yi mintaqasidagi ekologik vaziyatni barqarorlashtirish masalalari hamda Orol dengizining qurishi natijasida yuzaga kelgan ekologik muammolarning salbiy ta'sirini yumshatish yo'llari yoritilgan. Orol fojiasi tufayli mintaqada suv tanqisligi, tuproqning sho'rlanishi, biologik xilma-xillikning kamayishi, atmosfera ifloslanishi kabi dolzarb muammolar yuzaga kelgan. Mazkur maqolada ushbu ekologik inqirozning aholi salomatligi, iqtisodiyot va tabiiy muhitga ko'rsatgan ta'siri tahlil qilinadi. Shuningdek, xalqaro hamkorlik, yashil zonalarni barpo etish, ijtimoiy va iqtisodiy loyihalar orqali mintaqaning ekologik barqarorligini ta'minlash bo'yicha amalga oshirilayotgan chora-tadbirlar ko'rib chiqiladi.

Kalit so'zlar: Orol tarixi, orol fojiasi, ekologik muommolar, iqlim o'zgarishi, aholi o'rtasidagi kasalliklar, orol tiklash loyihalari, ekologik tiklash bo'yicha qonunchilik hujjatlari, „Kokorol“ loyihasi, BMT Taraqqiyot strategiyasi, Vazirlar Mahkamasi qarori, „Yashil qoplamalar“, USAID loyihasi, Tragdy of the common.

O'z davrida kattaligi bo'yicha 4o'rinni egallagan, boy tabiati bilan tanilgan va bugungi kunga kelib esa eng katta ekologik muommolardan biriga aylangan Orol dengizi aslida o'zi qanday ko'rinishga ega edi? Orol dengizi – O'rta osiyodagi eng katta dengiz hisoblangan. 1989-yilda havzasining maydoni 690 ming km², suvining hajmi 1000 km³, o'rtacha chuqurligi 16,5 m ni tashkil etgan. Orol dengizida suv sathi miqdori vaqti -vaqti bilan o'zgarib turgan. Sariqamish va O'zbo'y orqali Orol dengizi suvlari Kaspiy dengiziga quyilib turgan. Asosiy suv bilan esa Amudaryo va Sirdaryo ta'minlab turadi. 1960-yillargacha yiliga Amudaryo Orol dengiziga 38,6 km³, Sirdaryo esa 14,5 km³ suv olib borgan. Orol dengizida suv hajmi 1960-yillarda 68 ming km² tashkil qilgan.¹

¹ https://uz.m.wikipedia.org/wiki/Orol_dengizi

Orol dengizi shimolda Qozog‘iston va Qoraqalpog‘iston o‘rtasida joylashgan bo‘lib, bugungi kungacha 1500 dan ortiq orollarni o‘z ichiga olgan edi. Yillar davomida suv hajmi kamayib, ushbu ko‘rinishga kelib qolgan:



2

Orol dengizining “Orol sahro”siga aylanib qolishiga oid bir qator sabablar mavjud. Xususan, „Kun.uz“ saytining ma’lumotlariga qaraganda :³

infratuzilmalaridan noto‘g‘ri foydalanish: Sobiq Sovet tuzumi Orol dengizidagi suvdan iqtisodiy manfaat ko‘rish maqsadida ekologik muammolar kelib chiqishini inobatga olmagan holda foydalangan .1947-yildan boshlab Sirdaryoni Orolga quyilish joyida “Аралский порт”ini tashkil etilgan. 1960-yildan boshlab Sobiq Sovet Ittifoqi tomonidan irrigatsiya loyihasiga binoan , oroldagi suvlarni sug‘orish hamda cho‘l zonalariga tarqatish ishlari boshlandi. Kanallar, to‘g‘onlar va suv omborlari qurilishi avvallari Orol dengizini to‘ldirib turgan Amudaryo va Sirdaryodan katta miqdorda suv yo‘nalishlarini o‘zgartirdi.

Tabiiy iqlim o‘zgarishlari: Orol dengizining bugungi holatiga kelishiga inson faoliyati asosiy sabab bo‘lgan bo‘lsa-da, lekin tabiiy iqlim o‘zgarishlari ham o‘z ta’sirini o‘tkazgan. Mintaqa qurg‘oqchilik davrlarini boshdan kechirdi, bu daryolar oqimini yanada kamaytirdi.

Orol dengizida keskin suvning pastlashi hududda ko‘plab global muommolarni keltirib chiqardi. Xususan, aholi salomatligiga oid kasalliklar paydo

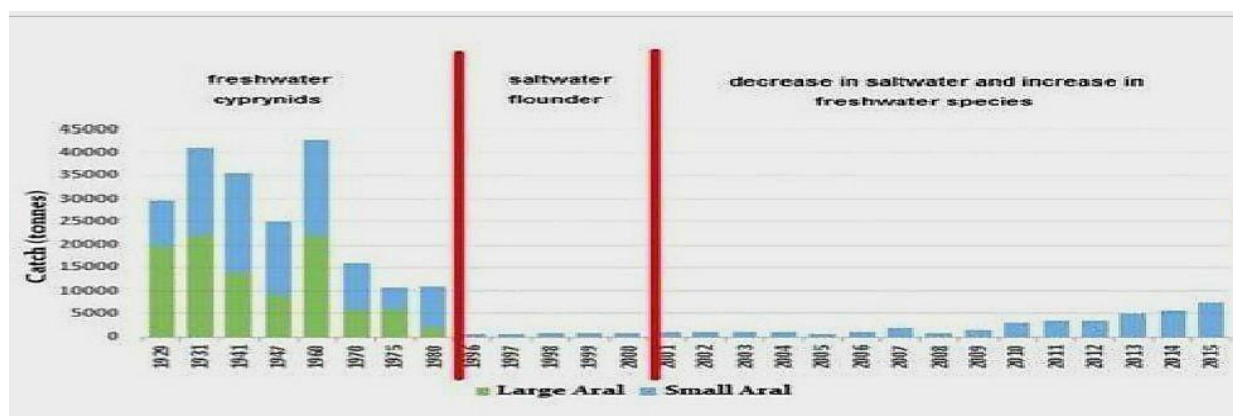
² <https://www.britannica.com/place/Aral-Sea>

³ <https://kun.uz/en/news/2024/08/01/aral-sea-tragedy-causes-impacts-and-possible-solutions>

bo'lishi, ishsizlik, iqtisodiy inqiroz, flora va fauna olamini barbod bo'lishi, iqlim o'zgarishi va atrof muhitning zararlanishi kabi holatlar ko'paydi. Aholi orasida astma, bronxit, o'pka saratoni, sil, kamqonlik kabi nafas yo'llari kasalliklarining keskin ko'payishiga olib keldi va hududda tug'ma nuqsonlar soni ortdi. 2002 yil yanvar oyida, Qoraqalpog'iston aholisining 80-90 foizida kamqonlik, Qozog'istonda esa 89 foiz aholi ovqat hazm qilish tizimi bilan bog'liq muammolarga, shuningdek, vazn va bo'yning qisqarishiga duchor bo'lgan. 2017-yilda dengiz tubi atrofidagi hududlarda o'lim darajasi 1000 tadan 60-100 tani tashkil etgan bo'lsa, poytaxt Toshkentning o'zida bu ko'rsatkich 1000 tadan 48 tani tashkil etgan. 1 yoshgacha bo'lgan bolalar o'rtasidagi o'lim har ming bolaga nisbatan 1980-yildagi 46,5 nafari 1986-yilda 72 nafarga yetdi. Hududda yashaydigan ayollarda kamqonlik, qorin tifi kasalligi 30 marta, yuqumli sariq kasalligi esa 7 martaga ko'paydi.

Orolning qurishi iqtisodiyotga ham o'z ta'sirini o'tkazmasdan qolmadi. Aholisining 80% ining asosiy qismi baliqchilik bilan shug'ullangan orol aholisi 1960-yillarda Rossiyaning asosiy eksport mahsulotining 1/6 qismi bilan ta'minlab turgan Orolbo'yida, yillik baliq ovlanishi 30-35 ming tonnani tashkil etgan.⁴ Amudaryo va Sirdaryo deltalaridagi unumdor yerlarida chorvachilik, parrandachilik va qishloq xo'jaligi mahsulotlarini yetishtirishda 100 mingdan ortiq aholi ish bilan band qilingan edi. Orolning keskin qurishi oqibatida baliqchilik inqirozga uchradi, bu soha vakillari esa ishsiz aholiga aylangan.

Flora va fauna olamida ham keskin muommolar yuzaga kela boshlagan. 1960-yilda Orol dengizida 38 turdagi baliq turlari mavjud bo'lib, 1980-yilda kuchli tuzlanish, suv sathining pastlashi oqibatida sazan, sudak, xo'randa va bekire turdagi baliq turlari yo'q bo'lib ketdi. 2000-yilga kelib esa kuchli kimyoviy dorilar va sho'rlanish natijasida barcha turdagi baliq turlari yo'q bo'lib ketgan.



Ushbu jadvalda 2017-yilgi ma'lumotlarga asosan, Orol dengizidagi suv sathi va sho'rlanish darajasi o'zgarganda tijorat va baliq ovlash tuzilishi keltirilgan.

⁴ <https://www.un.int/uzbekistan/news/>

Orol dengizining qurishi oqibatida jiddiy iqlim o'zgarishi kuzatildi. 2018-yilda O'zbekiston va Qozog'iston olimlari tomonidan olib borilgan tadqiqot natijalari shuni ko'rsatdiki, Orol dengizida bug'lanishining kamayishi atmosfera namligining pasayishiga va natijada yog'ingarchilikning qisqarishiga sabab bo'lgan.⁵ Suv manbalarining ifloslanishi orqali 2019-yilda O'zbekiston Ekologiya va atrof-muhitni muhofaza qilish davlat qo'mitasi tomonidan o'tkazilgan tekshiruvlarga ko'ra, Amudaryo suvidagi tuz miqdori 1960-yillarga nisbatan 2-3 barobar ortgan. BMTning Atrof-muhit dasturi (UNEP) ma'lumotlariga ko'ra, Orol dengizining tubida 5 million gektardan ortiq qumli hudud – "Orolqum" cho'li paydo bo'lgan. O'zbekiston Gidrometeorologiya xizmati esa Orolbo'yida yozgi harorat oldin 35-38°C atrofida bo'lgan bo'lsa, hozir 45-50°C gacha ko'tarilganligi haqida ma'lumot berishgan. Qishki harorat esa oldingi davrga nisbatan 10-12°C sovuqlashgan. Har yili Orol dengizining qurigan tubidan 75 million tonnadan ortiq chang va tuz atmosferaga ko'tariladi.⁶

Orolni tiklash uni oldingi holatiga qaytarish bugungi kunning eng global muommolaridan biri hisoblanadi. Aynan Orolni hozirgi holatini saqlab qolish bo'yicha O'zbekiston qonunchiligida bir nechta hujjatlar ishlab chiqildi. Xususan, Vazirlar Mahkamasining tomonidan 2022-yil 18-yanvardagi 31-son „Orol dengizining suvi qurigan tubida va Orolbo'yi hududlarida "yashil qoplamalar" — himoya o'rmonzorlarini barpo etishning qo'shimcha chora-tadbirlari to'g'risida" gi qaror qabul qilindi. Qarorda 2022–2026-yillar davomida ushbu hududlarda o'rmonzorlar yaratish hajmlari va cho'l o'simliklari urug'larini tayyorlash rejalari belgilangan. 2022-yil 25-yanvar 41-son, „Orolbo'yi mintaqasini ekologik innovatsiyalar va texnologiyalar hududiga aylantirish bo'yicha qo'shimcha chora-tadbirlar to'g'risida,„ qarori asosida Orolbo'yi mintaqasini barqaror rivojlantirishga yo'naltirilgan loyihalar ro'yxati keltirildi. Loyiha asosida Ekologik barqarorlik hamda ekologik innovatsiyalar va texnologiyalarni jalb qilish, Orolbo'yi mintaqasini iqtisodiy rivojlantirish choralari, orolbo'yi mintaqasini ijtimoiy rivojlantirish choralari ishlab chiqildi. Qaror asosida 2022-2026yilga mo'ljallangan umumiy miqdori 210270,0 bo'lgan mablag' ajratildi. O'zbekiston Respublikasi Prezidentining 2023-yil 11-sentabrdagi PF-158-son Farmon bilan qabul qilingan, „O'zbekiston 2030-strategiyasi" ning 69-ustuvor vazifasi asosida: orolbo'yi mintaqasidagi o'rmonzorlarni 2,3mln gektarga yetkazish, 600ming gektar yashil maydonlarni barpo etish, „Yashil iqlim" va global ekologik jamg'armalarning biologik xilma-xillik, iqlim o'zgarishi va tuproq yemirilishi asosida 300million dollar qiymatidagi loyihalar keltirildi. Orolning qurigan 363ming gektar hududiga saksovul ekildi. Bu ishga 1ming 560 kishi saksovul urug'larini ekishga faol qatnashdi. Bundan tashqari Orol hududida 40ta artezion qurildi bu esa chorvachilikni tiklashga oz bo'lsada yordam berdi.

⁵ <https://daryo.uz/k/2018/01/09/orol-dengizining-qurishidan-atmosferaga-kotarilayotgan-chang-tozonlarni-toxtatish-yoli-topildi>

⁶ <https://kun.uz/66041427>

Orol muommosi faqat Markaziy Osiyo mintaqasi davlatlarining muommosi bo'libgina qolmasdan, butunjahon muommosidir. Rasmiy ma'lumotlarga qaraganda oroldagi tuzlarning uchishi natijasida Antarktida hududida ham topilgan. Bu esa muzlarning erishiga olib kelishi aytilgan. BMT Taraqqiyot Dasturi (UNDP) tomonidan „Orol dengizi Trast fondi“ (Aral Sea Trust Fund) tashkil etilib, loyiha asosida 293 mingdan ortiq insonlar toza ichimlik suvi bilan ta'minlandi, kasalliklar miqdori pastladi, ishsizlik oldi olingan. 2021-yilda BMT Bosh assambleyasida O'zbekiston tashabbusi bilan O'rolbo'yi mintaqasini „Ekologik innovatsiyalar va texnologiyalar hududi“ deb e'lon qilindi. Bu rezolutsiya mintaqada ekologik muommalarni hal etish uchun ilmiy tadqiqotlar va texnologik yechimlarni rivojlantirishga qaratildi.⁷

1994-yil 26-mart kuni Qozog'istonning Kzyl-Orda shahrida „Orolni qutqarish xalqaro Jamg'armasi“ Qozog'iston, O'zbekiston, Tojikiston, Qirg'iziston va Turkmaniston davlatlarining o'zaro hamkorlik o'rnatdi. Hamkorlik ishlari natija bermagandan so'ng parchalanib ketdi. Keyinchalik esa Qozog'iston tomonidan Orolni asrash va shimoliy qismini qayta tiklash bo'yicha „Asr loyihasi“ amalga oshirildi. 2001-yilda Qozog'iston hukumati va Jahon banki o'rtasida kelishuv imzolandi. 2005-yilda Qozog'iston hukumati Jahon banki bilan hamkorlikda 13 kilometrlik, balandligi 6 metr bo'lgan „Ko'korol“ to'g'oni qurib bitkazildi. Ushbu loyiha uchun mablag'ni Jahon banki ajratdi. Manbalarda aniq summa mavjud emas, taxminan 85 million Aqsh dollari atrofida bo'lganligi aytilgan. „Asr loyihasi“ asosida dengizdagi suv hajmi 47% oshib, 22 milliard kub metrdan yuqoriladi. Suvning sho'rlanishi qariyb 4 barobarga kamaydi va shimoliy qismda yillik baliq ovlash 8 ming tonnaga yetdi. Ushbu to'g'on Shimoliy Orol dengizi janubiy qismidan ajratib suv sathini barqarorlashtirdi.⁸ Eng asosiysi esa shimoliy qism to'liq saqlab qola olindi.

Orol muommosini „Tragdy of the common“ (namunasi sifatida ko'rishimiz mumkin. Sababi, ushbu muommoning asosi ham shudir. „Tragdy of the common“ tushunchasi inson o'z ehtiyojlaridan ortiq narsani olish evaziga o'sh resursni tugatish tushiniladi. Bu tushuncha 1968-yil Garrett Hardin tomonidan ilgari surilgan. Orol muommosi Qozog'iston, O'zbekiston, Turkmaniston, Tojikiston, Qirg'iziston davlatlarining suv manbasidan noto'g'ri foydalanishi natijasida paydo bo'ldi. Ya'ni har bir davlat Orol dan o'z ehtiyojiga ko'ra foydalandi va qaytarib bo'lmas suv resursini tugashiga sabab bo'ldi.

Yuqoridagi ma'lumotlarga tayangan holda Orol dengizini tiklash va asrab qolish bo'yicha o'z takliflarimizni beramiz. Orolbo'yini saqlab qolish faqatgina hamkorlik asosida amalga oshirilishi mumkin. Sababi bu butunjahon mamlakatlari muommosidir. Agarda davlatlar ittifoq asosida birlashmasdan e'tibor bermasa jiddiy oqibatlar kelib chiqadi. Davlatlar o'zaro hamkorlik aloqalarini o'rnatib, o'zaro nazorat organlarini

⁷ Mptf.undp.org

⁸ <https://www.xabar.uz/uz/jamiyat/orol-dengizining-suvi-kopaydi-qozogiston-ek>

tuzilsa natijaga erishish mumkin. Sababi amalga oshirilayotgan islohotlarning ko'pchiligini hozirgi ahvoli qanday ekanligi e'tibordan chetda qolmoqda. Ya'ni mablag' ajratildi loyiha amalga oshirildi , ammo hozir qanchalik darajada loyiha maqsadga erishdi shunisi barchaga sir bo'lib qolmoqda. Keyingisi, Amudaryo va Sirdaryo suvlari yo'naltirilgan xo'jaliklarni qattiq nazoratga olish lozim . Sababi suvni e'tiborsizlik bilan yo'naltirish uni befoyda yerlarga ketishiga sabab bo'ladi. Asosiy suv yo'nalishlarini nazorat va tartibga solsak, o'zaro hamkorlik bilan orol asrab qolinishi mumkin.

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TOVARLARNI VAQTINCHA OLIB KIRISH BOJXONA REJIMIGA RASMIYLASHTIRISHDA BOJXONA TO'LOVLARI

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Annotatsiya: Ushbu maqolada bojxona organlarida tovarlarni vaqtincha olib kirish bojxona rejimiga rasmiylashtirish tartibotlari va undiriladigan bojxona to'lovlari tahlil qilinadi. Shuningdek, mavjud muammolar va ularning yechimlari bo'yicha takliflar ilgari suriladi.

Kalit so'zlar: bojxona rejimi, tashqi iqtisodiy faoliyat ishtirokchilari, bojxona, bojxona nazorati, davriy to'lov, identifikatsiya.

ТАМОЖЕННЫЕ ПЛАТЕЖИ ПРИ ОФОРМЛЕНИИ ТОВАРОВ ПОД ТАМОЖЕННЫЙ РЕЖИМ ВРЕМЕННОГО ВВОЗА

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Аннотация: В данной статье анализируются процедуры оформления товаров на таможенный режим временного ввоза в таможенных органах, а также рассматриваются соответствующие таможенные платежи, взимаемые при применении данного режима. Кроме того, приводится анализ актуальных проблем в сфере временного ввоза и предлагаются пути их решения.

Ключевые слова: таможенный режим, участники внешнеэкономической деятельности, таможня, Таможенный контроль, периодическая оплата, идентификация.

THE CUSTOMS PAYMENTS DURING THE CLEARANCE OF GOODS UNDER THE TEMPORARY IMPORTATION CUSTOMS REGIME

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Abstract: "This article analyzes the procedures for customs clearance of goods under the temporary importation customs regime by customs authorities, as well as the applicable customs payments levied within the framework of this regime. In addition, the article provides an analysis of current issues related to temporary importation and proposes possible solutions.

Keywords: customs regime, participants in foreign economic activity, Customs, Customs Control, periodic payment, identification.

Tovar va transport vositalarining davlat bojxona chegaralari orqali erkin harakatlanishi zamonaviy iqtisodiy tizimning ajralmas qismi hisoblanadi. Shu nuqtayi nazardan, vaqtinchalik olib kirish bojxona rejimi davlat iqtisodiy xavfsizligini ta'minlash, bojxona tartibotlarini soddalashtirish va xalqaro hamkorlikni mustahkamlashda muhim o'rin tutadi.

Vaqtincha olib kirish bojxona rejimi mamlakatga xorijiy tovarlarni muayyan muddatga olib kirish imkonini beruvchi bojxona rejimlaridan biri hisoblanadi. Ushbu rejim xalqaro miqyosda 1990-yil 26-iyunda Istanbulda qabul qilingan "Vaqtincha olib kirish to'g'risidagi konvensiya" bilan tartibga solinadi¹.

O'zbekiston Respublikasi ushbu konvensiyaga 2020-yil 24-aprelda qo'shilgan² bo'lib, bu xalqaro bojxona amaliyotlariga moslashish va milliy qonunchilikni xalqaro standartlarga muvofiqlashtirish yo'lidagi muhim qadam bo'ldi. Shu asosda, O'zbekiston Respublikasi Adliya vazirligining 2020-yil 30-iyundagi "Vaqtincha olib kirish to'g'risidagi konvensiyani qo'llash tartibi to'g'risidagi" 3264-sonli nizom bilan tasdiqlandi³. Mazkur nizom O'zbekiston Respublikasi bojxona chegarasidan tovarlarni bojxona nazorati va bojxona rasmiylashtiruvidan o'tkazishda Vaqtincha olib kirish to'g'risidagi Konvensiyani qo'llash tartibini belgilaydi.

Shuningdek, O'zbekiston Respublikasi Prezidentining 2025-yil 25-martdagi

¹ https://www.wcoomd.org/en/about-us/legal-instruments/~/_media/2D53E23AA1A64EF68B9AC708C6281DC8.ashx

² O'zbekiston Respublikasi Prezidentining 24.04.2020-yildagi PQ-4694-son Qarori, <https://www.lex.uz/uz/docs/-4797920>

³ O'zbekiston Respublikasi Adliya vazirligining 30.06.2020-yildagi 3264-son Nizomi, <https://www.lex.uz/uz/docs/-4912261>

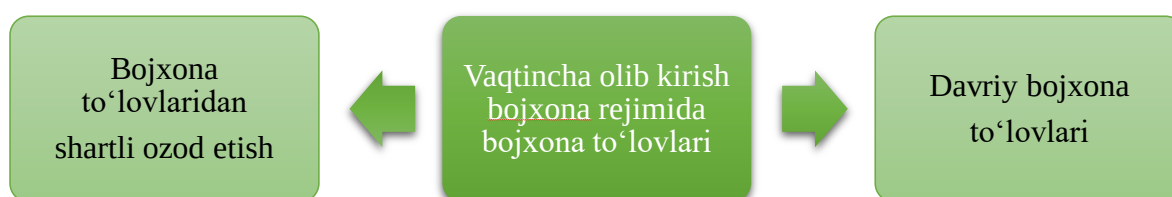
“Davlat bojxona xizmati organlarining faoliyati samaradorligini oshirish bo'yicha chora-tadbirlar to'g'risida”gi PF-57-son Farmoni⁴ bilan Bojxona ma'muriyatchiligining shaffoflik va ishonchlilik tamoyiliga asoslangan sifat jihatidan yangi tizimini yaratish, bojxona sohasida huquqbuzarliklarning oldini olish maqsadida Vaqtincha olib kirishda bojxona bojlari va soliqlar to'lashdan shartli ozod etiladigan ayrim tovarlar ro'yxati, imtiyoz berish muddatlari va shartlarini qaytadan ko'rib chiqish topshiriqlari berilgan.

Shundan kelib chiqib, O'zbekiston Respublikasida vaqtincha olib kirish bojxona rejimining rasmiylashtirish tartiblari va amaliyotdagi o'ziga xos jihatlari tahlil qilib, mavjud muammolar va ularning yechimlari bo'yicha o'rganildi va takliflar ishlab chiqildi.

O'zbekiston Respublikasining Bojxona kodeksiga muvofiq, bojxona rejimlarining 16 turi mavjud bo'lib, bulardan biri vaqtincha olib kirish bojxona rejimidir. Vaqtincha olib kirish bojxona rejimi shunday rejimki, bunda tovar bojxona hududiga muayyan muddatga olib kiriladi va bojxona to'lovlaridan shartli ozod etilgan yoki davriy bojxona to'lovlari to'langan hamda iqtisodiy siyosat choralari qo'llanilmagan holda undan vaqtincha foydalaniladi. Vaqtincha olib kirish muddati tovar vaqtincha olib kirish bojxona rejimiga joylashtirilgan sanadan e'tiboran ikki yilni tashkil etadi.

2024-yilda vaqtincha olib kirish bojxona rejimiga jami 3046 ta bojxona yuk deklaratsiyasi rasmiylashtirilib, 242,8 mlrd so'm bojxona to'lovlari undirilgan.

Vaqtincha olib kirish bojxona rejimiga tovarlarni rasmiylashtirishda bojxona to'lovlaridan shartli ozod etiladi yoki davriy bojxona to'lovlari undiriladi.



1-rasm. Vaqtincha olib kirish bojxona rejimida bojxona to'lovlari qo'llanilishi⁵

Vaqtincha olib kirilayotgan ayrim tovarlarga nisbatan bojxona bojlari va soliqlar to'lashdan shartli ozod etish qo'llaniladi. Bunday tovarlarning ro'yxati va ozod etish shartlari, shuningdek vaqtincha olib kirilgan tovarlarga nisbatan bojxona bojlari va soliqlar to'lash bo'yicha imtiyozlarning amal qilish muddatlari O'zbekiston Respublikasi Vazirlar Mahkamasi tomonidan belgilanadi.

Davriy bojxona to'lovlarini to'lagan holda tovarlarni vaqtincha olib kirishda,

⁴ O'zbekiston Respublikasi Prezidentining 25.03.2025-yildagi PF-57-son Farmoni, <https://www.lex.uz/uz/docs/-7451997>

⁵ Bojxona kodeks talablari asosida muallif ishlanmasi

tovarlar vaqtincha olib kirish bojxona rejimida turgan har bir to'liq va to'liq bo'lmagan kalendar oy uchun, ushbu tovarlar vaqtincha olib kirish bojxona rejimiga joylashtirilgan kunda import bojxona rejimiga joylashtirilganda to'lanishi lozim bo'lgan bojxona bojlari va soliqlar summasining besh foizi miqdorida chet el valyutasida hisoblab chiqariladi.

Shundan kelib chiqib, davriy bojxona to'lovlarini hisoblab chiqarish uchun quyidagi formulani hosil qilamiz:

$$DT_1 = \frac{(B + Q + A) \cdot 5\%}{K_{con}}$$

Bu yerda:

DT_1 – shartnoma valyutasida bir oylik davriy to'lov;

B - hisoblangan import bojxona boji summasi;

Q - hisoblangan qo'shilgan qiymat solig'i summasi;

A - hisoblangan aksiz solig'i summasi;

K_{con} – shartnomaning valyuta kursi.

Bojxona rasmiylashtiruvi uchun bojxona yig'imi bojxona yuk deklaratsiyasi rasmiylashtirilayotgan bir vaqtning o'zida undiriladi.

Shundan so'ng, davriy to'lov to'lanadigan kuni O'zbekiston Respublikasi Markaziy banki tomonidan belgilangan valyutalarning rasmiy ayirboshlash kursi bo'yicha O'zbekiston Respublikasining milliy valyutasida to'lanadi va O'zbekiston Respublikasining Davlat budjetiga o'tkaziladi. Davriy bojxona to'lovlarini hisoblashda tovar vaqtincha olib kirish bojxona rejimiga joylashtirilgan kuni amalda bo'lgan bojxona to'lovlari stavkalari qo'llaniladi.

Shartnoma valyutasida jami davriy bojxona to'lovlarini hisoblashda quyidagi formuladan foydalanmiz:

$$DT_{jami} = DT_1 \cdot O_s$$

Bu yerda:

DT_{jami} – shartnoma valyutasida jami davriy to'lov;

DT_1 – shartnoma valyutasida bir oylik davriy to'lov;

O_s - tovarni vaqtincha olib kirilgan to'liq va to'liq bo'lmagan oylar soni.

Davriy bojxona to'lovlarini to'lab tovarni vaqtincha olib kirish bojxona rejimiga joylashtirayotgan shaxs quyidagi huquqlarga ega:

- to'lanishi lozim bo'lgan bojxona to'lovlarining umumiy summasini to'lash;
- tegishli davr boshlanguniga qadar davriy bojxona to'lovlarini har oyda yoxud yilning har choragida to'lash.

To'lanadigan davriy bojxona to'lovlarining umumiy summasi tovar vaqtincha olib kirish bojxona rejimiga rasmiylashtirilgan kuni erkin muomalaga chiqarish (import) bojxona rejimiga joylashtirilgan taqdirda to'lanishi lozim bo'lgan, chet el

valyutasida hisoblab chiqarilgan bojxona to'lovlarining summasidan oshmasligi lozim.

Hozirgi kunda amaliyotda ayrim tovarlar vaqtincha olib kirish bojxona rejimi rasmiylashtirilib, amal qilish muddati o'tgan holda, yakuniy bojxona rejimiga rasmiylashtirilmasdan nazoratda qolish holatlari, davriy to'lovlarini vaqtida to'lamaslik kabi holatlari mavjud.

Yuqoridagilardan kelib chiqib, quyidagi takliflarni ilgari surish maqsadga muvofiq deb hisoblaymiz:

- vaqtincha olib kirilgan tovarlar bo'yicha barcha jarayonlarni o'z ichiga oluvchi avtomatlashtirilgan axborot tizimi ishlab chiqish va ushbu tovarlar rasmiylashtiruvini to'liq raqamlashtirish, inson omiliga bog'liq xatoliklarni kamaytirish;

- amal qilish muddati tugashidan oldin vakolatli shaxsni va bojxona xodimini avtomatik ogohlantirish tizimi joriy qilish;

- Davriy bojxona to'lovlarini to'langan tovarni import bojxona rejimiga joylashtirilgan taqdirda vaqtinchalik olib kirishning butun davrida davriy to'langan import bojxona bojlari, soliqlar qiymatidan foizlar to'lash taklifi beriladi;

- davriy bojxona to'lovlarini avtomatik undirish mexanizmini joriy qilish, ya'ni undirish muddati kelganda, manfaatdor shaxsning shaxsiy hisobvarag'idan kerakli summani avtomatik ravishda yechib olish. Agar to'lovchining hisobida yetarli mablag' bo'lmasa, dastur tomonidan avtomatik ravishda qarzdorlikni belgilangan muddatda to'lash haqida ogohlantiruvchi elektron xabarnoma yuborilishi shart.

Xulosa qilib mazkur rejimni yanada takomillashtirish uchun normativ-huquqiy bazani kuchaytirish, raqamlashtirish jarayonlarini jadallashtirish hamda tashqi iqtisodiy faoliyat ishtirokchilariga qulaylik yaratish, mamlakat iqtisodiy xavfsizligini ta'minlashda muhim rol o'ynaydi.

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ЗАРУБЕЖНЫЙ ОПЫТ УСПЕШНОГО РЕГИОНАЛЬНОГО ЭКОНОМИЧЕСКОГО СОТРУДНИЧЕСТВА: НА ПРИМЕРЕ АСЕАН

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АННОТАЦИЯ

В статье представлен комплексный анализ опыта Ассоциации государств Юго-Восточной Азии (АСЕАН) как примера успешного регионального экономического сотрудничества. Исследуются исторические предпосылки создания организации, этапы развития, ключевые механизмы интеграции, а также основные достижения и проблемы. Особое внимание уделяется экономическим, политическим и институциональным факторам, обеспечившим устойчивое развитие АСЕАН. Выводы статьи направлены на выявление уроков и рекомендаций, которые могут быть применены в других регионах и странах для повышения эффективности регионального сотрудничества.

Ключевые слова: АСЕАН, региональная экономическая интеграция, зона свободной торговли, АФТА, ВРЭП, экономическое сотрудничество, Юго-Восточная Азия, диалоговое партнерство, глобализация, конкурентоспособность, торгово-экономические связи, центральная роль АСЕАН, инвестиции, устойчивое развитие, экономический рост.

ABSTRACT

The article provides a comprehensive analysis of the experience of the Association of Southeast Asian Nations (ASEAN) as an example of successful regional economic cooperation. It examines the historical background of the organization's establishment, stages of development, key integration mechanisms, as well as major achievements and challenges. Special attention is given to the economic, political, and institutional factors that have ensured ASEAN's sustainable development. The article's conclusions aim to identify lessons and recommendations that can be applied in other regions and countries to enhance the effectiveness of regional cooperation.

Keywords: ASEAN, regional economic integration, free trade area, AFTA, RCEP, economic cooperation, Southeast Asia, dialogue partnership, globalization, competitiveness, trade-economic relations, ASEAN's central role, investment, sustainable development, economic growth.

Введение

Региональное экономическое сотрудничество в современных условиях глобализации становится важнейшим инструментом повышения конкурентоспособности стран и устойчивого развития. В условиях

экономической взаимозависимости и глобальных вызовов интеграционные процессы способствуют расширению рынков, привлечению инвестиций, развитию производственных цепочек и обмену технологиями. В этом контексте опыт Ассоциации государств Юго-Восточной Азии (АСЕАН), объединяющей десять стран с разным уровнем экономического развития, становится особенно значимым.

Цель статьи – всесторонне проанализировать зарубежный опыт регионального сотрудничества на примере АСЕАН, выявить ключевые механизмы интеграции, оценить достижения и существующие вызовы, а также определить возможности адаптации успешных практик в других регионах.

1. Исторические предпосылки и этапы формирования АСЕАН

1.1 Предпосылки создания

АСЕАН была учреждена в 1967 году пятью государствами: Индонезией, Малайзией, Филиппинами, Сингапуром и Таиландом. Изначально организация создавалась как инструмент укрепления политической стабильности и безопасности в регионе, который был тогда подвержен конфликтам и идеологическим противостояниям. Однако уже с первых лет существования акцент постепенно сместился на экономическое сотрудничество и интеграцию.

1.2 Этапы развития

1967–1980 гг. — этап формирования и консолидации.

Основные усилия были направлены на выстраивание диалога, устранение политических противоречий и создание основ для совместного экономического развития.

1980–1990 гг. — расширение экономического сотрудничества.

Начался процесс либерализации торговли и постепенного снижения тарифных барьеров. Было подписано соглашение о зоне свободной торговли.

1992 г. — создание зоны свободной торговли АСЕАН (АФТА).

Одним из ключевых шагов стал запуск АФТА, направленный на снижение таможенных тарифов до 0-5% и упрощение процедур торговли между странами.

2007 г. — расширение АСЕАН до десяти членов.

К первоначальным пяти странам присоединились Вьетнам, Лаос, Мьянма, Камбоджа и Бруней, что расширило территорию и потенциал организации.

2015 г. — создание АСЕАН Экономического Сообщества (АЕС).

Целью стало формирование единого рынка и производственной базы, объединяющей товары, услуги, инвестиции, капитал и рабочую силу.

2. Основные механизмы регионального сотрудничества в АСЕАН

2.1 Консенсусный принцип принятия решений

АСЕАН работает на основе консенсуса, что обеспечивает уважение интересов всех членов, минимизацию конфликтов и поддержку стабильности в

регионе. Однако такой подход иногда замедляет процесс принятия решений.

2.2 Пошаговая либерализация торговли и интеграция

Переход к свободной торговле и интеграции происходил постепенно, что позволило странам адаптироваться и минимизировать негативные последствия. Введение AFTA сопровождалось снижением тарифов и гармонизацией торговых стандартов.

2.3 Институциональная структура

АСЕАН имеет развитую институциональную сеть — саммит глав государств, министров иностранных дел, экономические и специализированные комитеты, а также секретариат в Джакарте. Это обеспечивает координацию и контроль за выполнением решений.

2.4 Внешнеэкономическое сотрудничество

АСЕАН активно развивает партнерские отношения с крупными экономическими блоками — Китаем, Японией, Южной Кореей, ЕС, Индией и США. Многосторонние соглашения расширяют возможности торговли и инвестиций, укрепляют экономическую устойчивость региона.

3. Экономические достижения АСЕАН

3.1 Увеличение объемов взаимной торговли

За последние три десятилетия товарооборот внутри АСЕАН вырос в несколько раз. Снижение торговых барьеров стимулировало обмен товарами и услугами, что создало предпосылки для формирования региональных производственных цепочек.

3.2 Привлечение прямых иностранных инвестиций (ПИИ)

Регион стал привлекательным для ПИИ благодаря интеграционным процессам и устойчивому росту экономики. Инвестиции способствовали модернизации производств, развитию инфраструктуры и росту занятости.

3.3 Создание единого рынка труда и капитала

Соглашения о свободном движении рабочей силы, особенно квалифицированных специалистов, позволили странам оптимизировать использование человеческих ресурсов. Это укрепляет экономический потенциал региона.

3.4 Социально-экономическое развитие

Экономический рост в рамках АСЕАН сопровождался снижением уровня бедности, ростом среднего класса и улучшением уровня жизни населения. Усиление экономического сотрудничества также поддержало развитие малых и средних предприятий.

4. Вызовы и ограничения интеграционного процесса

4.1 Различия в уровне развития стран-участников

Внутренние экономические и социальные различия, разница в

инфраструктуре и законодательстве создают сложности для гармонизации и выравнивания экономических условий.

4.2 Политическая неоднородность

АСЕАН объединяет страны с разными политическими системами и уровнями демократизации, что иногда затрудняет принятие общих решений.

4.3 Ограничения институционального потенциала

Несмотря на развитую институциональную структуру, решения АСЕАН носят рекомендательный характер и не всегда подкреплены обязательствами, что ограничивает эффективность интеграции.

4.4 Влияние глобальных экономических факторов

Глобальные кризисы, торговые войны и пандемии оказывают серьезное влияние на экономику региона и требуют согласованных ответных мер.

5. Уроки и рекомендации для других регионов

Опыт АСЕАН подтверждает важность следующих факторов для успешного регионального экономического сотрудничества:

Политическая воля и доверие между участниками.

Без взаимного уважения и согласия интеграция невозможна.

Гибкий и поэтапный подход.

Постепенное снижение барьеров позволяет адаптироваться и минимизировать риски.

Развитие институциональной инфраструктуры.

Наличие координационных органов способствует мониторингу и реализации инициатив.

Активное внешнее сотрудничество.

Партнерство с внешними игроками расширяет возможности и снижает риски.

Учет различий и поддержка менее развитых членов.

Необходимо внедрять механизмы выравнивания и помощи.

Заключение

АСЕАН является успешным примером регионального экономического сотрудничества, достигшим значительных результатов в условиях многообразия и сложных внешних условий. Организация демонстрирует, что устойчивое развитие возможно при сочетании политической стабильности, экономической либерализации, институциональной поддержки и активного внешнеэкономического взаимодействия. Опыт АСЕАН может служить ценным ориентиром для других регионов и стран, стремящихся к интеграции и устойчивому развитию в условиях глобализации.

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READING STRATEGIES FOR EFL LEARNERS: HELPING STUDENTS BECOME BETTER READERS

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Abstract. Reading is about understanding meaning, guessing unfamiliar words, and staying motivated. This article explores effective reading strategies that help learners improve comprehension, build vocabulary, and develop confidence. Using a mix of approaches based on learner needs can turn reading into a rewarding experience.

Keywords. EFL reading, comprehension strategies, vocabulary, metacognition, learner autonomy, reading practice

Introduction

For many EFL learners, reading English feels like climbing a hill—steep, slow, and sometimes discouraging. That is because reading in a new language involves more than just knowing letters. Reading in a second language is a multifaceted cognitive process that extends beyond mere decoding of letters. It encompasses the integration of prior knowledge, inference-making, and the application of various strategies to construct meaning from the text. It also requires understanding sentence structure, figuring out unknown words, and connecting ideas. So how can we make this process easier and more effective?

The answer lies in using **reading strategies**—specific tools learners can use before, during, and after reading to help them understand better. When students are taught how to read strategically, they often feel more confident and perform better. As a linguist Anderson said in his book “Individual Differences in Strategy Use in Second Language Reading and Testing(1991)”:

“Strategic reading is not only a matter of knowing what strategy to use, but also the reader must know how to use a strategy successfully and orchestrate its use with other strategies.”

So what Are Reading Strategies?

Reading strategies are ways of approaching a text that help make meaning clearer. Some are used to **get the main idea**, some to **remember details**, and others to **check understanding**.

Let’s look at a few types:

1. Before Reading: Preparing the Mind

Good readers do not just dive into a text. They first try to understand what it is about.

Predicting: Looking at the title or images and guessing the topic. Engaging in

prediction activates learners' prior knowledge and sets a purpose for reading, which can enhance comprehension and engagement with the text.

Setting a purpose: Asking, “Why am I reading this?” helps focus attention.

2. During Reading: Staying Engaged

Guessing unknown words from context: Instead of running to the dictionary, students learn to use nearby words for clues. Contextual guessing, or lexical inferencing, is a widely used strategy among EFL learners for deducing the meanings of unfamiliar words. Studies have shown that this approach not only aids in vocabulary acquisition but also improves overall reading comprehension.

Highlighting or underlining key ideas: This keeps attention active. Highlighting key ideas serves as a visual aid that helps learners focus on essential information, facilitating better retention and understanding of the text's main concepts.

Visualizing: Forming mental images of what's happening in the text helps make sense of it. Visualizing enables readers to construct mental representations of the text, which can enhance comprehension by making abstract ideas more concrete and relatable.

3. After Reading: Checking Understanding

Summarizing: Putting the main idea into their own words. Summarization is a critical strategy that helps learners consolidate information and assess their understanding of the text. It encourages active engagement and facilitates the retention of key concepts.

Asking questions: Reflecting on what was confusing or surprising.

These strategies may seem simple, but many learners do not use them unless they are shown how—and encouraged to practice.

Why Strategies Matter in EFL Learning?

EFL learners often read more slowly and may struggle to guess meaning. One common problem is focusing too much on understanding every single word. This slows reading and makes it frustrating. Teaching students to look at the “big picture” helps them read faster and enjoy it more. Implementing metacognitive strategies, such as planning, monitoring, and evaluating one's reading process, has been shown to enhance EFL learners' reading comprehension and foster greater autonomy in learning.

For example, research has shown that learners who use strategies like summarizing, predicting, and monitoring their understanding tend to perform better over time. In one study, students who received strategy instruction improved their reading test scores and felt more confident tackling long texts. But the goal isn't just test scores—it's about helping learners become **independent readers** who enjoy reading in English.

Adapting Strategies to Learners

Not all learners are the same. A beginner might need more support—like pre-teaching difficult words—while an advanced learner might be ready to analyze the writer's purpose or style. It is important for teachers to choose strategies that match the learners' level and the type of text. Recognizing the diversity in learners' proficiency levels and backgrounds is crucial. Tailoring reading strategies to individual needs ensures more effective learning outcomes and accommodates varying cognitive and linguistic abilities.

Here is how strategies might differ:

Beginners: Focus on word guessing, using visuals, and simple summarizing.

Intermediate: Start applying note-taking and paraphrasing.

Advanced: Practice critical thinking and drawing inferences from complex texts.

Making It Practical

To bring strategies into the classroom:

Using **think-aloud**. **Implementing the think-aloud strategy has been shown to significantly improve students' reading comprehension abilities, particularly in identifying main ideas, making inferences, summarizing, and interpreting vocabulary.** Teachers read a short passage and explain their thinking out loud—this models strategy use. Think-aloud protocols serve as a valuable instructional tool, allowing students to observe the cognitive processes involved in reading. This method promotes metacognitive awareness and helps learners internalize effective reading strategies.

Pair reading: Students discuss what they read with a partner. Partner reading, a cooperative learning strategy, allows students to take turns reading and provide each other with feedback, promoting fluency and comprehension. This method encourages peer-assisted learning and can be particularly beneficial for English Language Learners.

Strategy journals: Learners reflect on what strategy they used and how it helped. Maintaining strategy journals encourages learners to reflect on their reading processes, fostering metacognitive awareness. This practice helps students identify effective strategies and areas for improvement, leading to enhanced reading comprehension.

Even simple steps like these can make reading lessons more interactive and meaningful.

Conclusion. Reading does not have to be stressful or boring. When EFL learners are taught to use reading strategies, they become more confident and capable readers. The key is to show them how to think before, during, and after reading. With practice and support, even students who once dreaded reading can start to enjoy it—and succeed at it.

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ДРЕВНЕРУССКИЙ ЯЗЫК: ЧТО МЫ ПОНИМАЕМ И ЧТО УТРАТИЛИ

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Аннотация: Данная статья посвящена исследованию древнерусского языка — языка восточных славян в период с X по XIV век. Автор рассматривает особенности его грамматической структуры, лексики и фонетики, а также указывает на основные трудности, возникающие при интерпретации древнерусских текстов. Анализируются причины утраты определённых языковых элементов и оцениваются современные возможности реконструкции и понимания древнерусской речи. Отдельное внимание уделено роли письменных источников в сохранении наследия древнерусского языка. Статья направлена на популяризацию лингвистических знаний и развитие интереса к историческим формам русского языка.

Ключевые слова: древнерусский язык, история языка, лексика, фонетика, грамматика, лингвистика, реконструкция, утерянные формы.

Введение

Древнерусский язык — важнейший этап в развитии восточнославянских языков. Он существовал приблизительно с X века (после принятия христианства и появления письменности на Руси) до XIV века, когда началась активная регионализация и формирование трёх восточнославянских языков: русского, украинского и белорусского. Являясь прямым предшественником современного русского языка, древнерусский язык представляет огромный интерес для исторической лингвистики. Однако, несмотря на обилие письменных памятников, мы по-прежнему сталкиваемся с определёнными трудностями при его изучении и интерпретации.

1. Что мы знаем о древнерусском языке

1.1 Письменные источники

Главными источниками знаний о древнерусском языке являются:

- берестяные грамоты (главным образом из Новгорода),
- летописи (например, «Повесть временных лет»),
- религиозные тексты (переводы с греческого, а позже — оригинальные славянские произведения),
- деловая документация (грамоты, договоры, уставы).

Эти тексты дают представление о письменной норме, хотя и не отражают полностью живую речь.

1.2 Грамматическая система

Древнерусский язык имел богатую флективную систему:

- **семь падежей** (включая звательный, ныне утраченный),
- **три рода**,
- **две числовые формы** — единственное и множественное число,
- **система спряжений глаголов** с различными временными и наклонными формами.

Особенно интересен так называемый **аорист** — форма прошедшего времени, утраченная в современном русском языке, но активно использовавшаяся в древнерусских текстах.

1.3 Лексика

Лексика древнерусского языка была насыщена заимствованиями:

- из церковнославянского языка,
- из греческого (в религиозных текстах),
- из старонорвежского (в северных регионах, особенно в Новгороде).

Существенная часть лексического фонда состояла из слов, которые сегодня либо устарели, либо полностью исчезли.

2. Что мы утратили

2.1 Фонетика

Современные носители русского языка не ощущают:

- **йотовые гласные** ([ѣ], [ю], [ѣ], [ѣ], [ѣ]),
- различие между **твёрдыми и мягкими согласными** в ряде позиций, утраченное позднее,
- **йотированные формы**, широко представленные в древнерусской орфографии и фонетике.

Фонетическая реконструкция требует сопоставления с другими славянскими языками и эталонными звуковыми законами.

2.2 Утрата синтетических форм

Современный русский язык стал более аналитическим:

- исчезли **аорист, имперфект, перфект**,
- формы с **деепричастием совершённого вида** упростились,
- словоформация утратила регулярность.

2.3 Лексика и стилистика

Множество слов, связанных с бытом, обрядами и институтами древнерусской жизни, ныне непонятны без комментариев:

- «град» (город),
- «тиун» (должностное лицо),
- «вервь» (общинная ответственность),
- «ряд» (договор),

- «судьи» (различные виды правовых полномочий).

Современные читатели древнерусских текстов нуждаются в комментариях и глоссариях.

3. Современное понимание и интерпретация

Современная филология располагает средствами:

- **сопоставительного анализа** с другими славянскими языками (особенно с сербским, болгарским, польским),
- **историко-сравнительного метода**,
- **этимологического анализа**,
- **реконструкции утраченных форм** на базе древней письменности.

Новые технологии, включая **цифровые корпуса текстов**, позволяют моделировать лингвистические изменения и улучшать понимание древнерусской речи.

Заключение

Древнерусский язык — это не только предшественник современного русского, но и важнейший элемент славянской языковой и культурной истории. Хотя многое было утрачено — в фонетике, грамматике и лексике — современные исследования позволяют всё глубже проникать в структуру и дух древнерусской речи. Грамотное изучение и популяризация древнерусского языка способствуют не только расширению лингвистических знаний, но и укреплению культурной идентичности.

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КАК СТАРОСЛАВЯНИЗМЫ ЖИВУТ В СОВРЕМЕННОЙ РЕЧИ

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Аннотация: В статье рассматривается роль и функции старославянизмов в современном русском языке. Выявляются причины их сохранения и активного употребления в различных функциональных стилях. На основе анализа литературных и публицистических текстов, а также живой разговорной речи, демонстрируется, как старославянизмы продолжают выполнять экспрессивные, стилистические и концептуальные задачи в коммуникации. Автор делает вывод о том, что старославянизмы, несмотря на свою архаичную природу, остаются важным элементом языковой системы, особенно в контексте культуры, религии, литературы и официальной речи.

Ключевые слова: старославянизмы, современный русский язык, архаизмы, лексика, стилистика, церковнославянизмы, функциональные стили, речевая экспрессия

Введение

Язык — живой организм, в котором древнее соседствует с новым. Одним из таких элементов, переживших века, являются старославянизмы — слова и выражения, пришедшие в русский язык из старославянского, литературного языка Древней Руси. Несмотря на технологическую революцию и глобализацию, многие из этих слов не только сохраняются, но и активно функционируют в современной речи. Почему же слова с тысячелетней историей по-прежнему звучат в XXI веке?

1. Что такое старославянизмы

Старославянизмы — это слова и языковые конструкции, пришедшие в русский язык из старославянского языка. Чаще всего они являются дублетами исконно русских слов, отличающимися стилистической окраской и оттенками значения.

Примеры дублетов:

Старославянизм	Русское соответствие
глава	голова
зрак	лицо
бездне	глубине
възвать	крикнуть, призвать

Старославянизмы активно использовались в церковной, официальной и литературной речи. Даже после реформ Петра I и развития разговорного стиля, они сохранили свое место в русском языке.

2. Жизнь старославянизмов в разных стилях речи

а) Публицистический и официальный стиль

В официальной и деловой речи старославянизмы придают речи строгость, торжественность, подчеркнутую значимость.

Примеры:

- «Настоящим удостоверяется...»
- «Воспрепятствование деятельности...»
- «Во исполнение постановления...»

Здесь старославянизмы выполняют функцию речевого этикета и формальности.

б) Художественный стиль

В литературе старославянизмы используются для создания высокого, возвышенного стиля, а также при стилизации под древность.

Пример (А. С. Пушкин):

«Унылая пора! Очей очарованье!»

Слова вроде *очей*, *злато*, *вышний*, *воззвать* и др. помогают писателям создавать поэтичную или духовно насыщенную атмосферу.

в) Разговорная речь и ирония

Некоторые старославянизмы проникли в повседневную речь, часто с ироничным или комическим оттенком:

- «внемли, о друг мой!»
- «да снизойдет на нас благодать Wi-Fi»
- «аще не веруешь, проверь сам»

Это своеобразная игра с архаикой, использующая старославянизмы как средство юмора или стилистического эффекта.

3. Старославянизмы и религиозный дискурс

Наиболее органично старославянизмы сохраняются в церковной речи. В богослужебных текстах, молитвах, псалмах используется язык, насыщенный старославянизмами.

Примеры:

- «Да будет воля Твоя...»
- «Помилуй нас, Боже...»
- «Во имя Отца и Сына и Святаго Духа...»

Такие формы не только сохраняют традицию, но и формируют особый сакральный стиль общения.

4. Причины живучести старославянизмов

1. **Стилистическая окраска:** позволяют придать речи торжественность, возвышенность, официальность.
2. **Культурно-историческая память:** связывают современного человека с традицией, духовностью, литературной классикой.
3. **Экспрессивность:** придают речи выразительность, усиление эмоций.
4. **Формирование языковой нормы:** в определённых сферах старославянизмы стали частью стандартного языкового репертуара.

Заключение

Старославянизмы — это не реликты прошлого, а живые элементы современного языка, выполняющие важные функции в разных речевых регистрах. Их способность адаптироваться, приобретать новые стилистические и семантические оттенки свидетельствует о глубокой связи языка с историей, культурой и менталитетом народа. Знание и понимание старославянизмов обогащает современного носителя русского языка, раскрывая глубинные пласты смысла и красоты родной речи.

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ЭВОЛЮЦИЯ ГРАММАТИКИ РУССКОГО ЯЗЫКА: ЧТО ИСЧЕЗАЕТ, А ЧТО ПОЯВЛЯЕТСЯ?

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Аннотация: В данной статье рассматриваются основные направления эволюции грамматической системы русского языка с конца XIX века до наших дней. Анализируются процессы утраты и появления грамматических форм и конструкций, вызванные внутренними законами развития языка, а также внешними факторами: глобализацией, влиянием английского языка, цифровой средой и изменениями в социокультурной среде. Особое внимание уделяется изменениям в синтаксисе, морфологии и словообразовании. Делается вывод о том, что язык не деградирует, а адаптируется к новым условиям существования, сохраняя при этом свою структурную основу.

Ключевые слова: русский язык, грамматика, эволюция, морфология, синтаксис, языковые изменения, неологизмы, англицизмы, язык интернета.

Введение

Русский язык, как и любой живой язык, находится в постоянном развитии. Грамматическая система — одна из самых устойчивых, но и она подвержена изменениям. Эти изменения могут происходить как стихийно, так и под влиянием определённых факторов: социальных, культурных, технологических. В данной статье мы попытаемся проследить, какие грамматические элементы русского языка исчезают, какие трансформируются, а какие — появляются заново.

Исчезающие элементы грамматики

1. Упрощение склонения и спряжения

Современный русский язык всё чаще демонстрирует тенденции к упрощению грамматических форм. Особенно это заметно в разговорной речи, где часто происходит:

- Смешение родов и падежей (например, «у Маши новый телефон — я её поздравил» вместо нормативного «её» → «её с этим поздравил»);
- Упрощение спряжения глаголов: исчезновение вариативности форм прошедшего времени («я поехала» и «я поехал» в женской речи).

2. Утрата партиципиальных конструкций

Деепричастные обороты и страдательные причастия становятся всё менее употребительными, особенно в устной речи и языке медиа. Причастия часто

заменяются на подчинённые предложения: вместо «выполненная работа» — «работа, которую выполнили».

3. Исчезновение архаичных форм

Формы, сохранившиеся в литературной или церковнославянской традиции (например, глаголы на -вати, формы типа «есть» в значении «является»), уходят из активного употребления.

Новые явления и грамматические новообразования

1. Расширение функций существующих грамматических форм

Частица «как бы», модальные слова вроде «типа», «просто» получают грамматические функции, выражающие неуверенность, смягчение утверждения или дистанцирование. Это — маркеры нового стиля общения.

2. Влияние английского языка

Англицизмы приходят не только в лексику, но и влияют на грамматические конструкции:

- Появляются новые схемы словообразования: «перепостить», «задизлайкать»;
- Усиливается использование прилагательных как неизменяемых слов («фэшн показ», «смарт часы»);
- Возникают квазипредикативные конструкции по образцу английского языка: «Я такой: “Нет!”» (по аналогии с «I was like: “No!”»).

3. Интернет-язык и разговорные конструкции

Цифровая среда формирует собственный синтаксис, близкий к устной речи:

- Сокращение предложений, эллипсисы («Пошёл. Купил. Вернулся.»);
- Расширение использования эмодзи как синтаксических знаков;
- Частое опущение глаголов-связок: «Я в шоке», «Он не в себе»

Адаптивность и живучесть грамматики

Несмотря на процессы упрощения и трансформации, нельзя говорить о деградации языка. Изменения служат адаптацией к новым способам коммуникации. Примеры из истории показывают, что аналогичные процессы происходили и в прошлом: упрощение двойственного числа, падежной системы в древнерусском языке, заимствования из французского в XVIII–XIX вв.

Заключение

Грамматическая система русского языка находится в постоянном движении. Одни формы уходят, другие — трансформируются или появляются. Наиболее подвержены изменениям синтаксис и морфология, особенно в разговорной и цифровой среде. Однако язык сохраняет внутреннюю логику и способность к самоорганизации. Современная грамматика становится более гибкой, инклюзивной и приспособленной к быстро меняющейся социальной реальности. Эволюция грамматики — свидетельство жизнеспособности языка, а не его

ослабления.

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ЛЕКСИКОГРАФИЯ СЕГОДНЯ: КАК СОЗДАЮТСЯ СОВРЕМЕННЫЕ СЛОВАРИ

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Аннотация: Статья посвящена современным тенденциям в области лексикографии — науки о словарях. Рассматриваются ключевые этапы создания современных лексикографических продуктов, включая сбор и обработку языковых данных, участие корпусов текстов, использование искусственного интеллекта и роль пользователя в цифровую эпоху. Подчеркивается, что современная лексикография — это синтез гуманитарных и цифровых наук, ориентированных на максимальную релевантность и доступность лексических ресурсов.

Ключевые слова: лексикография, словарь, корпусная лингвистика, цифровые технологии, искусственный интеллект, семантика, лексикографическая платформа.

Введение

Лексикография, долгое время ассоциировавшаяся с кропотливым трудом филологов, сегодня переживает период бурной трансформации. Словари больше не создаются вручную в привычном смысле слова — современная лексикография активно использует цифровые технологии, большие данные и алгоритмы машинного обучения. Эта статья рассматривает, как формируются современные словари, кто стоит за их созданием и как технологии изменяют само понятие лексикографического продукта.

1. Этапы создания современного словаря

Современный словарь проходит через несколько ключевых этапов:

1.1. Сбор языкового материала

Основой современного словаря служат **национальные и специализированные корпуса текстов** — огромные базы данных письменных и устных текстов. Например, Российский национальный корпус (РНК) или Британский национальный корпус (BNC) используются как источники реального языкового употребления.

1.2. Анализ данных и семантическая разметка

С помощью лингвистов и алгоритмов на основе ИИ осуществляется **обработка и классификация** данных: выделяются значения слова, примеры употребления, коллокации, частотность и стилистическая маркировка.

1.3. Моделирование словарной статьи

Каждая статья включает не только толкование слова, но и информацию о синонимах, антонимах, транскрипции, частоте использования, грамматических характеристиках и примерах. Современные статьи часто интерактивны и адаптируются под пользователя.

2. Технологии в лексикографии

2.1. Использование ИИ и машинного обучения

Системы ИИ, такие как BERT, GPT и другие языковые модели, позволяют **автоматически обрабатывать контексты** и предлагать гипотезы о значениях слов, даже новых или малоизвестных.

2.2. Автоматизированное обновление

Словари теперь могут **пополняться в реальном времени**, что особенно актуально для неологизмов, профессионализмов и жаргона. Яркий пример — онлайн-словарь Oxford English Dictionary, который обновляется несколько раз в год.

2.3. Интерактивность и пользовательские данные

Современные словари часто собирают **обратную связь от пользователей**, включая поиск, добавление новых слов и меток. Такие данные помогают приоритизировать обновления и выявлять пробелы.

3. Цифровая трансформация и доступность

3.1. Платформы и мобильные приложения

Цифровые словари доступны через **веб-интерфейсы и приложения**, позволяя быстро находить значения, озвучивать слова, копировать примеры употребления.

3.2. Интеграция с другими сервисами

Многие современные платформы, как Lingvo, Reverso или DeepL, включают словарные базы как часть более широкого инструментария — перевода, анализа, обучения языкам.

3.3. Мультимодальность

Сегодняшние словари могут включать **видеопримеры, аудиофайлы, графики и визуализации**, которые облегчают восприятие информации.

Заключение

Лексикография XXI века — это динамичная, междисциплинарная область, сочетающая лингвистику, компьютерные науки и UX-дизайн. Современные словари становятся не просто справочниками, а полноценными интеллектуальными системами, которые учатся, адаптируются и взаимодействуют с пользователем. В этом процессе особенно важны прозрачность алгоритмов, роль экспертной верификации и сохранение языкового богатства в эпоху цифровой стандартизации.

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РУССКАЯ ФРАЗЕОЛОГИЯ: ПРОИСХОЖДЕНИЕ И СОВРЕМЕННЫЕ ТРАНСФОРМАЦИИ

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Аннотация: В статье рассматриваются исторические истоки русской фразеологии, отражающие многовековую культурную и языковую традицию. Анализируются источники происхождения фразеологических единиц: мифология, религия, быт, история, а также влияние других языков. Особое внимание уделено современным трансформациям фразеологизмов в условиях глобализации, цифровой коммуникации и молодежной субкультуры. Показано, как классические выражения получают новое звучание, переосмысливаются или выходят из активного употребления. Работа направлена на выявление механизмов адаптации фразеологии к меняющемуся социокультурному контексту.

Ключевые слова: фразеология, русская речь, происхождение, трансформация, культура, языковое заимствование, неологизмы, молодежный жаргон

Введение

Фразеология — это неотъемлемая часть национального языка, отражающая коллективный опыт, менталитет и ценности народа. Русская фразеология формировалась веками, вобрав в себя богатство народной мудрости, религиозных представлений, исторических событий и быта. В условиях стремительных социокультурных изменений XXI века фразеологизмы претерпевают значительные трансформации. Цель данной статьи — проанализировать происхождение устойчивых выражений русского языка и проследить их эволюцию в современной речи.

1. Исторические корни русской фразеологии

Русская фразеология имеет разнородные источники. Выделим основные:

1.1. Народно-бытовая основа

Многие фразеологизмы родились в крестьянской среде и связаны с сельским хозяйством:

- *Зарубить на носу* — из практики пометок на деревянной дощечке (носок).
- *Без году неделя* — о человеке, недавно появившемся, неопытном.

1.2. Библейские и религиозные источники

Христианство оказало значительное влияние:

- *Валамова ослица* — библейский образ.

- *Каинова печать* — метафора преступления.

1.3. Историко-культурные заимствования

Некоторые фразеологизмы пришли из латинского, французского, немецкого языков:

- *Ахиллесова пята* — из античной мифологии.
- *Скатертью дорога* — калька с французского пожелания «bonne route».

2. Современные трансформации фразеологизмов

С начала XXI века наблюдаются значительные изменения в употреблении фразеологических оборотов. Эти изменения связаны с рядом факторов:

2.1. Цифровизация и медийная среда

Мемы, интернет-коммуникация, сокращения и эмодзи повлияли на форму выражений:

- *Кот в мешке* может иронически заменяться на *крипта в мешке*.
- *Пилить бюджет* в интернет-среде стало общеупотребительным.

2.2. Молодежный сленг и неологизмы

Молодежная речь активно адаптирует или видоизменяет фразеологизмы:

- *Тянуть резину* трансформируется в *лагать по-жесткому*.
- *Вешать лапшу на уши* может звучать как *загонять контент*.

2.3. Иронизация и контекстуализация

Современные носители языка часто используют классические выражения с ироническим оттенком или в нестандартных контекстах:

- *Попасть пальцем в небо* — иронически о неудачной гугл-поисковой выдаче.
- *Вилами по воде писано* — о фейках в интернете.

3. Угасание и сохранение фразеологизмов

Некоторые выражения устаревают и исчезают из активной речи, особенно те, чьи реалии непонятны современному поколению. Пример:

- *Водить за нос* сохраняется, а *пустить пыль в глаза* всё реже употребляется в молодежной среде.

Однако и сохраняются, и возрождаются многие обороты, особенно в литературе, СМИ и обучающих форматах (школьные программы, языковые курсы).

Заключение

Русская фразеология представляет собой уникальный пласт национальной культуры, сохранивший множество исторических, религиозных и бытовых элементов. Современные трансформации свидетельствуют не о разрушении, а о гибкости и адаптивности языка. Фразеологизмы продолжают функционировать как выразительное средство речи, приобретая новые формы и смыслы в условиях цифровой эпохи. Их анализ позволяет лучше понять, как язык откликается на

социокультурные вызовы и технологические изменения.

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ГЕНДЕР И ЯЗЫК: КАК МЕНЯЕТСЯ РУССКИЙ ЯЗЫК ПОД ВЛИЯНИЕМ СОЦИАЛЬНЫХ ИЗМЕНЕНИЙ

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Аннотация: В статье рассматривается влияние социальных изменений на трансформацию русского языка с точки зрения гендера. Анализируются основные тенденции в использовании гендерно маркированных форм, изменения в лексике и грамматике, а также социальные и культурные факторы, способствующие этим изменениям. Особое внимание уделяется вопросу инклюзивности и гендерной нейтральности в языке, что отражает современные тенденции в обществе, связанные с расширением прав и свобод различных гендерных групп. Исследование показывает, как язык реагирует на социальные вызовы, становясь инструментом отражения и конструирования новых гендерных реалий.

Ключевые слова: гендер, язык, русский язык, социальные изменения, гендерная лингвистика, гендерная нейтральность, инклюзивность, феминитивы, язык и общество.

Введение

Язык всегда был тесно связан с социальной структурой и культурными нормами общества. В современном мире, где вопросы гендера и равенства приобретают всё большую значимость, язык выступает не только средством коммуникации, но и инструментом отражения социальных изменений. Русский язык, как и многие другие, переживает трансформацию, связанную с пересмотром традиционных гендерных ролей и норм. Это проявляется в изменении словоупотребления, грамматических форм и стилистических приемов.

1. Теоретические основы гендера и языка

Гендер в лингвистике рассматривается как система смыслов и норм, связанных с полом, закреплёнными в языке. Традиционно русский язык характеризуется ярко выраженной гендерной маркировкой: существительные и прилагательные изменяются по роду, профессии и социальные роли часто имеют четко выраженный гендерный оттенок. Современные социальные движения способствуют тому, что эта система подвергается переосмыслению.

2. Социальные изменения и их влияние на русский язык

Социальные изменения последних десятилетий, включая феминистские движения, расширение прав ЛГБТ+ сообществ и активизацию вопросов

равенства, влияют на язык. Возникает потребность в новых формах выражения, которые будут инклюзивными и отражать многообразие гендерных идентичностей.

- **Феминитивы:** Возрождение и активное внедрение форм женского рода для профессий и социальных ролей (например, «докторка», «директорка»), что ранее часто воспринималось как стилистически неуместное.

- **Гендерно нейтральные формы:** Попытки избегать излишней гендерной маркировки с помощью нейтральных форм (например, использование множественного числа, обращение на «вы» и другие средства).

- **Лексические новации:** Появление новых слов и выражений, связанных с расширением гендерных представлений.

3. Примеры изменений в языке

В повседневной речи и СМИ всё чаще встречаются формы и выражения, отражающие новые социальные нормы:

- В официальных документах и на работе всё активнее используют формы феминитивов.

- В интернете и социальных сетях распространены гендерно нейтральные конструкции и эмодзи.

- В СМИ и литературе увеличивается внимание к персонажам с различными гендерными идентичностями.

4. Проблемы и споры

Несмотря на прогресс, изменения вызывают дискуссии. Критики отмечают сложности восприятия новых форм, возможное нарушение норм классического русского языка и опасения по поводу излишней политизации языка. Сторонники же подчеркивают важность языка как инструмента равенства и уважения к индивидуальности.

Заключение

Русский язык в ответ на социальные изменения становится более гибким и инклюзивным, отражая трансформацию гендерных ролей и идентичностей в обществе. Появление и распространение феминитивов, нейтральных форм и новых лексических единиц свидетельствует о динамичном развитии языка, который не только описывает, но и формирует социальную реальность. В будущем можно ожидать дальнейшего развития этих тенденций, что потребует баланса между традицией и инновацией.

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ЯЗЫК И ИДЕНТИЧНОСТЬ: КАК МЫ ВЫРАЖАЕМ СВОЮ ПРИНАДЛЕЖНОСТЬ ЧЕРЕЗ РЕЧЬ

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Аннотация: В статье рассматривается взаимосвязь между языком и идентичностью человека. Анализируется, как языковые особенности, диалекты, жаргоны и речевые стратегии помогают индивидам выражать свою социальную, этническую и культурную принадлежность. Исследуется роль языка как мощного средства формирования групповой идентичности, а также механизмов, с помощью которых речь становится маркером принадлежности к определённой социальной группе. Статья опирается на современные лингвистические теории и эмпирические исследования, иллюстрируя, как язык формирует и отражает уникальные аспекты человеческой идентичности.

Ключевые слова: Язык, идентичность, социальная принадлежность, диалект, речевые стратегии, этническая идентичность, культурная принадлежность, социолингвистика, языковое поведение, коммуникативная идентичность.

Введение

Язык – не просто инструмент коммуникации, но и мощный социальный феномен, тесно связанный с формированием человеческой идентичности. Через речь люди выражают свою принадлежность к определённым социальным, этническим, культурным или профессиональным группам. В современном мире, где миграция и глобализация усиливают многообразие культурных и языковых контактов, вопрос взаимосвязи языка и идентичности становится особенно актуальным. В данной статье анализируется, каким образом через язык индивиды и сообщества демонстрируют свою принадлежность и уникальность.

Язык как маркер идентичности

Языковые особенности и диалекты

Диалекты и региональные особенности речи являются одними из самых очевидных способов выражения идентичности. Говоря на определённом диалекте, человек сигнализирует о своей принадлежности к конкретному географическому региону или социальной группе. Например, различия между московским и петербургским произношением в русском языке или между южным и северным диалектами в английском – яркие примеры такой лингвистической маркировки.

Этническая и культурная идентичность

Язык нередко выступает символом этнической принадлежности. В билингвальных и мультикультурных обществах речь становится индикатором культурной идентичности и способом сохранить традиции. В некоторых случаях поддержание родного языка – это форма сопротивления ассимиляции и сохранения этнокультурного наследия.

Социальные и профессиональные группы

Не только этническая принадлежность, но и принадлежность к определённой социальной или профессиональной группе выражается через специализированные языковые коды: жаргоны, сленг, профессиональные термины. Молодёжные субкультуры, например, часто используют уникальные речевые формы для самовыражения и разделения с «взрослым» сообществом.

Язык и формирование идентичности

Речевые стратегии и самоидентификация

Люди сознательно выбирают определённые языковые варианты, чтобы подчеркнуть или, наоборот, скрыть свою принадлежность. Код-свитчинг (переключение между языками или диалектами в одной речи) часто служит инструментом адаптации к разным социальным контекстам и одновременно способом выражения множественной идентичности.

Язык как средство социальной интеграции и исключения

Через язык создаются барьеры и мосты. Речь может объединять членов группы и одновременно отталкивать «чужих». Таким образом, язык не только формирует идентичность, но и управляет социальными отношениями, влияя на процессы включения и исключения.

Современные исследования и примеры

В социалингвистике и антропологической лингвистике наблюдается широкий интерес к вопросам, как язык отражает и формирует идентичность. Примером служит исследование билингвальных подростков, которые используют языковую гибкость для создания многослойной идентичности, или анализ диалектных особенностей как символа регионального самосознания.

Заключение

Язык является ключевым элементом в построении и выражении идентичности. Через языковые формы люди демонстрируют свою принадлежность к различным социальным, этническим и культурным группам. Язык служит не только средством общения, но и символом уникальности, способом самоидентификации и инструментом социальной интеграции или дифференциации. Понимание этой взаимосвязи важно для изучения как индивидуальной, так и коллективной идентичности в современном обществе.

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СОВРЕМЕННЫЙ РУССКИЙ ЯЗЫК: ТЕНДЕНЦИИ РАЗВИТИЯ И ИЗМЕНЕНИЯ

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Аннотация: В статье рассматриваются основные тенденции развития современного русского языка, вызванные влиянием глобализации, цифровизации и социальных трансформаций. Анализируются изменения в лексике, грамматике и стилистике, а также влияние интернет-коммуникаций и молодежных субкультур на язык. Особое внимание уделяется феномену языковых заимствований и возникновению новых форм выражения. В заключении подчеркивается необходимость адаптации языковой политики и образования к новым реалиям.

Ключевые слова: современный русский язык, тенденции развития, языковые изменения, лексика, грамматика, интернет-язык, заимствования, молодежный сленг, дигитализация, языковая политика

Введение

Русский язык — один из крупнейших языков мира, активно развивающийся и изменяющийся под воздействием множества факторов. В последние десятилетия на язык оказывает влияние не только внутреннее развитие общества, но и глобализация, массовая культура, технологический прогресс. Эти процессы порождают новые лингвистические явления, отражающие современную реальность и меняющийся образ жизни носителей языка.

Основные тенденции развития современного русского языка

1. Лексические изменения

Современный русский язык активно пополняется заимствованиями из английского и других языков, особенно в сферах технологий, науки, бизнеса и молодежной культуры. Слова вроде «лайк», «фолловер», «блогер», «стартап» стали повседневными. Также появляются новые слова и выражения, отражающие современный образ жизни — например, «удаленка», «селфи», «хайп».

2. Грамматические изменения

Хотя грамматическая система русского языка остаётся достаточно стабильной, наблюдаются некоторые упрощения и изменения, особенно в разговорной речи. Например, тенденция к употреблению кратких форм прилагательных, сокращения в построении предложений, увеличение числа

просторечных конструкций.

3. Стилистические и прагматические изменения

Влияние интернет-коммуникаций формирует особый стиль общения — более неформальный, экспрессивный, насыщенный эмодзи, аббревиатурами и графическими знаками. Молодежный сленг и меметика влияют на речевые модели, создавая новые средства выразительности.

4. Влияние цифровизации и интернета

Сети и социальные медиа стимулируют быстрое распространение новых слов и выражений. Язык становится более динамичным и изменчивым. Интернет-язык характеризуется сокращениями (например, «ок», «лол», «имхо»), трансформациями слов и появлением новых форм коммуникации.

5. Языковая политика и образование

В ответ на изменения формируются новые подходы к преподаванию русского языка, адаптированные к цифровой среде. Важным становится сохранение баланса между традиционными нормами и современными языковыми тенденциями.

Заключение

Современный русский язык переживает значительные изменения, обусловленные социально-культурными и технологическими факторами. Язык становится более открытым к заимствованиям, гибким и динамичным, что отражает новые реалии жизни. Для сохранения его уникальности и культурного наследия необходимы современные стратегии языковой политики и адаптация образовательных программ, способствующие развитию грамотности и осознанного отношения к языку.

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QUYOSH VA SHAMOL ENERGIYASINING GLOBAL IQLIM O'ZGARISHIGA TA'SIRI: IMKONIYATLAR VA CHEKLOVLAR

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ANNOTATSIYA

Ushbu maqolada quyosh va shamol energiyasi kabi muqobil energiya manbalarining global iqlim o'zgarishiga ta'siri tahlil qilinadi. So'nggi yillarda insoniyat duch kelayotgan asosiy muammolardan biri – bu issiqxona gazlari konsentratsiyasining ortib borishi va unga qarshi kurashish zaruratidir. Shu nuqtai nazardan, toza va qayta tiklanuvchi energiya manbalarini rivojlantirish ekologik barqarorlikka erishishda asosiy omil sifatida qaralmoqda. Maqolada dunyodagi yetakchi davlatlarning muqobil energiyadan foydalanish bo'yicha tajribalari, texnologik rivojlanishlar, iqtisodiy va ekologik samaradorlik, shuningdek, mavjud cheklovlar (masalan, texnologik, infratuzilmaviy, iqtisodiy va siyosiy to'siqlar) keng yoritiladi. Tadqiqot natijalari shuni ko'rsatadiki, agar quyosh va shamol energiyasidan foydalanish strategik darajada rejalashtirilsa, bu global isishning oldini olish va barqaror rivojlanishni ta'minlashda muhim rol o'ynashi mumkin. Shu bilan birga, ushbu energetika sohasining to'liq salohiyati hali to'liq ro'yobga chiqmagan bo'lib, uni amalga oshirishda xalqaro hamkorlik va innovatsiyalar hal qiluvchi ahamiyat kasb etadi.

Kalit so'zlar: quyosh energiyasi, shamol energiyasi, muqobil energiya, global iqlim o'zgarishi, issiqxona gazlari, barqaror rivojlanish, yashil texnologiyalar, energetik xavfsizlik, ekologik muvozanat, xalqaro tajriba

«ВЛИЯНИЕ СОЛНЕЧНОЙ И ВЕТРОВОЙ ЭНЕРГИИ НА ГЛОБАЛЬНОЕ ИЗМЕНЕНИЕ КЛИМАТА: ВОЗМОЖНОСТИ И ОГРАНИЧЕНИЯ»

АННОТАЦИЯ

В данной статье анализируется влияние альтернативных источников энергии, таких как солнечная и ветровая энергия, на глобальное изменение климата. Одной из основных проблем, с которой сталкивается человечество в последние годы, является рост концентрации парниковых газов и необходимость борьбы с ним. В этом контексте развитие чистых и возобновляемых источников энергии рассматривается как ключевой фактор достижения экологической устойчивости. В статье подробно освещается опыт стран-лидеров в использовании альтернативной энергии, технологические разработки,

экономическая и экологическая эффективность, а также существующие ограничения (например, технологические, инфраструктурные, экономические и политические барьеры). Результаты исследования показывают, что если использование солнечной и ветровой энергии спланировано на стратегическом уровне, оно может сыграть важную роль в предотвращении глобального потепления и обеспечении устойчивого развития. В то же время весь потенциал этого сектора энергетики еще не полностью реализован, и международное сотрудничество и инновации будут играть решающую роль в его реализации.

Ключевые слова: солнечная энергетика, ветроэнергетика, альтернативная энергетика, глобальное изменение климата, парниковые газы, устойчивое развитие, зеленые технологии, энергетическая безопасность, экологическое равновесие, международный опыт

THE IMPACT OF SOLAR AND WIND ENERGY ON GLOBAL CLIMATE CHANGE: OPPORTUNITIES AND CONSTRAINTS

ABSTRACT

This article analyzes the impact of alternative energy sources such as solar and wind energy on global climate change. One of the main problems facing humanity in recent years is the increase in greenhouse gas concentrations and the need to combat it. In this context, the development of clean and renewable energy sources is considered a key factor in achieving environmental sustainability. The article extensively covers the experiences of leading countries in the use of alternative energy, technological developments, economic and environmental efficiency, as well as existing constraints (for example, technological, infrastructural, economic and political barriers). The results of the study show that if the use of solar and wind energy is planned at a strategic level, it can play an important role in preventing global warming and ensuring sustainable development. At the same time, the full potential of this energy sector has not yet been fully realized, and international cooperation and innovation will play a crucial role in its implementation.

Keywords: solar energy, wind energy, alternative energy, global climate change, greenhouse gases, sustainable development, green technologies, energy security, ecological balance, international experience

KIRISH

XXI asr boshidan boshlab insoniyat iqlim o'zgarishi bilan bog'liq ekologik muammolarni tobora chuqurroq his qila boshladi. Atmosferaga chiqarilayotgan issiqxona gazlari, ayniqsa karbonat angidrid (CO₂), metan (CH₄) va azot oksidi (N₂O) konsentratsiyasining ortib borishi global haroratning o'sishiga, muzliklarning erishiga,

dengiz sathining ko'tarilishiga va ekstremal ob-havo hodisalarining ko'payishiga olib kelmoqda. Bu holat barqaror rivojlanish yo'lidagi asosiy to'siqlardan biriga aylanmoqda. Xalqaro olimlar hamda BMT qoshidagi Iqlim o'zgarishi bo'yicha hukumatlararo ekspertlar guruhi (IPCC) hisobotlariga ko'ra, iqlim inqirozini jilovlash uchun energiya ishlab chiqarishda karbon izi past bo'lgan texnologiyalarni joriy etish zarurati tobora oshib bormoqda.

Shu nuqtai nazardan, quyosh va shamol energiyasi kabi muqobil energiya manbalari global energetika tizimini qayta shakllantirishda eng muhim omillardan biri sifatida maydonga chiqmoqda. Quyosh energiyasi cheksiz va ekologik toza bo'lishi bilan ajralib turadi, shamol esa infratuzilmaga bog'liq bo'lmagan holda energiya olish imkonini beradi. 2023-yilgi Xalqaro Energetika Agentligi (IEA) hisobotiga ko'ra, dunyoda o'rnatilayotgan yangi elektr quvvatlarining 75% dan ortig'i aynan muqobil energiya manbalariga to'g'ri kelmoqda, ulardan esa asosiy ulush quyosh va shamol texnologiyalariga tegishli.

Biroq ushbu sohada mavjud bo'lgan imkoniyatlar bilan bir qatorda muhim cheklovlar ham mavjud. Ular qatoriga quyosh va shamol energiyasining noaniqligi (masalan, quyoshli kunlar yoki shamolli hududlar bilan cheklanish), elektr energiyasini omborlashdagi texnologik qiyinchiliklar, infratuzilmaning yetarli emasligi va yuqori boshlang'ich investitsiya talablarining mavjudligi kiradi. Shu sababli, muqobil energiya manbalaridan samarali foydalanish uchun faqat texnologik yangiliklar emas, balki institutsional, huquqiy va iqtisodiy mexanizmlar ham muhim ahamiyat kasb etadi.

Ushbu maqola quyosh va shamol energiyasining global iqlim o'zgarishiga ta'sirini kompleks tarzda tahlil qilishga, mavjud imkoniyatlar va cheklovlarni aniqlashga, shuningdek, xalqaro tajriba asosida barqaror va ekologik toza energiya siyosatini shakllantirishga oid ilmiy asoslangan tavsiyalar ishlab chiqishga qaratilgan.

NATIJARAR

Tadqiqot natijalari shuni ko'rsatadiki, quyosh va shamol energiyasi global iqlim o'zgarishiga qarshi kurashishda strategik ahamiyatga ega bo'lgan muqobil energiya manbalaridir. Ularning keng miqyosda joriy etilishi issiqxona gazlari chiqindilarini sezilarli darajada kamaytirishga xizmat qilmoqda. Jumladan, 2022-yilda faqatgina quyosh va shamol energiyasidan foydalangan holda ishlab chiqarilgan elektr energiyasi hisobiga 2,4 milliard tonna CO₂ chiqindisi atmosferaga chiqarilmay qolgan (IEA, 2023). Bu miqdor butun Yevropa Ittifoqining yillik karbonat angidrid chiqindisiga tengdir.

Quyosh energiyasidan foydalanish bo'yicha yetakchi o'ntalik davlatlar ichida Xitoy, AQSH, Hindiston va Germaniya yetakchilik qilmoqda. Bu davlatlar yillik energiya iste'molining 25–35% gacha qismini aynan quyosh va shamol texnologiyalari orqali qoplamoqda. Shu bilan birga, rivojlanayotgan mamlakatlarda ham quyosh

panellarining narxi arzonlashgani sababli ularning ommaviy joriy etilishi kuzatilmoqda. Misol uchun, 2010–2022 yillar oralig'ida quyosh panellari narxi 80% ga arzonlashgan, bu esa ularni tijorat va uy xo'jaliklarida keng qo'llash imkonini berdi. Shamol energetikasi sohasida esa Daniya, Niderlandiya va Ispaniya kabi mamlakatlar jahon bozorida ilg'or tajribalarni shakllantirib kelmoqda. Daniyada shamol elektr stansiyalari mamlakat umumiy elektr ta'minotining 50 foizidan ortig'ini tashkil etadi. Bu ko'rsatkich dunyo bo'yicha eng yuqori darajalardan biridir va bu davlatda iqlim siyosati bilan texnologik innovatsiyalar bir-birini muvaffaqiyatli to'ldirib kelayotganini ko'rsatadi.

Tadqiqot shuningdek, muqobil energiyaga o'tish jarayonida ayrim cheklovlarni ham aniqladi. Xususan, quyosh va shamol energiyasi manbalari beqaror tabiati bilan ajralib turadi: quyosh chiqmaydigan ob-havo sharoitlari yoki shamol tezligining yetarli bo'lmagan holatlari elektr ishlab chiqarishda uzilishlarga olib kelishi mumkin. Energiya saqlash texnologiyalarining (akkumulyatorlar) hali ham qimmatligi va elektr tarmoqlari bilan integratsiyadagi muammolar bu sohaning rivojlanish sur'atlarini cheklamoqda. Bundan tashqari, tahlillar shuni ko'rsatadiki, quyosh va shamol energiyasi infratuzilmasini qurish uchun katta yer maydonlari talab etiladi, bu esa ba'zi ekologik va ijtimoiy ziddiyatlarga sabab bo'lmoqda. Ayniqsa, shamol turbinalarining shovqini, qushlarga salbiy ta'siri va vizual manzarani buzishi bo'yicha noroziliklar ayrim mintaqalarda keng tarqalgan. Shu bilan birga, xalqaro darajadagi moliyaviy qo'llab-quvvatlash dasturlari, karbon soliqlari, yashil kreditlar va energiya subsidiyalari muqobil energiya texnologiyalarini rivojlantirishda muhim rol o'ynayotgani aniqlanmoqda. Masalan, 2023-yilda Yevropa Ittifoqi tomonidan muqobil energiyaga ajratilgan grantlar miqdori 82 milliard yevroga yetgan. Umuman olganda, quyosh va shamol energiyasining keng miqyosda joriy etilishi iqlim inqirozining oldini olishda hal qiluvchi ahamiyatga ega. Ammo bu imkoniyatlarni to'liq ro'yobga chiqarish uchun texnologik innovatsiyalar bilan bir qatorda siyosiy iroda, infratuzilmaviy sarmoyalar va xalqaro hamkorlik ham zarurdir.

MUHOKAMA

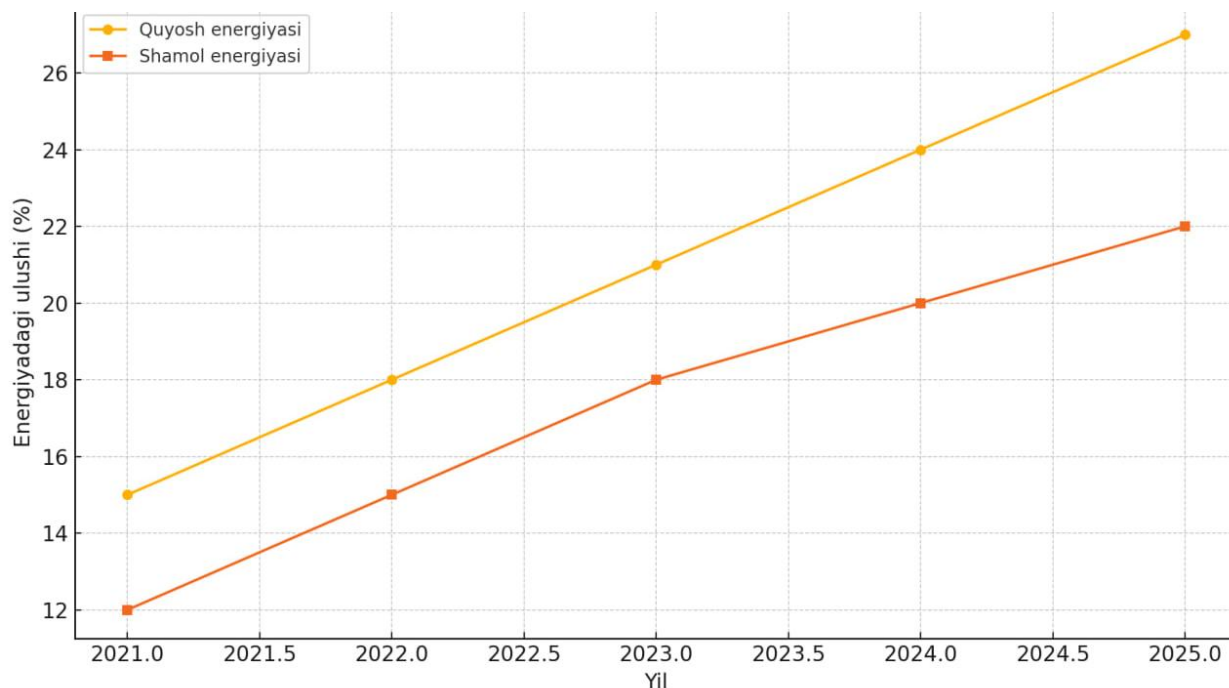
Quyosh va shamol energiyasi bugungi kunda global darajadagi iqlim inqiroziga qarshi kurashishda muhim rol o'ynayapti. Issiqxona gazlari chiqindilarining kamaytirilishi, karbon neytrallik siyosatining joriy etilishi aynan ushbu qayta tiklanuvchi manbalar hisobiga imkonli bo'lib bormoqda. Hozirgi kunda dunyo bo'yicha karbon chiqindilari asosiy energiya ishlab chiqaruvchi sektorlardan biri sifatida neft va gaz sanoati orqali yuzaga kelmoqda.

2022-yilgi IPCC (Iqlim o'zgarishi bo'yicha hukumatlararo ekspertlar guruhi) hisobotida qayd etilishicha, agar global harorat o'sishini 1.5 °C darajadan pastda ushlab turmoqchi bo'lsak, bu holatga 2050-yilgacha erishish uchun global karbon chiqindilari

yillik 50% ga kamaytirilishi kerak. Shu nuqtai nazardan, muqobil energiya manbalari afzallik sifatida ko‘rib chiqilmoqda.

Quyosh energiyasi sohasida Xitoy yetakchilik qilmoqda: 2023-yilda Xitoyda 430 GW dan ortiq quyosh energiyasi quvvati o‘rnatilgan bo‘lib, bu dunyo bo‘yicha umumiy quvvatning 36% ini tashkil etdi. Xitoyning Shanxay, Gansu va Tibet mintaqalarida quyosh panellari orqali ishlab chiqarilayotgan energiya soni milliard kilovatt-soatlarga yetmoqda. AQSHda esa shamol energiyasi bo‘yicha katta yutuqlar kuzatilmoqda. Texas shtatida joylashgan shamol stansiyalari orqali har yili 100 milliard kilovatt-soatga yaqin energiya olinadi. Bu esa millionlab uy xo‘jaliklarining yillik ehtiyojini qoplashga yetarli. Quyosh panellari narxining arzonlashuvi ularni ommaviylashtirishga olib keldi. 2010-yilda 1 vatt quyosh energiyasi quvvatining o‘rnatilish xarajati 4.00 AQSH dollarini tashkil qilgan bo‘lsa, 2022-yilga kelib bu narx 0.20 dollarga tushdi. Bu esa rivojlanayotgan mamlakatlarda ham texnologiyani joriy etishga imkon yaratdi. Shamol energetikasining asosiy ustunliklaridan biri – ekologik tozaligi va operatsion xarajatlarning pastligi hisoblanadi. Elektr energiyasi ishlab chiqarishda yonilg‘i yo‘q, chiqindi yo‘q, suv sarfi yo‘q. Lekin asosiy muammo shamol intensivligining beqarorligi bilan bog‘liq. Energiya saqlash texnologiyalari – bu sohaga investitsiyaning asosiy yo‘nalishi. Elektr energiyasini ishlab chiqarish va undan foydalanish orasidagi farqni muvozanatlash uchun zamonaviy akkumulyator tizimlari (Tesla Powerwall, LG Chem) ishlab chiqilmoqda. Yevropa Ittifoqi 2020–2030 yillarga mo‘ljallangan "Yashil kelishuv" strategiyasi asosida shamol va quyosh energiyasini asosiy yo‘nalish deb belgilagan. 2023-yil yakunlariga ko‘ra, Yilda ishlab chiqarilayotgan energiya 39% qayta tiklanuvchi manbalarga to‘g‘ri kelgan, bu ko‘rsatkich 2010-yilda atigi 18% edi. Qayta tiklanuvchi energiya iqtisodiy jihatdan foydaliligi ham isbotlangan. Misol uchun, 2021-yilda Afrikada O‘zbekiston hajmidagi elektr iste’molga ega bo‘lgan mamlakat – Misr, o‘zining "Benban Solar Park" orqali yiliga 1.5 milliard kVt/s energiya ishlab chiqara boshladi. Shamol turbinalarining ekologik zararli ta’siri borasida ham muhokamalar mavjud. Ayrim tahlillarga ko‘ra, yirik turbinalar qushlar migratsiyasiga salbiy ta’sir ko‘rsatmoqda. Shu sababli ekologik monitoring ham zaruriy shartga aylangan. Muqobil energiyaga asoslangan energiya siyosati milliy xavfsizlikka ham bevosita bog‘liq. Energiya importiga qaramlik darajasini kamaytirish, lokal ishlab chiqarishning ulushini oshirish davlatlar mustaqilligini mustahkamlaydi. Bundan tashqari, quyosh panellari va shamol turbinalari ishlab chiqarish sanoati o‘zining yangi ish o‘rinlari yaratish salohiyati bilan ham e’tiborni tortmoqda. 2023-yil yakunida jahonda qayta tiklanuvchi energiya sohasida band bo‘lganlar soni 13.7 million kishiga yetgan. Muqobil energiya iqtisodiy modeli odatda davlat subsidiyalari bilan qo‘llab-quvvatlanadi. Masalan, Germaniyada uy-joy egalariga quyosh panellari o‘rnatgani uchun 25% miqdorida qaytariluvchi grantlar taqdim etilmoqda.

Shu bilan birga, infratuzilmaviy muammolar ham mavjud. Shamol va quyosh stansiyalarining ishlab chiqarish hajmi past bo'lgan tarmoqlarda energiya uzatish imkoniyatlarini cheklaydi. Zamonaviy elektr uzatish tarmoqlari va smart grid texnologiyalari zarur.



Ushbu bu grafikda **2021–2025 yillar davomida quyosh va shamol energiyasining global energiya ishlab chiqarishdagi ulushi** tasvirlangan

O'zbekistonning o'zi ham bu yo'nalishda faol harakat qilmoqda. 2023-yilda Navoiy viloyatida ilk yirik quyosh elektr stansiyasi ishga tushirildi. Unda yiliga 100 mln kVt/soat energiya ishlab chiqariladi, bu esa 140 mingdan ortiq aholining ehtiyojini qoplaydi. BMT tomonidan 2030-yilga mo'ljallangan Barqaror Rivojlanish Maqsadlari ichida 7-maqсад "Arzon va toza energiya" aynan muqobil energiya manbalarining rivojiga qaratilgan. Har bir davlat o'z strategik hujjatlarida ushbu maqsadni inobatga olishi talab etiladi. Suv resurslari tanqisligi bilan kurashishda ham muqobil energiya texnologiyalari yordam beradi. Masalan, quyosh nurlari orqali ishlovchi suv tozalash va distillatsiya uskunalari sahro hududlarida qo'llanilmoqda. Shamol va quyosh energiyasini birgalikda qo'llash (hibrid tizimlar) orqali samaradorlik yanada oshadi. O'zbekiston janubiy hududlarida aynan bunday hibrid loyihalar bosqichma-bosqich ishga tushirilmoqda. So'nggi ilmiy izlanishlar shuni ko'rsatmoqda: 2050-yilgacha global energiya iste'molining 70% dan ortig'ini muqobil energiya orqali ta'minlash mumkin. Buning uchun esa siyosiy iroda, texnologik yondashuv va xalqaro kooperatsiya zarur.

Yakuniy jihatdan aytganda, quyosh va shamol energiyasi global iqlim o'zgarishini sekinlashtirishda asosiy vosita hisoblanadi. Biroq bu jarayonda faqat

texnika emas, balki ekologik madaniyat, xalqaro sheriklik va moliyaviy barqarorlik ham hal qiluvchi rol o'ynaydi.

XULOSA

Yuqoridagi tahlillar va statistik ma'lumotlar asosida quyosh va shamol energiyasi bugungi kunda global iqlim o'zgarishiga qarshi kurashishning eng istiqbolli yo'llaridan biri ekani isbotlandi. Ushbu muqobil energiya manbalari atmosferaga chiqariladigan issiqxona gazlari miqdorini sezilarli darajada kamaytirishga, energiya xavfsizligini ta'minlashga va iqtisodiy barqarorlikka erishishga xizmat qilmoqda.

Quyosh va shamol energiyasi yordamida ishlab chiqarilayotgan toza energiya ulushi dunyo miqyosida ortib borayotgan bo'lsa-da, bu yo'nalishda yechimini kutayotgan muammolar hanuzgacha dolzarbligicha qolmoqda. Jumladan, quyosh va shamol intensivligining beqarorligi, energiyani saqlash texnologiyalarining yuqori narxi, infratuzilmadagi muammolar, sarmoya jalb etishdagi qiyinchiliklar bu sohaning to'liq salohiyatini ro'yobga chiqarishga to'sqinlik qilmoqda.

Biroq shunga qaramay, rivojlangan va rivojlanayotgan mamlakatlar tajribasi shuni ko'rsatadiki, davlat siyosatida muqobil energiyani ustuvor yo'nalish etib belgilash, soliq imtiyozlari va subsidiyalar, innovatsion texnologiyalarni keng joriy etish orqali bu soha jadal rivoj topmoqda. O'zbekiston ham bu yo'nalishda dastlabki muvaffaqiyatli qadamlarni qo'ymoqda.

Shu asosda quyidagi xulosalarga kelindi:

- Quyosh va shamol energiyasi global iqlim o'zgarishini sekinlashtirishda asosiy vositadir.

- Ularning ommaviy joriy etilishi uchun siyosiy iroda, xalqaro moliyaviy yordam va ilg'or texnologiyalar muhim ahamiyat kasb etadi.

- Energetika siyosatining ekologik yo'nalishga o'tishi barqaror rivojlanishning kafolatidir.

- Har bir mamlakat sharoitidan kelib chiqib, shamol va quyosh energiyasining kombinatsiyalangan ishlatilishi maksimal samaradorlikni ta'minlaydi.

Kelgusida ushbu sohani rivojlantirish uchun xalqaro hamkorlikni mustahkamlash, energiya tejovchi texnologiyalarni ommalashtirish va iqlimga mos individual strategiyalarni ishlab chiqish zarur.

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**INTEGRATING SPEECH COMPETENCE AND DIGITAL TECHNOLOGIES
IN TEACHING ENGLISH AS A FOREIGN LANGUAGE**

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Abstract: The article explores the integration of speech competence and digital technologies in teaching English as a foreign language. The focus is on the competency-based approach, which aims at the formation and development of foreign language communicative competence (FLCC), comprising linguistic, speech, and sociocultural components. Special attention is given to the development of speech competence, particularly listening and speaking skills, which are key to successful communication. An analysis of modern electronic resources shows that the use of digital tools in distance learning effectively supports the development of these skills. At the same time, objective difficulties in listening and individual learner characteristics are highlighted, which must be taken into account when designing teaching methodologies. In conclusion, it is stated that a well-designed methodology incorporating digital technologies can significantly enhance students' speech training and strengthen their overall foreign language communicative competence.

Keywords: foreign language communicative competence, speech competence, listening, speaking, distance learning, digital technologies, electronic resources, teaching methodology, foreign language, skills development.

It is well known that the competency-based approach in education is aimed at the formation and development of a comprehensive set of competencies in students, the acquisition of which enables them to effectively solve various professional tasks. The main goal of foreign language instruction is the development of foreign language communicative competence (FLCC). Numerous studies in Russian academic literature (authors: N.I. Almazova, I.L. Bim, M.N. Vyatyutnev, N.I. Gez, N.D. Galskova, I.A. Zimnyaya, G.A. Kitaigorodskaya, E.I. Passov, V.V. Safonova, E.N. Solovova, A.N. Shamov, and others) are dedicated to the content and methodology of foreign language teaching within the framework of the competency-based approach. According to T.P.

Popova, the concept of FLCC "undergoes reinterpretation in response to changes in social reality and the evolving goals of foreign language education in society." [1, c. 11]. Following V.V. Safonova, we understand foreign language communicative competence (FLCC) as the degree to which a learner has acquired linguistic, speech, and sociocultural knowledge, skills, and abilities, enabling them to flexibly and appropriately adjust their speech behavior in accordance with the psychological characteristics of a given communicative situation. [2]. In general, scholars identify various components that make up foreign language communicative competence (FLCC). According to the model proposed by V.V. Safonova, FLCC consists of linguistic, speech, and sociocultural components. The sociocultural component, in turn, is divided into sociolinguistic, subject-specific, general cultural, and country-specific (linguocultural) competences.[3]. Linguistic competence involves mastering the phonetic, orthographic, grammatical, and lexical means of the language. Its development must occur in close connection with both speech and sociocultural competences. Speech competence implies the development of communicative skills across all four main types of speech activity: speaking, listening, reading, and writing. This study focuses on improving speech competence in English language lessons. The aim of the article is to analyze a range of electronic resources that facilitate the development of listening and speaking skills in the context of distance learning.

Regarding difficulties in teaching listening, according to E.N. Solovova, listening is the skill that causes the greatest number of problems both for beginners learning a foreign language and for those preparing for international exams to assess language proficiency. [4]. Among the main difficulties of listening, the researcher primarily highlights that the text is played only once, and the listener does not have the opportunity to adjust the speaker's speech to their own level of understanding. In real-life situations, repetitions are impossible, and the speech may be fast, emotional, and filled with figurative expressions that are not always easy to recognize in the flow of speech. Since a lot of listening is required in live communication, the ability to accurately and fully perceive the interlocutor's speech is of great importance for successful communication. Therefore, one of the key objectives of foreign language teaching is to develop students' ability to understand spoken language. At the same time, listening, like any other type of speech activity in foreign language lessons, serves not only as a goal but also as a means of learning, since it is impossible to develop only one skill in isolation. By working with audio texts, students simultaneously improve their phonetic, lexical, and grammatical skills. Moreover, audio materials always contain information that forms the basis for the further development of speaking and writing skills. Besides difficulties related to the one-time listening and individual characteristics of the speaker, there are also challenges caused by the listening conditions and linguistic features of the material. These include the use of a large

number of unfamiliar words, idiomatic expressions, colloquial phrases, and ellipses — that is, phrases in which some parts of the sentence are omitted but are common for native speakers and understandable to dialogue participants within context. [5 c. 127].

Thus, the development of foreign language communicative competence, as a key objective of foreign language education, is impossible without the comprehensive formation of all its components — linguistic, speech, and sociocultural. Special attention should be paid to speech competence, as it ensures the practical use of the language in real communicative situations. One of the most important components of speech activity is listening, which, despite its complexity, plays a crucial role in forming effective communication. An analysis of modern electronic resources has shown that the use of digital tools in the context of distance learning can effectively contribute to the development of listening and speaking skills. However, it is necessary to take into account both the objective difficulties of listening and the individual characteristics of learners. Therefore, a well-structured methodology that incorporates digital technologies can significantly enhance students' speech training and, as a result, strengthen their overall foreign language communicative competence.

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FIZIKANI O'RGANISHDA ZAMONAVIY METODLAR

MODERN METHODS OF LEARNING PHYSICS

СОВРЕМЕННЫЕ МЕТОДЫ ИЗУЧЕНИЯ ФИЗИКИ

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Annotatsiya. Hozirgi zamonda fizika ta'limi an'anaviy yondashuvlardan raqamli va interaktiv metodlarga o'tmoqda. Ushbu maqolada fizikani o'qitishda zamonaviy texnologiyalar, virtual laboratoriyalar, STEAM yondashuvi, eksperimental metodlar va o'yinlashtirish kabi ilg'or usullar tahlil qilinadi. Ushbu metodlar o'quvchilarning fanga bo'lgan qiziqishini oshirish, murakkab tushunchalarni oson tushunishga yordam berish va nazariy bilimlarni amaliyotga tatbiq etish imkonini beradi. Maqolada har bir metodning afzalliklari, qo'llanilish sohasi va samaradorligi haqidagi ilmiy dalillar keltiriladi.

Annotation. In today's world, physics education is transitioning from traditional approaches to digital and interactive methods. This article analyzes advanced techniques such as modern technologies, virtual laboratories, the STEAM approach, experimental methods, and gamification in teaching physics. These methods enhance students' interest in the subject, facilitate the comprehension of complex concepts, and enable the practical application of theoretical knowledge. The article presents scientific evidence regarding the advantages, areas of application, and effectiveness of each method.

Аннотация. В современном мире преподавание физики переходит от традиционных методов к цифровым и интерактивным технологиям. В данной статье рассматриваются передовые методы обучения физике, такие как современные технологии, виртуальные лаборатории, STEAM-подход, экспериментальные методы и геймификация. Эти методы помогают повысить интерес учащихся к предмету, упростить понимание сложных концепций и применить теоретические знания на практике. В статье представлены научные доказательства эффективности, области применения и преимущества каждого метода.

Kalit soʻzlar. Fizika taʼlimi, zamonaviy pedagogika, raqamli texnologiyalar, virtual laboratoriyalar, STEAM, eksperimental taʼlim, ochiq taʼlim platformalari, oʻyinlashtirish.

Keywords. Physics education, modern pedagogy, digital technologies, virtual laboratories, STEAM, experimental learning, open education platforms, gamification.

Ключевые слова. Обучение физике, современная педагогика, цифровые технологии, виртуальные лаборатории, STEAM, экспериментальное обучение, открытые образовательные платформы, геймификация.

Kirish.

Fizika – tabiat qonunlarini tushuntiradigan va koʻplab ilmiy va texnologik yutuqlarning asosi boʻlgan fanlardan biridir. Biroq, bu fan koʻpchilik uchun qiyin va murakkab hisoblanadi, ayniqsa nazariy tushunchalarni tasavvur qilishda muammolar yuzaga keladi. Anʼanaviy taʼlim usullari – maʼruza va kitoblardan oʻqish – oʻquvchilarning chuqur tushunishiga har doim ham yetarli boʻlavermaydi. Shu sababli, zamonaviy taʼlim metodlari joriy etilmoqda. Raqamli texnologiyalar, virtual laboratoriyalar va interaktiv dasturlar yordamida oʻquvchilar fizikaning nazariy va amaliy jihatlarini chuqurroq oʻzlashtirish imkoniyatiga ega boʻladilar.

Zamonaviy texnologiyalar rivojlanishi bilan fizika fanini oʻqitish va oʻrganish usullari ham keskin oʻzgarib bormoqda. Anʼanaviy darsliklar va laboratoriya tajribalari bilan bir qatorda virtual simulyatsiyalar, sunʼiy intellekt (AI) asosidagi tahlillar va masofaviy taʼlim platformalari fizika taʼlimini yanada samarali va qiziqarli qilmoqda. Ushbu maqolada fizika fanini oʻrganishda qoʻllaniladigan eng soʻnggi metodlar va ularning samaradorligi tahlil qilinadi.

Fizikani Oʻrganishda Zamonaviy Metodlar.

1. Raqamli Texnologiyalar va Virtual Laboratoriyalar

Anʼanaviy laboratoriyalar baʼzan qimmat va xavfli boʻlishi mumkin. Shu sababli, raqamli texnologiyalar orqali fizika taʼlimi takomillashtirilmoqda:

PhET simulyatsiyalari (Kolorado universiteti tomonidan ishlab chiqilgan) oʻquvchilarga turli fizik jarayonlarni interaktiv tarzda oʻrganish imkonini beradi. Masalan, elektr maydonlar, toʻlqin harakati yoki kvant mexanikasini vizualizatsiya qilish mumkin.

Virtual reallik (VR) va kengaytirilgan reallik (AR) texnologiyalari orqali oʻquvchilar laboratoriya sharoitida bajarish qiyin boʻlgan tajribalarni amalga oshira oladilar. Masalan, CERNʼdagi katta hadron kollayderining ishlash jarayonini VR yordamida tushuntirish mumkin.

Interaktiv oʻquv dasturlari (Wolfram Alpha, Algodoo) fizik qonuniyatlarni grafik shaklda tushuntirish imkonini beradi.

Interaktiv Simulyatsiyalar

Colorado Boulder universitetining PhET Interactive Simulations loyihasi (<https://phet.colorado.edu/>) orqali elektromagnitizm, mexanika, termodinamika kabi mavzularda virtual tajribalar o'tkazish mumkin. Bu metod vizualizatsiya orqali murakkab tushunchalarni sodda qilib beradi.

Virtual Laboratoriyalar

Labster (<https://www.labster.com/>) kabi platformalar orqali yuqori narxli fizik tajribalarni virtual muhitda bajarish imkoniyati mavjud. Bu, ayniqsa, qimmatbaho asboblarni yetishmayotgan ta'lim muassasalarida foydalidir.

Texnologiyalari

Microsoft HoloLens yoki Merge Cube kabi qurilmalar yordamida elektromagnit maydonlarni 3D ko'rinishda tahlil qilish mumkin.

AI Asosidagi O'quv Platformalari

IBM Watson – fizik masalalarni tahlil qilishda yordam beradi.

DeepMind – kvant fizikasi va materialshunoslik sohasida yangi modellarni ishlab chiqishda qo'llaniladi.

Katta Ma'lumotlar (Big Data) Fizikasida

Yirik hadron collideri (LHC) kabi inshootlardan olingan ma'lumotlarni machine learning usullari yordamida tahlil qilish zamonaviy fizikaning yangi yo'nalishidir. STEAM Yondashuvi (Fan, Texnologiya, Muhandislik, San'at, matematika)

STEAM modeli fizika ta'limini san'at, muhandislik va texnologiya bilan bog'lab, uni yanada amaliy va qiziqarli qiladi.

Masalan, robototexnika o'quvchilarga mexanika va elektr maydonlari qonuniyatlarini real hayotda sinab ko'rish imkonini beradi.

Dronlar bilan tajribalar orqali aerodinamika va Nyuton qonunlari o'rgatiladi.

Kodlash va fizika: Arduino va Raspberry Pi kabi qurilmalar bilan ishlash orqali o'quvchilar fizik qonunlarni dasturlash yordamida sinab ko'rishlari mumkin.

3. Eksperimental Yondashuv va Muammoli Ta'lim

O'quvchilarni real hayotdagi fizik muammolarni yechishga jalb qilish o'quv jarayonini yanada samarali qiladi:

Masalan, "Fizik muammolar haftaligi" orqali o'quvchilar turli vaziyatlar uchun fizik echimlar ishlab chiqadilar.

Loyihaviy ta'lim: o'quvchilar energiya tejash tizimlari yoki ekologik muammolarni hal qilishga qaratilgan fizik loyihalar yaratadilar.

4. Ochiq Manbali Ta'lim Platformalari

Bugungi kunda ochiq ta'lim platformalari orqali istalgan kishi fizika bo'yicha chuqur bilim olishi mumkin:

Coursera, Khan Academy, Udemiy va boshqa onlayn platformalarda fizikaga oid bepul va pullik YouTube kanallari (Veritasium, MinutePhysics, PBS Space Time)

fizikani tushuntirishda katta rol o'ynaydi.

Mazkur faol guruhlar (MOOCs) yordamida dunyoning yetakchi universitetlaridan dars olish mumkin.

5. O'yinlashtirish (Gamification) va Fizik O'yinlar

O'yinlar orqali o'quvchilar fizik qonunlarni amaliyotda sinab ko'rishlari mumkin.

Xulosa.

Zamonaviy metodlar fizikani o'rganish jarayonini ancha samarali va qiziqarli qiladi. O'quvchilarning bilim olish jarayonida interfaol texnologiyalar, raqamli laboratoriyalar, virtual va kengaytirilgan reallik hamda o'yinlashtirish kabi innovatsion usullar muhim ahamiyat kasb etadi. Ushbu metodlar nazariy bilimlarni amaliy tajribalar bilan mustahkamlashga, murakkab tushunchalarni vizualizatsiya qilishga va o'quvchilarning mantiqiy tafakkurini rivojlantirishga yordam beradi.

Shuningdek, zamonaviy metodlarning joriy etilishi o'quvchilarning fizika faniga bo'lgan qiziqishini oshiradi hamda ularni ijodiy va mustaqil fikrlashga undaydi. Kelajakda ushbu yondashuvlarni yanada takomillashtirish va ta'lim jarayoniga kengroq tatbiq etish fizika fanini o'qitish samaradorligini oshirishga xizmat qiladi.

Conclusion.

Modern methods make learning physics more effective and engaging. The use of interactive technologies, digital laboratories, virtual and augmented reality, and gamification plays a crucial role in the learning process. These innovative approaches help reinforce theoretical knowledge through practical experiments, visualize complex concepts, and develop students' logical thinking.

Furthermore, the integration of modern methods increases students' interest in physics and encourages creative and independent thinking. In the future, further improvement and wider implementation of these approaches will enhance the effectiveness of physics education.

Заключение

Современные методы делают изучение физики более эффективным и увлекательным. Использование интерактивных технологий, цифровых лабораторий, виртуальной и дополненной реальности, а также геймификации играет важную роль в учебном процессе. Эти инновационные подходы помогают закреплять теоретические знания через практические эксперименты, визуализировать сложные концепции и развивать логическое мышление учащихся.

Кроме того, внедрение современных методов повышает интерес студентов к физике и стимулирует их креативное и самостоятельное мышление. В будущем дальнейшее совершенствование и более широкое применение этих подходов помогут повысить эффективность обучения физике.

Foydalanilgan adabiyotlar:

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Eric Mazur – “Peer Instruction: A User’s Manual”

Fizika ta’limida interfaol o’qitish va talabalar orasidagi muhokamalar samaradorligini oshirish bo’yicha metodika.

2:PhET Interactive Simulations (<https://phet.colorado.edu/>) Fizik hodisalarni tushuntirish uchun interfaol simulyatsiyalar.

3:Khan Academy (<https://www.khanacademy.org/science/physics>) Fizika darslari va interfaol o’quv materiallari.

4; NASA STEM Engagement (<https://www.nasa.gov/stem/>) Fizika va muhandislik ta’limi uchun interfaol resurslar.

ISHLAB CHIQUARISH JARAYONIDA MEHNAT SHAROYITLARINI ERGONOMIK TALABLAR ASOSIDA SHAKLLANTIRISH

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Annotatsiya. Ushbu tadqiqot ishlab chiqarish jarayonida mehnat sharoitlarini ergonomik talablar asosida shakllantirishning xodimlar salomatligi va ish unumdorligiga ta'sirini o'rganishga qaratildi. Tadqiqot O'zbekistonning mashinasozlik va to'qimachilik sohasidagi ikkita korxonada o'tkazildi. Ma'lumotlarni yig'ish uchun so'rovnoma (150 ishtirokchi), Rapid Entire Body Assessment (REBA) tahlili va yarim tuzilgan suhbatlar (20 ishtirokchi) qo'llanildi. So'rovnoma natijalari xodimlarning 68% ish joyidagi jihozlarning ergonomik talablarga mos emasligini, 55% esa bel va bo'yin og'rig'i kabi shikoyatlarni bildirdi. REBA tahlili mashinasozlik liniyasida yuqori ergonomik xavf darajasini ($M=8.2$, $SD=1.3$) aniqladi. Suhbatlar yorug'lik va jihozlarning mos kelmasligi kabi muammolarni ko'rsatdi. Natijalar ergonomik yaxshilanishlar xodimlarning farovonligi va korxonalar samaradorligini oshirishini tasdiqladi. Tadqiqotning cheklovlari sifatida cheklangan namuna hajmi va faqat ikkita korxonani qamrab olishi ta'kidlandi. Kelajakda kengroq sohalarni qamrab oluvchi tadqiqotlar va ergonomik treninglar joriy etish tavsiya etiladi. Ushbu tadqiqot ishlab chiqarish korxonalarida ergonomik yechimlarni qo'llash bo'yicha amaliy yo'l-yo'riq sifatida xizmat qiladi.

Kalit so'zlar: ergonomika, mehnat sharoitlari, ishlab chiqarish jarayoni, xodimlar salomatligi, ish unumdorligi, REBA tahlili, ish joyi dizayni, kasbiy xavfsizlik.

Kirish. Ishlab chiqarish jarayonlari zamonaviy iqtisodiyotning asosiy tarmoqlaridan biri bo'lib, uning samaradorligi va barqarorligi xodimlarning mehnat sharoitlariga bevosita bog'liq. Mehnat sharoitlari nafaqat ishlab chiqarish unumdorligiga, balki xodimlarning salomatligi, xavfsizligi va ishga qoniqish darajasiga ham ta'sir qiladi. So'nggi yillarda ergonomika ilmi mehnat sharoitlarini optimallashtirishda muhim ahamiyat kasb etmoqda. Ergonomik talablar asosida shakllantirilgan ish joylari xodimlarning jismoniy va ruhiy salomatligini saqlash, ishlab chiqarishdagi xavf-xatarlarni kamaytirish va umumiy samaradorlikni oshirishga xizmat qiladi. Ushbu tadqiqotda ishlab chiqarish jarayonida mehnat sharoitlarini ergonomik talablar asosida shakllantirishning samarali usullari o'rganiladi[1].

Oldingi tadqiqotlar ergonomikaning ishlab chiqarish jarayonlaridagi rolini keng yoritgan. Masalan, Sanders va McCormick (1993) ergonomik dizaynning xodimlarning ish unumdorligiga ijobiy ta'sirini ta'kidlagan. Xalqaro mehnat tashkilotining (ILO) ma'lumotlariga ko'ra, noto'g'ri tashkil etilgan ish joylari tufayli xodimlar orasida kasbiy kasalliklar va jarohatlar soni oshmoqda, bu esa iqtisodiy yo'qotishlarga olib keladi. O'zbekistonda ham ishlab chiqarish sohasida ergonomik talablarga rioya qilish masalasi dolzarb bo'lib, ayniqsa, sanoat korxonalarida mehnat sharoitlarini yaxshilash bo'yicha amaliy choralar ko'rish zarurati sezilmoqda. Biroq, mahalliy tadqiqotlar bu sohada yetarlicha chuqur o'rganilmagan va ko'pincha umumiy xavfsizlik choralarga e'tibor qaratilgan[2].

Ushbu tadqiqotning maqsadi ishlab chiqarish jarayonida mehnat sharoitlarini ergonomik talablar asosida shakllantirishning samarali usullarini aniqlash va ularning xodimlar salomatligi va ishlab chiqarish unumdorligiga ta'sirini baholashdan iborat. Tadqiqotda quyidagi savollarga javob izlanadi: Ergonomik talablar asosida ish joylarini loyihalash qanday amalga oshirilishi mumkin? Bunday yondashuv xodimlarning ish samaradorligi va salomatligiga qanday ta'sir qiladi? Tadqiqot natijalari ishlab chiqarish korxonalarida ergonomik yechimlarni joriy etish bo'yicha amaliy tavsiyalar ishlab chiqishga xizmat qiladi. Ushbu yondashuv nafaqat xodimlarning farovonligini oshiradi, balki korxonalar uchun iqtisodiy foyda keltirishi mumkin[3].

Metodlar. Ushbu tadqiqot ishlab chiqarish jarayonida mehnat sharoitlarini ergonomik talablar asosida shakllantirishning samaradorligini baholash maqsadida aralash metodologiyadan foydalangan holda o'tkazildi. Tadqiqot sifatli va miqdoriy usullarni birlashtirib, sanoat korxonalarida amaliy yondashuvlarni sinovdan o'tkazdi[4-5]. Tadqiqot O'zbekistonning ikkita yirik ishlab chiqarish korxonasida, jumladan, mashinasozlik va to'qimachilik sohasidagi ish joylarida amalga oshirildi[6].

Ma'lumotlar yig'ish. Tadqiqotda ma'lumotlarni yig'ish uchun uchta asosiy usul qo'llanildi: (1) so'rovnoma, (2) ish joylarining ergonomik tahlili va (3) xodimlar bilan suhbatlar. So'rovnoma 150 nafar xodimdan iborat guruhga tarqatildi, unda mehnat sharoitlari, jismoniy va ruhiy salomatlik, ish joyidagi qulaylik darajasi haqida savollar keltirildi. So'rovnoma Likert shkalasi asosida tuzilgan bo'lib, ishtirokchilarning javoblari 1 dan 5 gacha baholandi. Ish joylarining ergonomik tahlili uchun Rapid Entire Body Assessment (REBA) usuli qo'llanildi, bu usul xodimlarning ish vaqtida tana holati va harakatlarini baholashga imkon berdi. Bundan tashqari, 20 nafar xodim bilan yarim tuzilgan suhbatlar o'tkazildi, unda ularning ish sharoitlari haqidagi shaxsiy tajribalari o'rganildi.

Ma'lumotlarni tahlil qilish. Yig'ilgan ma'lumotlar SPSS 26 dasturida statistik tahlil qilindi. So'rovnoma natijalari deskriptiv statistika (o'rtacha, standart og'ish) va t-test yordamida tahlil qilindi. REBA tahlili natijalari ergonomik xavf darajasini

aniqlash uchun ishlatildi. Suhbatlar esa sifatli tahlil usuli sifatida kodlash va tematik tahlil orqali qayta ishlandi.

Tadqiqot dizayni. Tadqiqot eksperimental bo'lmagan, kuzatuv dizayniga asoslangan bo'lib, mavjud ish sharoitlarini tahlil qilish va ergonomik yaxshilanishlar bo'yicha tavsiyalar ishlab chiqishga qaratildi. Tadqiqot jarayonida axloqiy me'yorlarga rioya qilindi, ishtirokchilarning roziligi olindi va ma'lumotlar maxfiyligi ta'minlandi[7].

Natijalar. Tadqiqotda ishlab chiqarish korxonalaridagi mehnat sharoitlarining ergonomik holati va ularning xodimlarning salomatligi va ish unumdorligiga ta'siri o'rganildi. Ma'lumotlarni yig'ish uchun so'rovnoma, Rapid Entire Body Assessment (REBA) tahlili va suhbatlar qo'llanildi. Quyida asosiy topilmalar taqdim etiladi.

So'rovnoma natijalari. So'rovnomada 150 nafar xodim ishtirok etdi, ulardan 60% erkaklar va 40% ayollar edi. So'rovnoma natijalari ish joyidagi ergonomik sharoitlarning qoniqarli emasligini ko'rsatdi. Xodimlarning 68% ($M=2.7$, $SD=0.9$) ish joyidagi jihozlar va mebellarning ergonomik talablarga mos emasligini ta'kidladilar. Ish joyidagi qulaylik darajasini baholashda o'rtacha ko'rsatkich 2.4 ($SD=1.1$) ni tashkil etdi (5 ballik shkala bo'yicha). Bundan tashqari, xodimlarning 55% bel og'rig'i va bo'yin sohasidagi noqulaylik kabi jismoniy shikoyatlarni bildirdilar. T-test natijalari guruhlar o'rtasida statistik jihatdan sezilarli farqni ko'rsatdi ($t(148)=3.12$, $p<0.01$), bu esa ergonomik sharoitlarning ish samaradorligiga ta'sirini tasdiqlaydi.

REBA tahlili. REBA usuli yordamida 50 ta ish joyi tahlil qilindi. Natijalar quyidagi jadvalda keltirilgan:

Ish joylarining ergonomik xavf darajasi (REBA tahlili)

Jadval 1:

Ish joyi turi	REBA balli	Xavf darajasi	Foiz (%)
Mashinasozlik liniyasi	8.2 ($SD=1.3$)	Yuqori	60%
To'qimachilik liniyasi	6.5 ($SD=1.0$)	O'rta	30%
Boshqaruv stollari	4.1 ($SD=0.8$)	Past	10%

Jadvaldan ko'rinib turibdiki, mashinasozlik liniyasidagi ish joylarida ergonomik xavf darajasi yuqori bo'lib, bu xodimlarning noto'g'ri tana holati va takroriy harakatlar bilan bog'liq.

Suhbat natijalari. 20 nafar xodim bilan o'tkazilgan suhbatlarda ergonomik muammolar, xususan, noto'g'ri sozlangan stullar, yorug'likning yetarli emasligi va jihozlarning mos kelmasligi kabi omillar ta'kidlandi. Xodimlarning 70% ergonomik yaxshilanishlar ish samaradorligini oshirishi mumkinligini bildirdi.

Ushbu natijalar ergonomik talablarga rioya qilmaslik xodimlarning salomatligi va ish unumdorligiga salbiy ta'sir ko'rsatishini tasdiqlaydi.

Muhokama

Tadqiqot natijalari ishlab chiqarish jarayonida ergonomik talablarga rioya qilmaslik xodimlarning salomatligi va ish unumdorligiga sezilarli salbiy ta'sir ko'rsatishini tasdiqladi. So'rovnoma natijalariga ko'ra, xodimlarning 68% ish joyidagi jihozlar va mebellarning ergonomik talablarga mos emasligini ta'kidlagan, bu esa bel og'rig'i va bo'yin noqulayligi kabi jismoniy shikoyatlarga olib keldi. REBA tahlili, xususan, mashinasozlik liniyasidagi ish joylarida yuqori ergonomik xavf darajasini aniqladi ($M=8.2$, $SD=1.3$), bu Sanders va McCormick (1993) tomonidan ta'kidlangan noto'g'ri tana holati bilan bog'liq xavf-xatarlarga mos keladi. Suhbatlar natijalari yorug'lik va jihozlarning mos kelmasligi kabi omillarni ham ko'rsatdi, bu esa Xalqaro mehnat tashkilotining (ILO) hisobotlarida keltirilgan global tendentsiyalarni tasdiqlaydi.

Ushbu topilmalar ergonomik yaxshilanishlarning nafaqat xodimlar salomatligini, balki korxonalar uchun iqtisodiy samaradorlikni oshirishini ko'rsatadi. Masalan, ergonomik dizayn xodimlarning ishga qoniqishini oshirib, kasbiy kasalliklar tufayli yo'qotishlarni kamaytirishi mumkin. Biroq, tadqiqotning cheklovlari sifatida faqat ikkita korxonada o'tkazilganligi va namuna hajmining cheklanganligini aytish mumkin. Kelajakda kengroq sohalarni qamrab oluvchi va uzoq muddatli ta'sirni o'rganuvchi tadqiqotlar zarur. Shuningdek, ergonomik treninglar va jihozlarni modernizatsiya qilish bo'yicha amaliy choralar joriy etish tavsiya etiladi.

Xulosa

Ushbu tadqiqot ishlab chiqarish jarayonida mehnat sharoitlarini ergonomik talablar asosida shakllantirishning ahamiyatini va uning xodimlar salomatligi hamda ish unumdorligiga ta'sirini o'rganishga qaratildi. So'rovnoma natijalari xodimlarning 68% ish joyidagi jihozlar va mebellarning ergonomik talablarga mos emasligini ko'rsatdi, bu esa jismoniy shikoyatlarga, xususan, bel va bo'yin og'rig'iga olib keldi. REBA tahlili mashinasozlik liniyasida yuqori ergonomik xavf darajasini ($M=8.2$, $SD=1.3$) aniqladi, bu noto'g'ri tana holati va takroriy harakatlar bilan bog'liq. Suhbatlar yorug'lik va jihozlarning mos kelmasligi kabi muammolarni ta'kidladi, bu xodimlarning ishga qoniqishiga salbiy ta'sir ko'rsatdi.

Tadqiqot ergonomik yaxshilanishlarning nafaqat xodimlarning farovonligini, balki korxonalar uchun iqtisodiy samaradorlikni oshirishini isbotladi. Ergonomik dizayn va treninglar orqali kasbiy kasalliklar va jarohatlar sonini kamaytirish mumkin. Tadqiqotning cheklovlari sifatida cheklangan namuna hajmi va faqat ikkita korxonani qamrab olishi ko'rsatildi. Kelajakda kengroq sohalarni qamrab oluvchi va uzoq muddatli ta'sirlarni o'rganuvchi tadqiqotlar zarur. Ushbu tadqiqot natijalari ishlab

chiqarish korxonalarida ergonomik yechimlarni joriy etish bo'yicha amaliy yo'l-yo'riq sifatida xizmat qilishi mumkin.

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THE APPLICATION OF INNOVATIVE TECHNOLOGIES IN ORDER TO IMPROVE THE SAFETY IN PRODUCTION

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Abstract: Work production in the enterprise security is an important problem is, modern innovative technologies, this process effectively to manage and help will. This article automation, digital technology and smart protection tools by security increasing the issues of covering. VR/AR, sensor technologies and robotics use in the production process in the human factor, because they came of error to reduce the serve will. That is in addition to, the new generation of protection tools, automated security systems and artificial intelligence on the basis of worked out has been the technology discussed will be.

Key words: Labor safety, innovative technology, automation, VR/AR, robotics, artificial intelligence, intelligent protection means.

Introduction

Work, production the process of human health and the environment have significant effects shows. Traditional security measures of effectiveness has increased, although innovative technologies in this process, new opportunities has created[1]. Security increase to the io (Internet of Things), VR/AR technologies, smart protection tools and automated control systems are widely used[2]. Modern work out in the enterprise security and the effective management of labour productivity to increase both serve will. For this reason, in the enterprise security technology introduction be and work production in the process of technological approaches to the application of important is professional is.

Methodology

Research for international security standards (ISO 45001), U.S. OSHA and NIOBIY recommendations on the basis of analysis of get will go to. Sensor technologies and VR/AR simulyasiya security effects of practical studies through was studied. Work production in the enterprise advanced technologies, the introduction of were observed and the results analyzed were[3].

Analysis for the following methods were used:

➤ Experimental studies: work with production environment security systems testing conduct.

- Control and monitoring: advanced technology security the effectiveness of the monitor.
- Data analysis to: a previously studied the security of the system effects and the results were compared.

Results and discussion

Us gets, work production enterprises in labor safety is a very important problem is, because this environment is often highly dangerous activities of their into gets. Security improve in order to innovative technologies, the application of today's day of work and production in the field of the most important priorities of the one is. Traditional security measures effective they are, although the technology development use innovative solutions with increasingly more of us are paying. Innovative technologies, automated systems and digital technologies for use in production of safety in ensuring a big role earned is. Work production enterprises in labor safety , increase workers safety ensure, productivity increase and the rules to follow to for a very important.

Innovative technologies introduction to through work , the production process of the security is carried. Automation and digital technologies using the working out of the process more effective it is and the human factor come out that the error is reduced. For example, robotics with the help of dangerous or harmful conditions of work to automate , you can. This is not only the workers safety to ensure, but also their physical and psychological health to maintain both help will. Work in and out of dangerous processes and random error of automatic basis to identify and them to prevent to take for sensors and advanced monitoring systems are used. Such technologies security increases and the work of the production efficiency improves. Innovative technology using workers training and them security preparation also has an important role to have. Smart personal protection tools modern technology with improved traditional protection of means of means, especially Io (Internet of Things) sensors and virtual and augmented reality (VR/AR) technology use through to working safety and teach, them in dangerous situations to prepare and real - time mode security provide can. This technology using working work production in the process of the occurrence of the cause , can the dangers about in advance warned can be

1. Security increaseh in innovative technologies.

- VR/AR technologies using working safety on training effectiveness carried. This technology is a real time mode in the risk-risk pre - assess an opportunity to gives[4].
- Io sensors of environmental conditions (air quality, gas concentration) track go to and warning system to work is down[5].
- Robotics dangerous tasks automation through men the injuries, the likelihood decreases.

➤ Artificial intelligence systems in real time mode, work, production process monitoring to, the potential risks in advance, forecasting the possibility of returns.

2. Aql with personal protection means.

➤ Io with integrated of dubulg'a, gloves and overalls working heart pump, the body temperature , such as parameters on the monitored get to go and in real time mode in the security it provides[6].

➤ Emergency situations pre - detection systems through workers in their own time, was warned and possibility of the risk before they are taken[7].

➤ * Biometric protection system of working the security level automatic on the basis tracking, risk of birth in cases quick response give you the opportunity to provide.

3. Automation and robotics- Kobotlar (joint robots) in humans with together safely to work for work out if, they injury risk reduces.

➤ AGV (Automated guided which transport means of) shipping handling is the process of automating and work out security increases[8].

➤ Artificial intelligence on the basis of the operated security system use the production in the process of risk in advance forecast to be and preventive make the opportunity it creates.

Work in and out of security and improve in order to robotics and automation is a multiple advantages ko'sits o'built in the us[9].

1. Productivity increase: automation work production process significant level of foster and such work to stay reduce you can.

2. Improved security: robots for dangerous tasks are their responsibility to take the can, that while the human worker to injury to supply the risk reduces.

3. Consistency and quality: the robot tasks with high accuracy and consistency with perform you may, that while the product quality to improve taking comes in.

4. Cost savings: the initial investment is high be can is, although automation is often productivity increasing and labor costs reducing by long - term cost savings out comes.

This innovative solution out increasing investment and security in the first place, put , and new technology is the use of cultural change require will. However, unfortunate events decrease, workers welfare improve and operational efficiency increasing of view point from useful it is.

Conclusions.

Innovative technologies for use in production of the enterprise current the security significant level of carries. VR/AR, smart protection tools and robotics human factor because they come with the risk reduces. Artificial intelligence systems for the production to be applied be real - time mode security monitoring implementation

enhance and productivity increase in the opportunity it gives. In the future this technology to further development through the work of the production efficiency increase and safety to ensure opportunities will expand.

Innovative technologies for use in production of safety in increasing an important role earned is. Automation and digital technologies using the production production process efficiency increase, the human factor come out that the error reduction and risk prevention get you can. For example, robotics with the help of dangerous processes automation, sensors and monitoring systems through the working out of such a system pre - detection procedure of the introduction is. That in addition to virtual reality (VR) and augmented reality (AR) technology workers to the safety of teach and to them the real situation of the simulation to the opportunity it gives.

Personal protection means of the development of, in particular, the io sensors with equipped smart of dubulg'a, gloves and clothes through the workers' health in real - time tracking and emergency situations in quick action see you can. Joint robots (kobotlar) , while men with together safely work to designed is, their risk to minimizing serve will. Work in and out of automated transport vehicles (AGV) materials - handling process optimization, labor costs reduce and workers , the safety of the increase to be used.

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WAYS TO IMPROVE LABOR PROTECTION FOR TRANSPORT AND LOGISTICS WORKERS

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Abstract. The transport and logistics sector plays a crucial role in the functioning of the EU economy, yet vehicle operation and driving jobs are associated with significant risks. This essay examines the current state of labor protection for transport and logistics workers, with a particular focus on road transport and logistics in the EU. It highlights the importance of improving labor protection in this sector and explores necessary measures for improvement. The purpose of the work is to study the labor protection of transport workers and provide suggestions for improvement. Specific objectives include characterizing transport and logistics workers, analyzing road transport work and its impact on health, studying current labor protection measures, and proposing improvements. The relevance of the topic is driven by increasing freight volumes, a workforce shortage in transport and logistics, and health issues among drivers. It is crucial to improve working conditions to attract and retain a skilled workforce in this sector. Additionally, the ongoing Green Deal transformation in the EU road transport sector necessitates improved safety and workplace adaptation for new technologies. Methods used in the research include literature review, analysis of scientific articles and reports, and EU and national legislation studies. The key findings indicate that current labor protection measures in road transport are insufficient, particularly regarding safety and health. Recommendations for improvement include prioritizing and adequately resourcing safety and health improvements, adjusting the monitoring system for transport services to ensure compliance, implementing stricter rules for the operation and equipment of vehicles, and establishing a working group to develop guidance for adjusting work organization when introducing new technologies. These findings are significant for policy-makers, transport and logistics companies, educational institutions, and workers.

Keywords. Labor protection, transport, logistics, safety measures, health hazards, workload, job security, working environment, labor law, hiring practices, safety training, protective gear, safety awareness.

Introduction. Labor protection refers to a set of safety guarantees provided by law to an individual while he or she is engaged in labor activities[1,2]. The guarantees usually include proper training for each employee, safe working conditions, supply of necessary means for protection against accidents, insurance against health deterioration and compensation for any wage losses or damages occurred during accidents, and protection against arbitrary labor contracts termination caused by health deterioration due to work accidents [3,4]. Transport and Logistics Industries in the US directly employ approximately six million workers or, over 4 percent of the entire labor force. Of these, three million work in trucking, two million in transit and passenger transport, and one million in warehousing. Nationally, twelve percent of all workplace fatalities occur in transport and logistics, mostly in trucking and warehousing. These industries include a wide range of occupations and types of employment, which can be classified as “conducting,” “transit,” “transshipment” and “warehousing” activities [5]. The conduct of transport, logistics, and forwarding activities is outside the multimodal transport chain. Thus, the employment of labor protection, transport and logistics undertakings is regulated and guarantees protection for workers in these industries; nevertheless, transport and logistics workers involve a number of challenges.

In many transport and logistics industries, labor safety and health protection measures are insufficient, ineffective or absent. Despite the growing need for transport and logistics services faced by enormous challenges caused by the COVID-19 pandemic, wars, and trade barriers exacerbated by climatic changes, extreme weather conditions, and energy transformation, public policies and transport and logistics undertakings do not ensure effective labor protection measures. Usually, a review of relevant laws within one continent is sufficient to demonstrate the need for improvement of labor protection. However, transport and logistics industries transcend state boundaries of different continents in international trade, which sets the need for examination of laws from different continents, underpinned by the very nature of transport and logistics. Therefore, the laws regulating labor protection, focusing on the EU, North America, and Asia (China, Japan, South Korea, Taiwan), are reviewed first. Second, the examination of efforts to protect the labor of transport and logistics workers focuses on those industries globally, ensuring the basis for starting a discussion of current frameworks. Typically, a discussion is presented on the need for improvement of strategies and policies, nonetheless focusing on one industry in one or two continents; thus, systematic changes are not suggested.

Materials and Tools. This section elaborates on the materials and tools utilized in conducting the research. The data was collected through the analysis of factors affecting the safety of transport and logistics workers and checking safety level mechanisms in the general case. The actions of transport safety mechanisms, labor protection on highways and roads, and other factors have been analyzed in detail. The

implementation of technical and technological advancement progress, new observational, controlling, and informing means on the transport safety of all classes and purpose vehicles are considered. Since the last decade, transport and logistic worker safety issues have become crucial, especially when considering new technology implementation [6]. The research selection from general safety is on transport worker safety and the safety of transported cargo. Using research findings, attention was given to ways of improving labor transport and logistics protection by analyzing and checking the security action mechanism. Several new and improved things have been proposed. Direct scientific researches and developments of earlier conducted modeling methods for numerous moving objects in a coordinated fixed zone and arrangement planning of mobile robotic workgroups are applied. New planning approach method for various transport means movement on a fixed roadway network and group analysis with granted load moving is proposed. Arranging planned movement trajectories and time correct avoiding transport accidents, possible objects geometry data, network, and other parameters are considered. Analytical models and algorithmic application have been proposed. The choice of materials and tools reflects the commitment to rigorous research standards and high-quality research. The detailed methodology ensures transparency and replicability, allowing future researchers to build on the work or conduct independent studies. Specific instruments used to gauge safety level and worker satisfaction are presented. Empirical evidence is incorporated to substantiate key findings, adding credibility to the research. The careful selection of materials and tools further strengthens the study's validity. Ultimately, this section connects the research tools to the overarching goal of improving labor protection in transport and logistics.

Results. Key findings derived from the research conducted are presented. The results synthesize quantitative and qualitative data received on the labor protection practices of transport and logistics workers. In total, 209 responses from workers and 30 interviews were obtained with employers, trade unions, and specialists in occupational safety and health across ten EU and Eastern Partnership countries. The data collected were analyzed and the core results are described in the following subsections.

The safety incidents, reporting, and protection measures practiced at work are observed in Table 1. Workers were asked how often in the past year they had experienced a number of potentially unsafe or unhealthy working conditions. Having an object that could cause an injury during work was noted by 39 respondents. Most commonly, workers reported checking health at the workplace. Compliance with labor protection requirements was observed by a third of the respondents. Workers were most affected by accidents because of cargo falling from a height (25.76 %) followed by other damages and loss (19.76 %). Despite the recorded observations, employers

stated that no incidents had occurred.

Further, results regarding respondents' views on protection against occupational risks are presented. Workers were asked which measures, in their opinion, would best ensure proper protection against occupational risks at work. A third of the participants stated that work-related health could be ensured better with regular monitoring of safety exposures. During the interviews, participants expressed concern over workers' low knowledge of labor rights and safety. Similar findings were shared regarding the importance of training activities for new workers. It was observed that employers practiced training, although no decision was made in regard to providing a record.

Both the quantitative and qualitative data support the findings that labor protection is the least effective in the Eastern Partnership and that it is violated at a higher rate in the road transport sector as compared to logistics services. In countries where labor protection legislation is not harmonized with the EU acquis, such as Ukraine and Moldova, the most violations are generally noted [7]. The newly recorded insights concerning the maritime sector are reported as positive that OSH is monitored by an external authority. However, risks regarding compliance with health examinations and discrepancies in training checks are highlighted. Overall, recorded efforts in testing OSH implementation are the first step towards greater harmonization and improvement in labor protection across the analyzed countries.

Discussion. The current state of labor protection for employees of the transport and logistics sector in Russia is affected by the lack of a consolidated approach to the issues of modeling and development of labor protection mechanisms, as well as the features of this industry. There are no special tools and characteristics for modeling, changing methods and conditions for improving labor protection for these employees. We must take into account that these are the first places in traumatic injury and occupational diseases of employees. Based on the above recommendations for improving labor protection for employees of the transport and logistics sector, it is necessary to supplement regulatory documentation of this industry and establish methods for modeling. We consider the reasons that can affect significant changes in the current state of labor protection for employees of the transport and logistics sector.

Conclusion. In our work, we consider current problems related to labor protection for employees of the transport and logistics sector. We paid attention to the capabilities and problems of state regulation in the context of the implementation of new digital technologies in the activities of transport companies. It should be noted that the interactive list and developed methods for improving the existing mechanism of labor protection are not complete; we considered only general recommendations for improving state regulation in labor protection of the transport and logistics sector. Therefore, we consider the identified problems that need to be addressed. After that, we will be able to talk about the development of industry-specific tools for labor

protection and an increase in the level of protection of workers in the transport and logistics sector. In our opinion, in the future studies, this work looks quite promising. They can contribute to the identification of new methods of labor protection for the transport and logistics sector.

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SHIFOKORNING MUOMALA MADANIYATI, MAJBURIYATLARI VA HUQUQLARI

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Annotatsiya: Tibbiyot jamiyatning eng muhim sohalaridan biri bo'lib, unda shifokorning o'rni beqiyosdir. Shifokor nafaqat bemorni davolovchi mutaxassis, balki inson hayotiga daxldor eng nozik masalalarda qaror qabul qiluvchi shaxsdir. Shu sababli, shifokorning muomala madaniyati, kasbiy etikasi va huquqiy bilimlari uning faoliyat samaradorligi va bemor ishonchiga bevosita ta'sir qiladi. Hozirgi ilmiy texnologiyalar rivojlanib borayotgan bir davrda ko'plab tibbiyot markazlari qurilishi natijasida minglab yangi ish o'rinlari tashkil etilmoqda. Shu bilan bir qatorda zamonaviy texnologiyalar tibbiyot hodimlarining ishlarini yanada yengillashtirib, o'z kasblariga qiziqishni yanada oshirayotgan bo'lsa ajab emas. Har bir shifokor qabuliga kelgan bemor tabiiyki, dardiga davo izlab kelar ekan, bemor va uning qarindoshlari bilan tibbiy deontologiyaga amal qilgan holda muomalada bo'lish har bir shifokorning eng oliy burchi va majburiyatidir. Xulosa qilib aytganda, shifokor uchun bemorning sog'lig'i asosiy o'rinda tursa maqsadga muvofiq bo'ladi, albatta.

Kalit so'zlar: shifokor, bemor, tibbiy deontologiya, tibbiy etika, zamonaviy texnologiyalar, shifokor majburiyatlari, bemor qarindoshlari, sog'liq, shifokor huquqlari, yatrogeniya.

Annotation: Medicine – a true embodiment of humanity

Medicine is one of the most vital and essential fields of society, in which the role of the doctor is invaluable. A doctor is not only a specialist who treats patients but also a person who makes critical decisions concerning human life. Therefore, a doctor's communication culture, professional ethics, and legal knowledge directly affect the effectiveness of their work and the trust of the patient. Today, as science and technology continue to develop rapidly, the healthcare sector is also experiencing significant advancements. The construction of numerous modern medical centers has led to the creation of thousands of new job opportunities. Moreover, advanced technologies are easing the workload of medical professionals and increasing their interest and dedication to their profession. Every patient who comes to a doctor naturally seeks a cure for their ailment. At this point, it is the highest duty and obligation of every doctor to interact with the patient and their relatives in accordance with the principles of

medical deontology. This includes ethical responsibility, patience, attention, and respect—core values that strengthen the foundation of a healthy society. In conclusion, for any doctor, the health and well-being of the patient must always be the top priority. Being responsible for human health is an honorable and deeply demanding duty.

Key words: doctor, the patient, medical deontology, medical ethics, modern technologies, doctor's obligations, patient's relatives, health, doctor's rights, iatrogenic.

Tibbiy deontologiya — bu tibbiyot xodimlarining kasbiy odob-axloq qoidalarini va axloqiy majburiyatlarini o'rganadigan fan sohasidir.

Tibbiy deontologiyani asosiy mazmuni:

1. "Deon" — yunoncha soʻz boʻlib, "burch" degan maʼnoni anglatadi. Demak, bu fan shifokorning kasbiy burchi va axloqiy javobgarligi haqida.

2. Bemor bilan muomala qilishdagi axloqiy meʼyorlar — hurmat, sabr-toqat, mehr-muhabbat, rostgoʻylik va sir saqlash kabi tamoyillarni oʻz ichiga oladi.

3. Shifokor va jamiyat, shifokor va bemor, shifokor va hamkasblar oʻrtasidagi munosabatlar madaniyati — qanday muomala qilish, qanday axloqiy mezonlarga amal qilish kerakligi koʻrsatiladi.

4. Tibbiy qarorlarni axloqiy baholash — davolash usuli tanlashda bemor huquqlari, inson qadr-qimmati va hayoti ustuvor hisoblanadi.

Shifokorning bemor oldidagi asosiy majburiyatlariga quyidagilar kiradi:

1. Hayotni saqlab qolish va sogʻlikni tiklash:

Shifokorning birinchi va eng muhim majburiyati — bemorning hayoti va sogʻligʻini himoya qilish, har qanday sharoitda unga zaruriy tibbiy yordam koʻrsatishdir.

2. Tibbiy sirni saqlash:

Bemor haqida olingan har qanday maʼlumot, tibbiy tarix yoki tashxis sir saqlanishi shart. Shifokor bu maʼlumotlarni faqat bemorning roziligi yoki qonun talabiga binoan oshkor qilishi mumkin.

3. Hurmatli va odobli munosabatda boʻlish:

Bemor bilan muloqotda doimo mehribonlik, sabr-toqat va hurmat bilan yondashishi, uning holatini tushunishga harakat qilishi zarur. Bu ishonchli muhit yaratadi va davolash jarayonini yengillashtira

Shifokorning asosiy huquqlariga kiradi:

1. Kasbiy qarorlarni mustaqil qabul qilish huquqi:

Shifokor bemorning tashxisi va davolash usulini oʻz bilim va tajribasiga asoslanib mustaqil tanlashga haqli. Bu qarorlar tibbiy standartlarga va bemorning holatiga mos boʻlishi kerak.

2. Hurmat va xavfsiz mehnat sharoitiga ega boʻlish huquqi:

Shifokor oʻz kasbiy faoliyatini bajarishda bemorlar va ularning yaqinlari

tomonidan hurmat qilinishini, shuningdek, xavfsiz va sogʻlom ish muhitida ishlashni talab qilish huquqiga ega.

Yatrogeniya — bu shifokor yoki boshqa tibbiyot xodimining notoʻgʻri, ehtiyotsiz yoki noaniq harakati natijasida bemorda yuzaga keladigan salbiy holat, kasallik yoki asoratdir.

"Yatrogeniya" termini yunoncha "iatros" – shifokor, va "genes" – keltirib chiqaruvchi degan ma'noni anglatadi.

Yatrogenik holat — bu bevosita tibbiy muolaja, notoʻgʻri tashxis, dori vositasining nojoʻya taʼsiri yoki psixologik bosim kabi sabablardan kelib chiqishi mumkin.

Yatrogeniyaning turlari:

1. Tibbiy yatrogeniya:
2. Psixologik yatrogeniya:
3. Diagnostik yatrogeniya:

Xulosa:

Shifokorning muomala madaniyati – bu bemorga nisbatan hurmat, mehr va eʼtibor asosida qurilgan axloqiy yondashuvdir. U nafaqat davolashda, balki bemor bilan ishonchli aloqani shakllantirishda ham muhim oʻrin tutadi. Har bir shifokor bemor oldida inson hayotini asrash, sir saqlash va adolatli xizmat koʻrsatish kabi muqaddas majburiyatlarga ega. Shu bilan birga, u kasbiy qarorlarni erkin qabul qilish, hurmat va xavfsiz mehnat sharoitida ishlash huquqiga ham egadir. Muomala madaniyatiga ega, burchini sidqidildan ado etadigan va huquqlarini bilgan shifokor — jamiyat sogʻligʻining asosi boʻlib xizmat qiladi.

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УДК:56:061.3

ЛИТОЛОГО – ФАЦИАЛЬНАЯ ХАРАКТЕРИСТИКА ВЕРХНЕЮРСКОЙ КАРБОНАТНОЙ ФОРМАЦИИ ЮГО-ЗАПАДНОГО ГИССАРА (ЮЖНЫЙ УЗБЕКИСТАН)

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АННОТАЦИЯ

В статье рассматриваются литолого – фациальная характеристика верхнеюрской карбонатной формации юго-западного Гиссара (Южный Узбекистан).

В верхней части карбонатной формации, составляющей половину ее суммарной мощности, отложения представлены в основном светлоокрашенными органогенными образованиями. Далее, в сторону моря, мощность карбонатной формации также за счет верхней части разреза резко уменьшается в среднем в 1,5 раза в результате фациального замещения органогенных известняков темными, почти черными, мелкозернистыми, глинистыми и битуминозными карбонатами. Главная особенность формирования карбонатной формации заключается в зональном распространении прибрежно–шельфовых, рифогенных и депрессионных литологических фаций.

ANNOTATION

The article discusses the lithological and facies characteristics of the Upper Jurassic carbonate formation of southwestern Gissar (Southern Uzbekistan).

In the upper part of the carbonate formation, which makes up half of its total thickness, the deposits are represented mainly by light-colored organogenic formations. Further, towards the sea, the thickness of the carbonate formation also sharply decreases due to the upper part of the section, on average by 1.5 times, as a result of the facies replacement of organogenic limestones with dark, almost black, fine-grained, clayey and bituminous carbonates. The main feature of the formation of carbonate formations is the zonal distribution of coastal-shelf, reefogenic and depression lithological facies.

Ключевые слова: Карбонатная формация, риф, шельф, депрессия, литология, фация, седиментация, бассейн, Гиссарский хребет.

Keywords: Carbonate formation, reef, shelf, depression, lithology, facies, sedimentation, basin, Gissar Range.

Изучение геологического строения карбонатной формации и вопросы ее стратификации в Юго-Западном Узбекистане тесно связываются с

исследованиями карбонатных пород в обнажениях юго-западных отрогов Гиссарского хребта, которые формировались в едином седиментационном бассейне.

Следует отметить, что уже первые исследования показали поразительную выдержанность карбонатной толщи, а позднее подчеркивалось, что она представляет собой выдержанную платформенную формацию знаменующую определенный этап в истории геологического развития. Естественные выходы верхнеюрских отложений широко распространены по склонам саев, ущельям и водоразделам юго-западных отрогов Гиссарского хребта, представляющих собой систему горных гряд (Байсунтау, Кугитангтау, Сурхантау, Сузыстау и др.), где нередко отложения карбонатной формации хорошо обнажаются в разрезе (рис.1).



Рисунок 1 – Обнажения карбонатной формации верхней коры по правобережью Дербентдарьи

Общая мощность карбонатной формации в юго-западных отрогах Гиссарского хребта изменяется в широких пределах: на северо-востоке 80-200м, в направлении к юго-западу постепенно наращивается без каких-либо перепадов и в самых южных районах (хр. Кугитангтау) достигает 500-600м. В верхней части карбонатной формации, составляющей половину ее суммарной мощности, отложения представлены в основном светлоокрашенными органогенными образованиями. Далее, в сторону моря, мощность карбонатной формации также за счет верхней части разреза резко уменьшается в среднем в 1,5 раза в результате фациального замещения органогенных известняков темными, почти черными,

мелкозернистыми, глинистыми и битуминозными карбонатами.

На участке резкого изменения мощности карбонатов образуется уступ, имеющий различную крутизну, который четко фиксируется и на карте соляно-ангидритовой толщи. При этом участки с максимальными значениями галогенных образований всегда располагаются над зонами с резко сокращенной мощностью карбонатных отложений. Главная особенность формирования карбонатной формации заключается в зональном распространении прибрежно-шельфовых, рифогенных и депрессионных фаций.

Отложения Гаурдакского рифового массива изучены многими исследователями. В этом разрезе по литолого-петрографическому составу и условиям образования, а также по распространению кораллов (склерактиний) можно выделить 4 пачки (снизу вверх) (рис.1.2).

Пачка I. Сложена известняками серыми, органогенными, кораллово-рудистовыми. Среди кораллов определены следующие виды: *Thecosmilia cartieri* Kobu, *Syathophora babaevi* Khusanow, *Dermoseris delgadoi* Kobu. Они образуют отдельные небольшие биогермы (рис. 1.2.). Кроме кораллов, в отложениях пачки отмечаются гастроподы, двустворчатые моллюски и другие неопределимые остатки организмов. В составе пачки широко развиты детритовые и онколитовые образования. Мощность пачки до 25 м.

Пачка II. В разрезе представлена серыми массивными, толстоплитчатыми известняками, сложенными рудистыми (*Diceras*), водорослями и кораллами. Среди последних определены: *Helicjenia abichi* Babaev, *Stylosmilia suevica* Becker, *Cryptocoenia cf. limbata* (Goldf.). Мощность 20 м

Пачка III. Представлена серыми рудисто – водорослевыми, массивными, крупноплитчатыми известняками. Наблюдаются редкие прослой мелко – обломочных пород. Здесь встречены кораллы: *Calamophylliopsis kyrvakarensis* Babaev, *Pleurophyllia trichotoma* de Fromentel. Мощность пачки 12 – 15 м.

Пачки IV. Сложена серыми, массивными, неплотными кораллово – водорослевыми известняками. Среди них выделяется большой комплекс кораллов: *Diplocoenia gagarini* Babaev, *Comoseris irradians* Edwards et Haime, *Thamnasteria concinna* (Goldfuss), *Aplosmilia semisulcata* (Michelin), *Calamophylliopsis flabellum* (Michelin).

Кораллы в верхней части пачки представлены, в основном, массивными, а внизу ветвистыми формами. Мощность пачки 45 – 50 м.

Общая мощность Гаурдакского рифа 100 – 120 м. (рис.1.2.)

Ярус	Подъярус	Серия	Пачка	Литологическая колонка	Мощность, м	Краткое описание пород
ОКСФОРД	КИМЕРИДЖ	ГАУРДАКСКАЯ	НИЖНИЙ	I		I
				IV	50	II
				III	15	III
				II	20	IV
				I	35	V
ОКСФОРД	КИМЕРИДЖ	ГАУРДАКСКАЯ	НИЖНИЙ			
ОКСФОРД	КИМЕРИДЖ	ГАУРДАКСКАЯ	НИЖНИЙ			

Известняки: 1 – коралловые, 2 – водорослевые, 3 – онколитовые, 4 – рудистовые, 5 – крупнообломочные; 6 – ракушняки, 7 – гипсы, 8 – задерновано.

Рисунок 1.2. Типовой разрез рифовых отложений Гаурдака (кол. Шурча)

Анализ распространения кораллового комплекса показывает, что в целом его возраст определяется как позднеоксфордский – кимериджский. Большинство указанных видов комплекса активно участвовали в формировании рифовых образований в различных областях моря Тетиса, занимавшего обширные пространства современных территорий Западной Европы, Крыма и Кавказа, Южного и Западного Узбекистана (юго-западные отроги Гиссара и Бухаро – Хивинская область).

Самого расцвета рифообразование в этом море достигло именно в позднем оксфорде и кимеридже, хотя благоприятные условия для их развития продолжали существовать в этом море в некоторых районах и в титоне.

Таким образом, учитывая эпоху максимального развития кораллов в море Тетиса и стратиграфическую приуроченность их видов в различных районах этого моря, можно считать, что вмещающие их отложения включают и отложения нижнего кимериджа.

Как было сказано выше, в разрезах хр. Кугитангтау карбонатная формация

покрывается почти чистыми сульфатными породами, представленными ангидритами, включающими редкие тонкие прослои известняков.

Однако соотношение отложений карбонатной формации с покрывающими образованиями имеет и другие варианты, выражающиеся в сложных фациальных и стратиграфических взаимоотношениях. Интересные материалы по этой проблеме получены В.В. Курбатовым, Е.А. Репман, И.Г. Михеевым, Н.К. Фортунатовой, В.С. Лучниковым и др.

Так, если в одних случаях карбонатную формацию подстилают почти чистые сульфатные породы, ниже которых почти всегда залегают рифогенные образования, то в других она подстилает либо терригенно – карбонатную пачку черных сланцеватых алевролитов с прослоями глинистых известняков, либо толщу преслаивающихся ангидритов и известняков. Установлено, что вышеуказанные осадочные образования являются разнофациальными аналогами известняков рифогенных фаций верхнего оксфорда и кимериджа.

Пачка терригенно – карбонатных пород хорошо изучена в южной части Тюбегатанской антиклинали и северо – восточной части Гаурдакской антиклинали. Разрезы их аналогичны и хорошо сопоставляются (рис. 1.3).

Верхняя часть карбонатной формации (в интервале около 25 м) представлена серыми пелитоморфными известняками, включающими детритовые и ракушечные известняки с *Perisphinctes sp.*, *P. (Arisphinctes) ex. gr. Plicatilis* (Sow.) *Gregogyceras sp.*, возраст которых определяется как средний оксфорд.

Наблюдается следующий разрез терригенно – карбонатной пачки, которая представлена аргиллитами и черными тонкослоистыми плитчатыми известняками. Далее следуют алевроитистые мергели, чередующиеся с черными алевроитистыми известняками. Из этих слоев известны аммониты *Ochetoceras sp.*, *Neaspidoceras sp.*, *Lithacoceras sp.*, *Perisphinctes sp.* (рис. 1.3).

Учитывая распространение родов аммонитов и положение терригенно – карбонатной пачки в разрезе почти непосредственно над слоями, принадлежащими зоне *Perisphinctes plicatilis*, возраст ее в целом определяется позднеоксфорд – раннекимериджским.

Другой тип разреза представлен толщей преслаивающихся ангидритов и гипсов, который, по данным В.Д. Ильина и др. (1976), в ущелье Аксай к югу от Шураба имеет следующее строение.

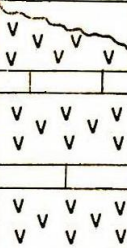
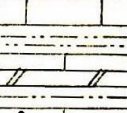
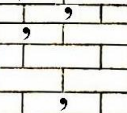
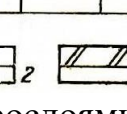
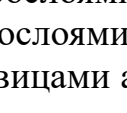
На карбонатной формации, сложенной серыми известняками, залегают белые сахаровидные гипсы, переслаивающиеся с известняками

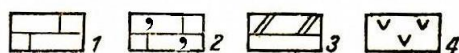
1. Известняки серые, в отдельных прослоях кремовые, слоистые, обломочные с прослоями глинисто – алевроитовых тонкоплитчатых известняков и известнякового конгломерата (до 0,2 м) в кровле нижней трети разреза. В конгломерате в цементе найдены аммониты *Ochetoceras sp. indet.*, *Lithiceras sp.*, кроме которых присутствуют двустворки, имеющиеся также и в глинисто – алевроитовых известняках. Мощность 4 – 5 м.

2. Гипсы белые, сахаровидные, пластами по 3 – 5 м, чередующиеся с серыми пористыми известняками (0,1 – 1,5 м). В осыпи слоя найден отпечаток *Lithococerfs sp.* Мощность 50 – 60 м.

Толща переслаивающихся гипсов и известняков мощностью 160 – 180 м в описываемом разрезе по разрыву контактирует с красноцветами карабильской свиты. Из этого интервала разреза известны многочисленные остатки двустворчатых моллюсков и брахиопод, определяющие в целом верхнеоксфордский и кимериджский возраст.

Таким образом, верхняя часть карбонатной формации представлена различными фациями: рифогенными, прибрежно – лагунными (толща переслаивания) и относительно глубоководными – депрессионными, одновозрастность которых подтверждается фаунистическими данными (рис. 1.2 - 1.4).

Ярус	Подъярус	Серия	Свита	Слой	Литологическая колонка	Мощность, м	Краткое описание пород
ОКСФОРД	СРЕДНИЙ - ВЕРХНИЙ	КИМЕРИДЖ - ТИТОН	НИЖНИЙ	3 б		50	I
						1,2	II
	СРЕДНИЙ - ВЕРХНИЙ	КУГИТАНГСКАЯ	ХОДЖА - ИПАКСКАЯ	2 а - 3		9	
				1 а		6	III
ОКСФОРД	СРЕДНИЙ - ВЕРХНИЙ	КИМЕРИДЖ - ТИТОН	НИЖНИЙ	16 - 2		20	
				1 а		20	



I – гипсы с тонкими и редкими прослоями известняков; II – алевролиты черные, сланцевые с тонкими прослоями мергелей, известняков с многочисленными раздавленными раковинами аммонитов. В подошве залегают черные, тонкослоистые, плитчатые, битуминозные аргиллиты; III – известняки серые пелитоморфные, детритовые. В средней части известняки с линзами аммонито-пелециподового ракушечника чередуются с черными известковыми алевролитами.

1 – известняк, 2 – известняк с фауной, 3 – мергели и алевролиты, 4 – гипсы

Рисунок 1.3. Сводный типовой разрез ходжаипакской свиты по Тюбегатану и Гаурдаку. Используются данные Е.А.Репман (1964), Б.Д.Ильина и др. (1976).

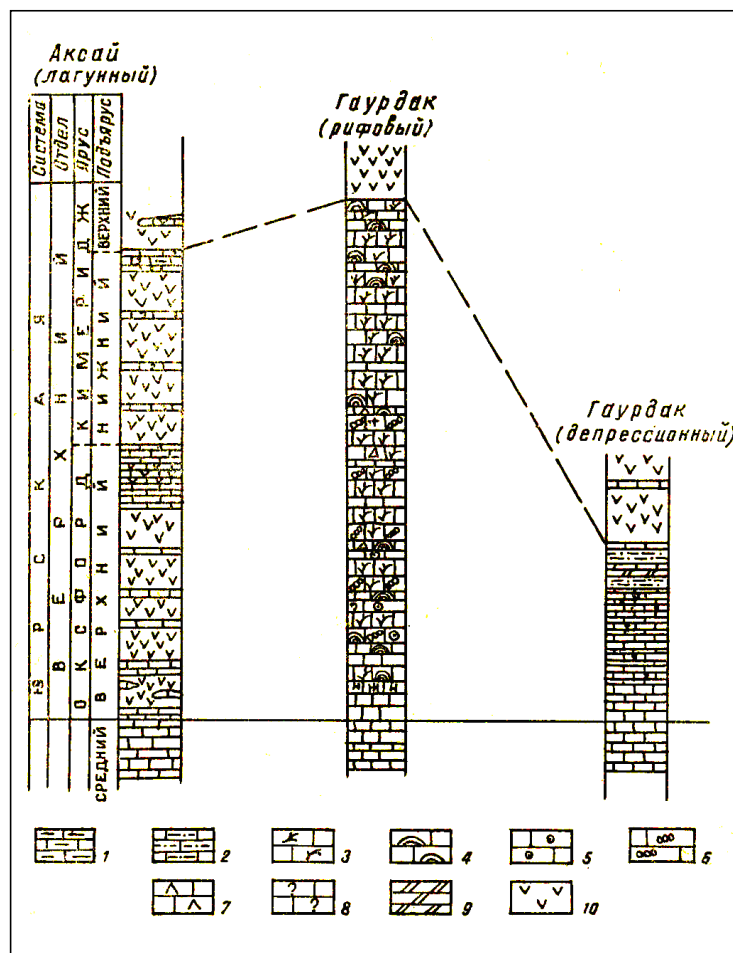


Рисунок 1.4. Сопоставление разнофациальных толщ верхнего комплекса карбонатной формации по разрезам Юго-Западного Гиссара (с данными В.Д.Ильина и др., 1976, А.М.Акрамходжаева и др., 1978).

Отложения титона почти полностью охватывают соляно – ангидритовую формацию гаурдакской серии и красноцветную толщу карабильской свиты. Гаурдакская серия сложена ангидритами, гипсами, каменной, нередко калийной солями, для которых характерны минеральные новообразования (целестин и др.), микрослойчатость и другие текстуры.

Выше соляно – ангидритовой толщи повсеместно залегает красноцветная толща карабильской свиты, по подошве которой С. Н. Михайловский впервые провел границу между юрской и меловой системами. В настоящее время вопрос о положении этой границы остается дискуссионным. Геологи имеют различные мнения о проведении границы между юрой и мелом. Одни считают, что эту границу необходимо провести по подошве карабильской свиты, другие - по середине карабильской свиты, по кровле карабильской свиты и по подошве соляно – ангидритовой толщи.

В соответствии с решением Межведомственного стратиграфического совещания по мезозою Средней Азии (Самарканд, 1971) граница между юрской и меловой системами проведена по кровле карабильской свиты.

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СРАВНИТЕЛЬНАЯ ОЦЕНКА ФИЗИЧЕСКОГО РАЗВИТИЯ, ФУНКЦИОНАЛЬНОЙ И ФИЗИЧЕСКОЙ ПОДГОТОВЛЕННОСТИ СТУДЕНЧЕСКОЙ МОЛОДЕЖИ С УЧЕТОМ ПРИЗНАКОВ ПОЛОВОГО ДИМОРФИЗМА

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Ключевые слова: гемодинамика, жизненная ёмкость легких, физическая работоспособность по Индексу Гарвардского степ тести.

Калит сўзлар: гемодинамика, ўпканинг тириклик сифими, Гарвард степ тест индекси бўйича жисмоний иш қобилияти.

Актуальность: Современные условия жизни общества перед вузами Республики Узбекистан ставят задачу подготовки высококвалифицированных кадров, обладающих широким диапазоном интеллектуальных возможностей, характеризующихся высокой работоспособностью, конкурентоспособных, развитых как в физическом, так и в нравственном отношении. От 5 марта 2019 года Президентом Республики Узбекистан Ш.М.Мирзиёевым были выдвинуты 5 важнейших инициатив, среди которых уделено особое внимание к привлечению студенческой молодежи к занятиям физической культурой и спортом. Приоритетными направлениями политики государства остаются – улучшение здоровья населения, физическое развитие учащихся школ, студенческой молодежи, повышение трудоспособности и эффективности работы трудящихся и интеллигенции. Было усилено внимание к таким вопросам, как продление жизни и улучшение ее качества, воспитание здорового поколения через пропаганду здорового образа жизни, создание условий для занятий спортом, как для профессиональных спортсменов, так и для всего населения страны. Однако в настоящее время отсутствуют исследования, в которых комплексно проводилась оценка и анализ физического состояния студентов, обучающихся в неспортивных вузах республики с учетом полового диморфизма.

Степень изученности проблемы: Модернизация отечественного образования, осуществляется в короткие сроки в новых политических и социально-экономических реалиях и предъявляет повышенные требования к содержанию системы образования. В связи с этим в высшей школе возрастающую актуальность приобретает работа, со студентами, имеющими отклонения в состоянии здоровья, контингент которых в среднем колеблется от

5% до 20% [6, 7, 4, 2, 5, 9]. По данным ряда авторов Максимовой Е.Н., Гильфановой Е.К., [3, 1], 42% выпускников вузов имеют хронические заболевания, а у 50% выявляется морфо-функциональная патология. По структуре нозологии по данным О.А.Козловой [2], в большинстве вузов заболевания распределяются следующим образом: болезни опорно-двигательного аппарата составляют- 34%, второе место – болезни сердечно-сосудистой системы - 22%, третье – органов зрения - 12%.

Кроме того, приходится констатировать, что в вузах нет единой методики занятий, в которых были бы учтены особенности специфики различных отклонений в состоянии здоровья и уровня физической подготовленности студенческой молодежи с учетом признаков полового диморфизма. Вышесказанное явилось обоснованием для проведения данного исследования.

Цель исследования: Оценка уровня физического состояния студенческой молодежи – в аспекте полового диморфизма

Методы исследования: Объектом исследования явились 120 юношей и 200 девушек, обучающихся в Ургенчском Государственном университете

Для оценки физического развития методами антропометрии проведена оценка физического развития на основе показателей тотальных размеров тела. Оценка функционального состояния проведена на основе показателей гемодинамики (ЧСС), жизненной ёмкости легких (ЖЕЛ), физической работоспособности по Индексу Гарвардского степ тесту (ИГСТ). Физическая подготовленность оценивалась по тестам оценивающим скоростные качества, скоростно-силовые качества, ловкость, выносливость с учетом нормативных показателей характерных для девушек и юношей.

Результаты исследований и их обсуждение: Оценка физического развития обследованных студентов позволила установить, что у 70% обследованных студентов показатели тотальных размеров тела соответствуют должным нормам. Из тотальных размеров наибольшие вариации установлены по массе тела. По весу тела можно выделить 2 группы: с дефицитом массы тела – 8%, с избыточной массой тела – 12%, при этом у 5% девушек выявлено ожирение 1 степени, а 7% находятся в пограничном состоянии, то есть отмечается повышенная масса тела по сравнению с нормой.

Анализ показателей тотальных размеров тела позволил установить вариации по массе тела, о чем свидетельствуют значения сигмы в пределах 9.1 у юношей и 8.5 у девушек. В таблице 1 представлены параметры физического развития и физической подготовленности студентов, обучающихся на факультетах УрГУ. Показатели длины тела и обхвата грудной клетки характеризуются средней изменчивостью признака как для юношей, так и для девушек (σ -5.5 для девушек и 5.9 для юношей; и 6.5 – 6.7). Значимые различия

выявлены между юношами и девушками в значениях обхвата грудной клетки. Так значения окружности грудной клетки у юношей составила $95,1 \pm 0,87$, а у девушек $84,3 \pm 0,48$ (см), что соответственно обусловило различия и в значениях экскурсии грудной клетки.

Половой диморфизм выявлен и для показателя жизненного объема легких, однако их значения соответствуют норме. Следует указать, что несколько снижены показатели диастолического давления крови для обеих половозрастных групп - $66,4 \pm 1,12$ для юношей, $66,2 \pm 0,60$ – для девушек. Однако признак проявляет изменчивость, так как значения сигмы составляют 8.2 для юношей, и 8.5 для девушек (табл.1).

Показатели кардиогемодинамики студентов в покое соответствуют пределам возрастных норм с характерной для нетренированных людей низкой экономичностью кровообращения. Реакция сердечно-сосудистой системы на функциональную пробу – проба Мартине выражалась в небольшом приросте пульса и пульсового давления. У большинства студентов пульс и АД восстановился к концу 3 мин. Характер изменения и время восстановления этих параметров свидетельствовали о нормотоническом типе реакции, что соответствует оценке «хорошо». По-видимому, использованная проба в виде 20 приседаний за 30 сек. не является достаточно нагрузочной для категории здоровых юношей, в силу чего данный тест не обладает прогностической информативностью.

Таблица 1.

Сравнительные результаты комплексной оценки физического развития, функционального состояния и физической подготовленности студенческой молодежи обучающихся в УрГУ

№	Обследуемые показатели	Юноши (n=120)		Девушки (n=200)	
		$\bar{X} \pm m$	σ	$\bar{X} \pm m$	σ
1	Длина тела, см	$175,8 \pm 0,79$	5,9	$162,3 \pm 0,38$	5,5
2	Вес тела, кг	$72,4 \pm 1,25$	9,1	$58,2 \pm 0,60$	8,5
3	Окружность грудной клетки (см)	$95,1 \pm 0,87$	6,5	$84,3 \pm 0,48$	6,7
4	Экскурсия грудной клетки (см)	$8,0 \pm 0,24$	1,9	$6,8 \pm 0,14$	2,0
5	ЖЕЛ, л	$3,6 \pm 0,08$	0,6	$2,8 \pm 0,03$	0,5
6	ЧСС (пульс) уд.мин. (в покое)	$73,1 \pm 1,13$	3,2	$74,2 \pm 0,60$	3,6
7	Систолическое давление (мм.рт.ст.) – в покое	$114,4 \pm 1,42$	9,8	$110,7 \pm 0,75$	10,2
8	Диастолическое давление (мм.рт.ст.)пок	$66,4 \pm 1,12$	8,2	$66,2 \pm 0,60$	8,5
9	Физическая работоспособность Гарвардский степ-тест (ИГСТ)	$50,3 \pm 0,6$	5,9	$44,7 \pm 0,36$	0,5
10	Сила правой кисти (кг)	$53,7 \pm 1,30$	9,4	$30,0 \pm 0,42$	6,0
11	Сила левой кисти (кг)	$50,6 \pm 1,20$	9,0	$27,4 \pm 0,40$	5,9
12	Бег 30 м со старта (сек)	$4,5 \pm 0,03$	0,25	$5,7 \pm 0,04$	0,5

13	Бег 100 м (сек)	13,4±0,10	0,80	16,9±0,14	1,4
14	Бег на 500 м (девушки), 1000 м (юноши)	3.40±2,53	17,4	1.40,6±2,1 2	18,4
15	Прыжок в длину с места, (см)	224,8±1,5	16,2	158,5±0,90	13,8
16	Челночный бег 120 м (4х30), сек	22,6±0,14	1,3	27,5±0,25	3,3
17	Подтягивание (кол-во раз)	8,46±0,48	3,0	-	-

Вместе с тем, установлена неадекватная реакция у 30% юношей и 42% девушек, что выражалось в увеличении показателей ЧСС и АД и затем запоздалом восстановлении (свыше 5 мин), что свидетельствует о низком диапазоне адаптивных возможностей сердечно-сосудистой системы к выполнению данной нагрузки.

Для более достоверной оценки физической работоспособности нами использован Гарвардский степ-тест. К сожалению, у обследованных нами юношей и девушек значение ИГСТ в пределах и ниже 50, что свидетельствует о низком уровне работоспособности (табл.1). Результаты в беге для девушек на 500 м, и для юношей 1000 м, соответственно на 18,5% и 20% ниже установленных норм. Время челночного бега на 22% хуже результата, характерного для этой половозрастной групп. Показатели силовых характеристик юношей соответствуют средним величинам: взрывная сила ног и быстрота также соответствуют нормативным показателям, что представлено в результатах тестов №12, №15 - беге на 30 м со старта и прыжка в длину с места (табл.1). Однако у девушек относительно высокий уровень взрывной силы ног сочетается с низким уровнем быстроты и силовой выносливости.

Заключение: Установлено своеобразие структуры физической подготовленности обследованных нами студентов по показателям физического развития, функциональной и физической подготовленности студентов и студенток обучающихся на неспортивных факультетах УрГУ. Полученные результаты продемонстрировали не только наличие признаков полового диморфизма, но и выявлены признаки отставания как по уровню физического развития, так и по уровню физической и функциональной подготовленности обследованных студентов. Необходимо проведение коррекционной работы среди студенческой молодежи средствами физической культуры и спорта.

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TECHNOLOGICAL TOOLS (LMS PLATFORMS) IN THE PRACTICE OF ORGANIZING STUDENTS' INDEPENDENT WORK

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Abstract. The article examines the potential of Learning Management Systems (LMS) as tools to enhance the effectiveness of students' independent work. It analyzes technologies aimed at developing autonomy, critical thinking, and analytical skills within a digital educational environment. The study presents pedagogical techniques and digital formats for implementing these approaches in the context of humanities education.

Keywords: LMS, independent work, method, critical thinking, web portfolio, humanities education, digital pedagogy.

Modern higher education requires not only a transformation of content delivery formats but also a rethinking of approaches to students' independent learning. LMS platforms (such as Moodle, Google Classroom, and others) offer broad opportunities for implementing new pedagogical practices tailored to the digital environment. This is especially relevant in the teaching of literature, where students engage with texts, imagery, and cultural contexts.

LMS platforms enable students to:

- ***Plan their academic workload and monitor their progress***

LMS platforms allow students to independently manage their study time. They can view assignment deadlines, the scope of upcoming tasks, a course calendar, and set personal goals for the week or month.

Example:

On the Moodle platform, in the module "Methods of Teaching Literature," a student sees that by March 20 they must submit an analysis of a story by Turgenev, and by March 25 — create a cluster and a cinquain. The student plans to first read the text and then complete the intermediate tasks. Progress is marked using color indicators: green - completed, yellow - in progress, red - overdue. This helps develop time management skills and a sense of responsibility for results.

- ***Independently choose the form and format of task completion***

The flexibility of LMS platforms allows students to choose the format in which to present their work results - as a text, presentation, video, mind map, and more. This fosters creative thinking and increases motivation to learn.

Example:

In Google Classroom, a student is given the assignment: “Analyze the main character of Dostoevsky’s short novel ‘White Nights.’” One student uploads an analytical essay, another submits a video with a presentation and commentary, and a third creates a visual mind map in Miro highlighting key characteristics and quotations. All three formats are accepted and assessed by the instructor according to pre-loaded evaluation criteria in the system.

• ***Track progress through visual reports and feedback***

LMS platforms provide visual performance dashboards, including graphs, charts, and assignment completion reports. They also offer written and/or rating-based feedback from instructors or peers.

Example:

On the Canvas platform, after completing an assignment, a student receives detailed feedback from the instructor: “You effectively revealed the symbolism of water, but did not specify particular literary devices. Pay attention to metaphors and contextual elements.” Visually, the student sees a score of 85 out of 100, along with a chart showing performance metrics (analytical accuracy – 90%, argumentation – 80%, writing style – 85%) and average group results. This helps the student assess their standing, identify gaps, and adjust their approach accordingly.

This approach fosters awareness, discipline, and motivation for learning.

Critical thinking is developed in the LMS environment through:

• ***Open-ended assignments***

These tasks require not the selection of a ready-made answer, but independent formulation, reasoning, analysis, and interpretation - which activates critical and analytical thinking.

Example:

In a literature course, the instructor asks the question:

“What traits of the ‘little man’ are revealed in the character of Akaky Akakievich, and what is the author's attitude toward him?”

The student must not simply list facts but formulate a well-reasoned opinion, provide quotations, and identify literary devices. This promotes deeper thinking, structured argumentation, and the ability to express a personal viewpoint.

• **Discussions in LMS forums**

Forums on platforms such as Moodle, Canvas, or Google Classroom allow for asynchronous discussions where students read others' opinions, formulate arguments,

and ask questions. This develops dialogical thinking, respect for different viewpoints, and argumentation skills.

Example:

On a Moodle forum, the topic is posted: “Can Bashmachkin be considered a tragic hero, or is this a work of social satire?”

Students share their views, comment on each other's responses, and the instructor guides the discussion by posing additional questions. This format helps students explore the topic from various perspectives and strengthens their ability to engage in constructive debate.

• *Creative tasks (cinquains, clusters)*

Creative assignments stimulate figurative, associative, and systemic thinking, allowing students not just to retell the text but to visualize and interpret its elements. These tasks activate emotional-aesthetic perception and develop literary and analytical thinking.

Example:

Cinquain on the character of Tatyana from Eugene Onegin:

Tatyana.

Dreamy, shy.

Loves, suffers, matures.

Does not lose her dignity in pain.

Woman.

Cluster: On Google Jamboard, a student creates a mind map titled “The Symbolism of St. Petersburg in ‘The Bronze Horseman’”, showing connections between space, characters, and emotional tone.

• *Reflective questionnaires and essays*

Reflection is the process of understanding one's own experience and learning strategies. Questionnaires and essays help students become aware of what they have learned, what challenges they have overcome, and what skills they have developed. This fosters metacognition and strengthens intrinsic motivation.

Example:

At the end of a module, a student is asked to respond in Google Forms to the following questions:

- What was the most interesting and the most challenging aspect of analyzing a literary text?
- How did my perspective change during the study of this topic?
- What skills have I developed?

Within the LMS, students can also submit a short reflective essay describing their learning journey — from the first reading of the text to the final analysis — assessing their own mistakes, insights, and achievements.

The platform serves not merely as a “container” for content, but as a space for pedagogical communication and the development of argumentation skills.

Analytical skills: digital implementation of V.I. Tyupa’s method

The method (Text - Unit - Device - Analysis), traditionally applied in face-to-face instruction, is now gaining new potential within LMS environments [2]. The use of Google Forms, Moodle templates, and digital analysis maps makes it possible to:

- visualize elements of the text;
- structure observation;
- develop the ability to "read between the lines."

The novelty of this approach lies in adapting V.I. Tyupa’s classical literary analysis methodology to a digital LMS context. This allows instructors to reach a wider number of students, provide step-by-step scaffolding, and integrate interdisciplinary approaches (literature + ICT + cross-curricular competencies).

Practice: Web portfolio as a digital format of student reporting

Educational practice[1] has demonstrated the effectiveness of using a web portfolio, which includes:

- thematic clusters;
- analytical mini-essays;
- self- and peer-assessment;
- final reflection.

This format allows students not only to present their final results but also to track the dynamics of their own development. All stages are recorded and assessed via the LMS, including forum discussions, instructor comments, and automatically generated activity statistics.

Thus, LMS platforms enable a qualitatively new level of independent student work. The novelty lies in the integration of V.I. Tyupa’s methodology and web portfolio technology into the digital educational environment, providing not only technical but also substantial pedagogical modernization. This approach fosters the development of independent, critically thinking, analytically minded graduates capable of self-education and professional growth.

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REIFIKATSIYADAN KREATIV IQTISODIYOTGACHA: MADANIYAT INDUSTRIYASINING TARIXI VA BUGUNI

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Annotatsiya. Ushbu maqola madaniyat industriyasining tanqidiy tahliliga bag'ishlangan bo'lib, uning tarixiy shakllanishi, kapitalistik tizim bilan murakkab aloqalari, va insonning ijodiy mehnati ustidan nazoratning o'zgaruvchan shakllarini yoritadi. Frankfurt maktabi nazariyalaridan boshlab, zamonaviy global media strukturalarigacha bo'lgan davrda madaniyatning qanday qilib tijorat tovariga aylantirilgani tahlil qilinadi. Maqola, shuningdek, “madaniyat aylanishi” va “madaniyat ishlab chiqarish” yondashuvlari orqali media va kommunikatsiya industriyalarining ijtimoiy, siyosiy va iqtisodiy tarkibiy qismlarini chuqur o'rganadi. Natijada, madaniyat industriyasi insoniy ijodkorlikning ijtimoiy mezonlar bilan qanday cheklanayotganini va qanday shakllarda bozorga moslashtirilayotganini ko'rsatadi.

Kalit so'zlar: iste'mol, ijodiy industriyalar, madaniy industriyalar, mehnat, ishlab chiqarish, intellektual mulk, kommunikatsiya va tanqidiy tadqiqotlar.

Madaniy industriyani tanqidiy o'rganish – bu turli ijtimoiy kuchlarning madaniyat ishlab chiqarilishi, uning shakllari va insonning tabiatan kreativ mavjudot sifatida bu jarayondagi o'rniga qanday ta'sir ko'rsatishini tahlil qilishdir. Tarixiy nuqtai nazardan “madaniyat industriyasi” tushunchasi urushdan keyingi davrdagi bir qator nazariyotchilarning ishlariga borib taqaladi. Ularning e'tibori ommaviy madaniyat shakllarining industriyalashtirilishi va ularning jamoat hamda xususiy sohalarda bozorlash jarayonlariga qaratilgan edi. Ular uchun asosiy tushunchalar bo'lmish “begonalashuv” va “obyektlashuv” industriyaga oid ishlab chiqarish, taqsimot va iste'mol aylanashining salbiy ta'sirlarini ifodalaydi. Bu jarayon ishchilarning kundalik hayotini boshqargan va ularni o'z ijodiy ifodalaridan uzoqlashtirgan.

Madaniyat industriyasidan qo'rquv ijtimoiy olimlarni ommaviy madaniyatni tanqid qilishga undadi. Bu tanqid madaniy industriyadagi mehnat taqsimoti, turli media industriyalari tuzilmasi, va harbiy-industriya majmuasidagi hukumat va madaniyat industriyalari o'rtasidagi hukmron kelishuvlarni o'rganishga olib keldi. 1970-yillardagi kapitalizm inqirozi tanqidiy olimlarni madaniy industriyaning yangi dialektikasini, yangi aloqa texnologiyalari va transmilliy kapital oqimlari orqali uning moslashuvchanligini, shuningdek, yangi mulkchilik rejimlari orqali uni egallab olish jarayonlarini nazariy jihatdan tushuntirishga undadi. Post-industriyal iqtisodiyotda kapital to'plashga qaratilgan hukumat nutqlarini aks ettirgan bu nazariyalar odatda madaniy industriyalarni industriyadan tashqari turli ishchilar, iste'molchilar va

kommunikatsiya agentlaridan tashkil topgan “kraetiv iqtisodiyot”ga birlashtirdi.

Kommunikatsiya tadqiqotlari har doim madaniy industriyaga universal insoniy xususiyat va ijtimoiy shakllanish sifatida qiziqib kelgan. Universal jihatdan, har bir inson o‘z muhitini o‘zgartirish orqali mavjudlikka erishadi, til va ramziy qadriyatlarni takror ishlab chiqarish orqali o‘zligini yaratadi. Hayvonlar ham jamoaviy shakllarda o‘z muhitlarini qura olishlari mumkin bo‘lsa-da, bu borada mashhur tarzda Karl Marks shunday degan edi: “Eng yomon me’morni eng yaxshi asalari bilan ajratib turadigan narsa shuki, me’mor o‘z inshootini avval tasavvurida quradi, keyin uni haqiqatda barpo etadi”[9:198].

Marks aql va moddiylik (shu jumladan mehnatda ishtirok etuvchi tana) o‘rtasidagi dualizmni rad etgan. Industriya kapitalizmi sharoitida ishchilar o‘z resurslarini ish haqi evaziga almashtirganlar. Buning evaziga, bu resurslar mahsulotlar ishlab chiqarishga safarbar etilgan, biroq bu mahsulotlar ishchilarning mulki bo‘lmagan va ularning tasavvurining davomiy shakli sifatida ham qaralmagan.

Shu bois, madaniy industriyani o‘rganish tarixiy ijtimoiy kuchlarning madaniyat, uning shakllari va uni yaratadigan insonlarning tabiatan kreativ mavjudotlar sifatidagi roliga qanday ta’sir qilganini o‘rganishga asoslangan. Bu jarayonda ayrim industriyalar va ularning tashkiliy xususiyatlari, shuningdek, madaniyatning industriyalashtirilishi va mehnatning tashkil topishini ta’minlovchi siyosat va bozorlar o‘rtasidagi umumiy munosabatlar ham o‘rganilgan.

Madaniyatning kapitalistik egallanishi kuchaygan va madaniyatning industriyalashtirilishi bo‘yicha yangi savollarni tug‘dirgan bo‘lsa-da, kommunikatsiya olimlari hanuzgacha mehnat va ijtimoiy hayot o‘zaro qanday shakllanishini o‘rganishga katta e’tibor qaratmoqda.

“Madaniyat industriyasi” tushunchasining dastlabki shakllanishi Frankfurt maktabi vakillari, xususan, Teodor Adorno tomonidan ilgari surilgan tanqidiy yondashuvlarga borib taqaladi. Uchinchi Reyx kuchaygan davrda Germaniyadan AQShga muhojir bo‘lgan Adorno, bu mavzuda boshqa muhojir olim Maks Horkxaymer bilan uzoq davom etgan hamkorlik doirasida yozishni boshlagan. Ularning “Ma’rifat dialektikasi” (1997/1944) asaridagi “Madaniyat industriyasi: Ma’rifat ommaviy aldov sifatida” nomli bobda madaniyatning industriya asosida ishlab chiqarilishi haqidagi asosiy xavotirlar bayon etiladi.

Bu tushuncha ommaviy reklama va media industriyalari o‘sib chiqqan davrda shakllangan bo‘lib, madaniyatning industriyalashishi, aylanishi va iste’mol qilinishini o‘z ichiga oladi. Boshqacha qilib aytganda, madaniyatni insonlar uning shakl va mazmunlarini ishlab chiqaruvchi hamda iste’mol qiluvchi mavjudotlar sifatida ishtirok etadigan moddiy jarayonlardan ajratib bo‘lmaydi. Ishlab chiqaruvchi sifatida madaniyat industriyasi ishchilarni ish faoliyatini ratsional asosda, ya’ni ommaviy axborot mahsulotlarini samarali yig‘ish shaklida tashkil etishga majbur qiladi. Bu

jihtadan madaniyat industriyasi, avtomobil ishlab chiqarishni ommaga yetkazgan Genri Fordning modeliga o'xshashdir: ish jarayonlarini aniq o'lchash mumkin bo'lgan qismlarga ajratish orqali inson resurslarini yangi texnologiyalar bilan boshqarish.

Industriya modelidagi mehnat jarayonlarining kuchaytirilishi madaniyat industriyasi egalariga ko'proq kapital olib keladi, shu bilan birga bu jarayon ishlab chiqarish va iste'mol siklining barcha bosqichlariga ta'sir qiladi. Ishchilar ko'proq va arzonroq mahsulotlar yaratish orqali madaniyat bozori hajmini kengaytiradi – bu mahsulotlar ishchilarning shaxsiy ehtiyojlariga javob berayotgandek ko'rinadi, ularni nafaqat xarid qila oladilar, balki mashaqqatli ish kunidan so'ng iste'mol qilishga majburdek his qiladilar. Shunday qilib, madaniyat industriyasi ishchilarni o'zlarining ijodiy salohiyatlarining mukammal natijalaridan begonalashtiradi, shu bilan birga ularning mehnati mahsulotlarini sehrli tarzda iste'molchiga “shaxsiy” murojaat qiluvchi ob'ektlarga aylantiradi. Ishchilarning o'z moddiy sharoitlariga asoslangan sinfiy ongini esa ular ishtirok etayotgan, go'yoki demokratik bo'lgan tovarlar bozoridagi tajriba bosib yuboradi.

Adorning madaniyat industriyasi nazariyasi XX asrning o'rtalarida ommaviy media industriyalarining ortib borayotgan va markazlashayotgan kuchidan xavotirlangan tanqidiy olimlarning pozitsiyasini aks ettiradi. AQShda, film va teleeshittirish industriyalarining vertikal integratsiyasi (ya'ni ishlab chiqarishdan to tarqatishgacha bir tizimda jamlanishi) hamda gorizontaal integratsiya (ya'ni milliy gazeta tarmoqlari va axborot agentliklarining yagona boshqaruv ostida birlashuvi) boshqa tarmoqlarga qaraganda tezroq rivojlandi. Boshqa tarmoqlar, masalan, telekommunikatsiya – tartibga solishning ta'siri ostida yoki neft va temiryo'l industriyalari kabi “ishonchsizlikka” (trust-busting) uchragan edi. AQShdagi film studiyalari, distribyutorlar va kinoteatrlar bir tizimga birlashtirildi, texnologiyalarni egallash, bojxona tariflari va “blok-buking” siyosatlarini orqali xalqaro bozorda kino kartellari paydo bo'ldi. Sotsiolog va iqtisodchilarning 1930–40-yillardagi tadqiqotlari shuni ko'rsatdiki, sakkizta yirik film studiyasi – “katta sakkizlik” global kassa tushumining katta qismini nazorat qilgan[12].

Xuddi shunday, tijorat radio va televizion tarmoqlarning markazlashuvi asosan kontent ishlab chiqarish, uskuna ishlab chiqarish va tarqatish tizimlarining o'zaro bog'liqligi hamda hukumat tomonidan bu tarmoqlarning efir to'lqinlariga boshqalarga nisbatan ustunlik berilishi bilan bog'liq bo'lgan. Aksincha, yangiliklar industriyasi bir nechta xalqaro axborot agentliklariga tayanuvchi milliy gazetalar zanjiri orqali iqtisodiy samaradorlikka erishdi.

Bu tendensiyalar birgalikda C. V. Mills (1956) ta'riflagan AQSh “hokimiyat elitasining” jamiyatni iqtisodiy, siyosiy va harbiy nazorat orqali boshqarish imkoniyatlaridan xavotir uyg'otdi. Bu boshqaruvlar birinchi va ikkinchi jahon urushlari, Sovuq urush va Vetnam urushi davridagi madaniyat industriyasining davlat

siyosatiga to‘g‘ridan-to‘g‘ri hamkorligi orqali yaqqol ko‘rinib turgan edi.

Boshqa tomondan, Buyuk Depressiyadan chiqish uchun iste‘mol talabini rag‘batlantirishga qaratilgan AQSh siyosati reklama va marketing to‘lqinini keltirib chiqardi – iste‘molchilik dastlab amerikalik qadriyat, keyin esa urushdan keyingi va mustamlakachilikdan qutulayotgan jamiyatlarda g‘arb demokratik qadriyati sifatida ilgari surildi. Davlat va bozor o‘rtasidagi bu ittifoqlar AQSh elitasining hokimiyatini mustahkamladi, biroq ular ko‘pincha boshqa mamlakatlardagi ishlab chiqaruvchilikka asoslangan huquqiy tizimlarga qarama-qarshi chiqdi. Bu esa keyinchalik jamoat media tizimlarining yemirilishiga va axborot oqimi va erkin savdo shiori ostida iste‘molchilikka asoslangan huquqiy tizimlarning joriy etilishiga zamin yaratdi. Propagandadan tashqari, tanqidiy olimlar – Adorning izidan borar ekan **madaniyat industriyasi madaniy ishlab chiqaruvchilar va ularning mahsulotlari o‘rtasidagi munosabatni qanday o‘zgartirganini** ham ko‘rsatib berishdi. Gollivud haqidagi birinchi antropologik tadqiqotlar shuni ta’kidladi: Gollivud nafaqat mafkurani ko‘ngilochar shaklga aylantiruvchi, balki ijodiy shaxsiylikdan voz kechib, korporativ iyerarxiyaga bo‘ysunuvchi ishchi kuchini shakllantiruvchi **“tushlar fabrikasi”** edi.

Birinchidan, madaniyat industriyasining birlashgan kuchi tashkilotlangan mehnat harakatlariga qarshi ishladi – bu esa XX asr davomida o‘z kuchini asta-sekin yo‘qota bordi[12]. Mehnat jarayonlarini ratsionallashtirish va vaqtni boshqarish, ya’ni **Teylorizm**, boshqaruvga mahsulot ishlab chiqarish tezligini oshirish va ishchilarni yakuniy mahsulot ustidan egalik huquqidan yanada uzoqlashtirish imkonini berdi[1].

Bu ajralish, tanqidiy nazariyotchi Gyorg Lukach (1971) ataganidek, **“reifikatsiya”** (ya’ni, insoniy faoliyat natijalarining obyektga aylanishi va insondan begonalashuvi) AQShda madaniy ishchilar va ularning ish beruvchilari uchun mulkka oid huquqiy ta’riflarning o‘zgarishi orqali qonunlashtirildi[8]. XX asr o‘rtalariga kelib, sud precedenti ishchilarning industrialashtirilgan ishlab chiqarish jarayoniga qo‘shgan ijodiy hissasi ustidan nazorat huquqini ancha zaiflashtirdi. Huquqiy shartnomalar korporatsiyalarga ishchilarning bilimidan foydalanish huquqini **“mustaqil ijrochilik”** yoki **“buyurtma asosida mehnat (work-for-hire)”** mexanizmlari orqali rasmiylashtirish imkonini berdi[3].

AQShda intellektual mulk qonunlari ko‘proq **iste‘molchilarning tovarlar bozoriga kirish huquqini himoya qildi**, madaniyat ishlab chiqaruvchilarining mualliflik, patent va litsenziya kabi mulk huquqlaridan ko‘ra.

Bu **mulk ta’riflari iste‘molchilarga ham tatbiq etilib**, adaniyat industriyasi tadqiqot va o‘lchash usullari orqali auditoriyani **reklama beruvchilar va homiylarga tovar sifatida** miqdoriy jihatdan ifodalay boshladi. Kompaniyalar reyting tizimi orqali **“auditoriya tovari”** ni asosiy foyda manbaiga aylantirdi. Aloqa nazariyotchisi va faol Dallas Smythe’ning fikricha, bu **AQSh teleeshittirish industriyasining asosiy daromad manbai** bo‘lib qoldi[7]

Adorning madaniyat industriyasi nazariyasida ko'zda tutilgan milliy ishlab chiqarish va iste'mol aylanishi modeli davomida, madaniyat ishlab chiqaruvchilar ikki barobar ob'ektga aylantirildi:

1. Zavod uslubidagi ishlab chiqarish liniyasidagi **savdoga yaroqli detallarga**,

2. Va reklamachilarga sotiladigan **miqdoriy auditoriyaga**.

Bu jarayon ularning insoniy, ijodiy mohiyatini butkul mahsulotga aylantirib yubordi.

Madaniyat industriyasi nazariyalarini harakatga keltirgan tanqidiy kun tartibi bu atama ostida jamlangan turli aloqa va media industriyalari o'rtasidagi farqlarni, shuningdek, ommaviy madaniyat ishlab chiqarishning tijorat va davlat tomonidan boshqariladigan shakllari o'rtasidagi tafovutlarni empirik tadqiqotlar orqali o'rganish bilan birga rivojlandi.

AQShda, Lyuis Kozer va Richard Peterson madaniyat industriyalarining ko'pligini o'rganishda sotsiologiya va kommunikatsiya sohasida "madaniyat ishlab chiqarish yondashuvi"ni rivojlantirishga harakat qilishdi[11]. Ular bu ishda Kolumbiya universiteti qoshidagi Amaliy ijtimoiy tadqiqotlar byurosida 1950–60-yillarda Pol Lazarsfeld va Robert K. Merton tomonidan ishlab chiqilgan ma'muriy texnikalar va funksionalist sotsiologiyadan ilhom olishgan. Peterson bu izlanishlarni tashkilot sotsiologiyasi sohasida Paul DiMaggio, Wendy Griswold va Diana Crane kabi olimlar bilan birgalikda davom ettirdi.

Petersonning nazariyasiga ko'ra, har xil madaniyat industriyalari, ularning tuzilmasi va ichki mehnat tashkiloti (ishchilarning roli va cheklovlari) ishlab chiqarilayotgan ommaviy madaniyatning turli shakllariga olib keladi. Shu orqali u Adorno va boshqa tanqidiy olimlarning kapitalizm madaniyat mazmuni va mafkuraviy yo'nalishlariga umumiy ta'sir ko'rsatadi degan g'oyasidan chetga chiqdi. Buning natijasida, Peterson va uning zamondoshlari Merton (1968) tomonidan "o'rta darajadagi nazariyalar" deb atalmish yondashuvni ishlab chiqishdi. Bu nazariyalar tanqidiy yondashuv doirasini muayyan madaniyat industriyalari va ularning xodimlari faoliyatini tartibga soluvchi huquqiy va normativ tizimlar doirasida cheklab qo'yar edi[10]. Bugungi kungacha AQShda media industriyasini o'rganish asosan ana shunday o'rta darajadagi nazariyalar doirasida olib boriladi.

Madaniyat industriyalarini ko'plikda ko'rib chiqish yondashuvi Buyuk Britaniyada ham rivojlandi, u yerda ommaviy madaniyat ishlab chiqarishning davlat va xususiy siyosiy shakllari madaniyat mazmuniga har xil tarzda ta'sir ko'rsatayotgani aniq ko'rinardi. Bu yondashuv 1960-yillarda Birmingemda paydo bo'lgan Britaniya madaniyat tadqiqotlari bilan boshlangan va gumanitar hamda ijtimoiy fanlar bo'ylab keng tarqalgan. Madaniyatshunos olimlar madaniy mazmunlar ishlab chiqarishda ishlab chiqaruvchilar va iste'molchilarning teng huquqli ishtirokini ilgari surishdi.

Richard Johnson (1986) bu yondashuvni “madaniyat aylanishi” (circuit of culture) modeli orqali madaniyat industriyalarini tahlil qilishga kengaytirdi. Bu modelda madaniyat ishlab chiqaruvchilar va iste'molchilar ommaviy media mahsulotlari va ularning mazmuniga ma'no yuklash jarayonida o'zaro ta'sirda bo'ladi.

“Madaniyat ishlab chiqarish yondashuvi” madaniyat industriyalari va ularning tashkiloti madaniyat ishlab chiqarishda asosiy rol o'ynaydi deb hisoblagan bo'lsa, “madaniyat aylanishi” yondashuvi tarafdorlari (masalan, Stuart Hall va Martin Barker) madaniyat industriyalarini madaniy matnlarga semantik ma'no beruvchi asosiy kuch deb hisoblamadi. Ular Adorning nazariyasini davom ettirib, madaniy mahsulotlarning global ishlab chiqarish va iste'mol jarayonlarida qanday aylanib yurishini o'rganishdi.

“Madaniyat ishlab chiqarish” va “madaniyat aylanishi” yondashuvlarining kombinatsiyasi orqali madaniyat industriyalari endilikda ijtimoiy tuzilmalar ta'sirida shakllanuvchi, ammo ular tomonidan to'liq belgilab berilmaydigan tashkilotlar sifatida o'rganilmoqda. Bu yondashuv hozirda kommunikatsiya va media tadqiqotlarida yetakchi yo'nalish bo'lib qolmoqda. Ushbu tadqiqotlar asosan media industriyalarini madaniyat industriyasi va tijorat madaniyati sifatida o'rganish bilan cheklanadi; jamiyatga asoslangan yoki muqobil madaniyat ishlab chiqarish shakllariga esa kamroq e'tibor qaratiladi.

Bu yo'nalishdagi tadqiqotlar madaniyat industriyalaridagi muhim rollarni o'rgandi – ayniqsa kontent ustidan nazoratga ega bo'lganlarni: masalan, yangilik muharrirlari (axborot filtrlovchilar sifatida), televideniye prodyuserlari (yaratuvchilar sifatida), va boshqa ko'plab boshqaruv mutaxassislari[13]. Bu tadqiqotlar “madaniyat industriyalari kreativlarga cheklovlar doirasida ijodiy imkoniyatlar yaratadi” degan fikrni ilgari surdi va tanqidiy aloqa olimlarini tashvishga solgan reifikatsiya va ekspluatatsiya kuchlarini kamaytirib ko'rsatdi.

Shu bilan birga, bu tadqiqotlar har bir madaniyat industriyasining o'ziga xos tarixiy yo'nalishlari va ularni shakllantirgan o'zgaruvchan normativ va huquqiy tuzilmalar asosida o'ziga xos farqlarga ega ekanini ko'rsatdi. Yangi madaniyat industriyalari yangi mahsulot va xizmatlar turlarini taqqoslab o'rganishga chorladi. Kabel televideniyesi va sun'iy yo'ldosh texnologiyalari televideniye industriyasini ko'plikda o'rganishga sabab bo'ldi, mobil aloqa va internetning rivojlanishi esa aloqa va madaniy ishlab chiqarishni turli raqamli industriyalar bo'ylab yoyilishiga olib keldi.

Hatto ilgari yagona deb qaralgan madaniyat industriyalari ham, ko'proq funksiyalarni o'z ichiga olgan sari, ko'plik shakliga o'tdi. Masalan, reklama agentligi endilikda o'z ichiga ichki marketing, brending, jamoatchilik bilan aloqalar va savdo sohalarini ham oladigan ko'p funksiyali tashkilotga aylandi.

Bu orada, madaniyat industriyalari o'zlari ham qayta tuzilayotgan edi. 1970-yillarning oxiridan boshlab, kompyuter tarmoqlari va raqamli texnologiyalarning keng

tarqalishi ko‘plab madaniyat industriyalariga ishlab chiqarish jarayonining turli bosqichlarini turli vaqt zonalar va geografik hududlarga tarqatish imkonini berdi. Bu holat moliyaviy kapitalning globallasuvi va aloqa tarmoqlarining erkinlashtirilishi bilan qo‘llab-quvvatlandi. Ilgari asosan milliy doiradagi ishlab chiqarish, tarqatish va iste‘mol sikliga bog‘liq bo‘lgan madaniyat industriyalari endilikda o‘z faoliyatlarini markazsizlashtirish orqali turli joylardan foydalanishga muvaffaq bo‘ldi.

Milliy model asosidagi madaniyat ishlab chiqarish kapital keltirishda eng yuqori nuqtasiga yetgan edi, ammo iste‘mol bozorining to‘yintirilganligi sababli ish kuchi va xomashyo bo‘yicha raqobatbardosh bo‘lmagan xarajatlar bilan kompensatsiyalab bo‘lmas edi. Bu holatni “makon-vaqtli yechim”[6] deb atashadi, ya’ni milliy siyosiy iqtisodiyotlar kapitalizmga bir vaqtning o‘zida kengayish va ortiqcha foyda olish imkonini izlashgan.

Raqamli texnologiyalar va siyosiy islohotlar tufayli media va madaniyat industriyalari o‘z mahsulotlarini tarqatish uchun platformalarni birlashtirishga o‘tdi. Yangi raqamli mualliflik huquqi qonunlari madaniyat industriyalariga o‘z intellektual mulklarini himoya qilish uchun maksimal himoya choralari taqdim etdi – bu holat iste‘molchilar tili bilan aytganda “ulashish”, industriyalar tili bilan aytganda esa “piratlikka qarshi kurash” edi[5].

Konvergensiya (ya’ni birlashish) industriya tashkiliy madaniyatlari uchun chuqur ta’sir ko‘rsatdi – tashkilotlar ochiqroq bo‘lib, ishlab chiqarish jarayoniga ko‘proq ishtirokchilar jalb qilindi, lekin bu tashkilotlar beqarorroq bo‘lib qoldi: ular tezda ochilib, yopilib, qayta shakllanib turdi.

Bu jarayonlar – mualliflik huquqi rejimlari va konvergensiya – butun dunyo bo‘ylab yoyildi, dastlab Jahon banki va Xalqaro valyuta jamg‘armasi tomonidan rivojlanish va yordam shartlari sifatida majburlangan holda, keyinchalik esa xalqaro savdo va mualliflik huquqini himoya qilishga qaratilgan xalqaro shartnomalar orqali. Bu o‘zgarishlar har bir mamlakatning o‘ziga xos tarixiga qarab barcha industriyalarga, ishchilarga va iste‘molchilarga ta’sir ko‘rsatdi.

Madaniyat industriyasi nazariyasidan rivojlangan tanqidiy kommunikatsiya an’anasi AQSh va Yevropadan chiqib, endilikda liberallashtirilgan madaniy bozorlar bilan o‘zaro bog‘liqlikni Fransiyada (Miège, 1987), Sharqiy Yevropada (Garnham, 1993), Lotin Amerikasida (Bolano va boshq., 2000), Afrikada, Janubi-Sharqiy Osiyoda va Yaqin Sharqda (Mowlana, 1996) o‘rganishga yo‘naltirildi.

Umuman olganda, ilgari madaniyat industriyalarini milliy chegaralar ichida ushlab turgan tuzilmalar endilikda ularni markazdan chetga yo‘naltirib yubordi. Bu esa yangi bozorlar izlash va bozorga yo‘naltirilgan samaradorlikni oshirish uchun xizmat qildi. Madaniyat industriyalari yanada yirik va raqobatbardosh bozorlar tomon yo‘l oldi, bu yerda iste‘molchilar bazasi tobora ixtisoslashib bordi va tor yo‘naltirilgan auditoriyalar yuzaga keldi.

Ko'plab madaniyat industriyalari madaniyatga ajratilgan davlat mablag'lari kamayishi natijasida yangi bozorlar izlashga majbur bo'ldi – bu san'at, jamoatchilikka xizmat qiluvchi eshittirishlar va meros ishlab chiqarishini ham qamrab oldi. Bu o'zgarishlar industriyalar va mamlakatlarga qarab turlicha sodir bo'ldi.

Ko'pgina davlatlarda, masalan Yevropa, Lotin Amerikasi va Osiyoda jamoatchilikka xizmat qiluvchi eshittirish tizimlari mavjud edi, va bu mintaqalarda kabel va sun'iy yo'ldosh texnologiyalari global tarqalishi bu bozorlarning erkinlashtirilishi bilan birga keldi.

AQShda esa 1990-yillarda Milliy san'at jamg'armasining deyarli moliyalashtirilmay qolishi san'atkorlar, ijrochilar va boshqa madaniyat ishchilari ustiga ko'proq tadbirkorlik va daromad izlash bosimini yukladi[4].

Tijoratlashgan madaniyat industriyalari, xususan Gollivud ham o'zgardi – bu yerda kam foyda keltiruvchi ishlab chiqarish bo'limlari autsorsing, mustaqil kreativlar bilan shartnomalar va film suratga olish lokatsiyalarini boshqa mamlakatlarga ko'chirish orqali qisqartirildi. Bu jarayon “qochib ketuvchi ishlab chiqarish” (runaway production) deb nomlanadi, chunki u ilgari Kaliforniyada jamlangan kino ishlab chiqarish ishchi kuchi va lokatsiyalarini Yangi Zelandiya, Chexiya va Argentina kabi uzoq hududlarga yoydi.

Bu voqealar sodir bo'layotgan bir vaqtda, ijtimoiy soha olimlari ham ko'proq tijorat yo'nalishidagi sohalarni madaniy industriya deb atashni boshladi, va tijorat bo'lmagan madaniy amaliyotlarni esa shaharlarni qayta jonlantirishga hissa qo'shuvchi omillar sifatida ko'rdi.

Stuart Cunningham bu davr haqida shunday yozadi:

“Avvalgi yo'nalish industriyani madaniyat tomon tortdi; ikkinchisi esa madaniyatni industriya tomon olib bordi”[2:58].

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KREATIV VA MADANIY INDUSTRIYALAR: IQTISODIY-IJTIMOIIY O'ZGARISHLARNING YANGI PARADIGMASI

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Annotatsiya: Ushbu maqolada madaniy va kreativ industriyalar tushunchalarining kelib chiqishi, ularning siyosiy, iqtisodiy va ijtimoiy kontekstlarda rivojlanishi tahlil qilinadi. Maqola kreativ industriyalar sohasida yangi tadqiqot yo'nalishlarini belgilaydi va mavjud tanqidiy yondashuvlarni umumlashtiradi.

Kalit so'zlar: kreativ industriya, madaniy industriya, kreativ iqtisodiyot, madaniyat siyosati, madaniy kapital.

Ko'plab tadqiqotchilar madaniyat mahsulotlarini ishlab chiqaruvchi turli sohalarga nisbatan "madaniy" va "kreativ" atamalarini bir-birining o'rnida ishlatsa-da, ayrim olimlar uchun bu ikki tushuncha o'rtasidagi farq muhim bo'lib, yangi yo'nalishning belgisi hisoblanadi.

Madaniy industriya atamasi madaniy mahsulotlar va matnlarning ishlab chiqarilishi hamda tarqatilishini boshqaruvchi kuch munosabatlariga doir kontekstda paydo bo'lgan bo'lsa, **kreativ industriyalar** g'oyasi esa to'g'ridan-to'g'ri siyosiy kuch markazlarida shakllangan diskurs sifatida maydonga chiqdi. "Kreativ industriyalar" tushunchasi ilk bor 1997-yilda Buyuk Britaniyada Bosh vazir Toni Bleyer tomonidan boshlangan tashabbusga borib taqaladi. U o'sha paytda madaniy sanoat tarmoqlarining iqtisodiyotdagi ulushini hisoblash maqsadida maxsus ishchi guruh tuzdi. An'anaviy chap qanot bu tashabbusni "siyosiy taktika" deb baholagan bo'lsa-da, u umuman olganda postindustrial iqtisodiy muhitda yangi daromad manbalarini topishga qaratilgan strategiyaning bir qismi edi.

1998-yilda e'lon qilingan hujjatda kreativ industriyalar quyidagicha ta'riflangan edi: ular "shaxsiy ijod, mahorat va iste'dodga asoslangan faoliyat turlaridir, hamda aqliy mulkni yaratish va undan foydalanish orqali boylik va ish o'rinlari yaratish salohiyatiga egadir". Ya'ni, kreativ industriyalar soliq tushumlari, bandlik darajasi va ayniqsa ishlab chiqarish kabi asosiy sanoat tarmoqlaridagi pasayishni jilovlashda muhim vositaga aylanishi mumkin edi. Shu bilan birga, ular ishchilarning kreativ salohiyatini ham rivojlantirardi.

XXI asr davomida dunyo bo'ylab siyosatchilar kreativ industriyalardagi raqobatbardosh ustunliklarni aniqlashga va ularning mahalliy hamda milliy miqyosdagi umumiy ta'sirini kuchaytirishga intildilar.

1990-yillardagi "Cool Britannia" deb nomlangan milliy brend yaratish kampaniyasidan so'ng, Yangi Mehnat partiyasi hukumati davrida Buyuk Britaniya

hukumat agentliklari kreativ industriyalarni rivojlantirish uchun davlat mablag‘larini oshirdi va Milliy Lotereya tizimini ishga tushirdi. Bu orqali 13 ta tarmoq bo‘yicha kreativ klasterlar uchun mablag‘ ajratildi va rag‘batlantirildi. Ilgari “madaniy” sohalar deb hisoblangan nashriyot, kino kabi tarmoqlar an’anaviy san’at, hunarmandchilik va sahna san’atlari bilan birlashtirildi. Shuningdek, raqamli sohalar – dasturiy ta’minot va kompyuter o‘yinlari ham bu guruhga qo‘shildi.

Hukumat yangi davlat boshqaruvi uslublari orqali madaniyat qiymatini iste’mol ko‘rsatkichlari va aqliy mulk daromadlari asosida baholay boshladi. Ushbu strategiya iqtisodiy jihatdan shuni anglatardiki, har qanday tarmoq ichida resurslar, ayniqsa ishchi kuchini birlashtirish va ulardan umumiy foydalanish orqali sanoat o‘lishiga erishish mumkin. Natijada, bu strategiya qisqa muddatli mehnat shartnomalari asosida ishlovchi, oliy ma’lumotli va yosh ishchi kuchining jamlanishini talab etdi.

Shu tariqa, kreativ sanoat siyosati “ijodkorlik”ni qimmatli mehnat ko‘nikmasi sifatida ilgari surdi hamda kompaniyalar ichida va ular o‘rtasida moslashuvchan mehnat sharoitlariga asoslangan yangi ish modellari paydo bo‘ldi.

Biroq bu moslashuvchanlik ko‘pincha ish beruvchilarga xodimlarni istalgancha vaqtinchalik asosda yollash imkonini berdi. Natijada, kreativ industriyalar o‘lishi bilan bir vaqtda yangi ijtimoiy qatlam – **kreativ ishchilar sinfi**, ya’ni **“prekariat”** yoki **“kognitariat”** ham shakllandi.

Avstraliyada madaniy va kreativ industriyalarga bo‘lgan siyosiy yondashuvlar to‘g‘ridan-to‘g‘ri aloqa va ommaviy axborot vositalari bo‘yicha olimlar bilan tutashdi. Bu olimlarning ko‘pchiligi madaniyat siyosatini shakllantirish orqali ushbu sohalarga bevosita ta’sir ko‘rsatishga faol aralashgan. 1980-yillarning oxirlarida madaniy tadqiqotlar doirasida boshlangan yo‘nalishga ergashgan holda, ular Toni Bennetning (1999) Mishel Fuko tomonidan ishlab chiqilgan “hukumatlilik” nazariyasiga tayangan holda, madaniyatni faqat foydali mahsulotlarga qisqartirib qo‘yishga qarshi turuvchi, siyosatga faol ta’sir ko‘rsatadigan madaniyatshunoslikni himoya qilishdi.

Ushbu yondashuvlar asosan Kvinslend Texnologiya Universitetining **Kreativ industriyalar va innovatsiyalar Markazi (CCI)** kabi ilmiy tadqiqot institutlarida faoliyat yuritayotgan Terri Fliu, Jon Xartli va Styuart Kanningem kabi olimlar tomonidan ilgari surilgan. Ular ommaviy axborot vositalari va mashhur madaniyat tadqiqotchilarini hukumat institutlari va byurokratik tizimlarda ishlashga chaqirgan, shunda madaniyat va OAV yaratish va tarqatish jarayoniga ta’sir kuchayishi mumkin edi.

Amaliy nuqtai nazardan qaraganda, bu islohotchilar xorijiy madaniy mahsulotlar importi va mamlakatni boshqa joylarda suratga olingan madaniy tasvirlar uchun fon sifatida ishlatishga qarshi muvozanatni tiklash uchun mahalliy va autentik madaniy mahsulotlar ishlab chiqarishni rag‘batlantirishni maqsad qilgan. Madaniyat siyosatiga oid tashabbuslarning bu darajada aralashuvi Leyboristlar partiyasi hukumati

tomonidan qo'llab-quvvatlandi. Ular olimlarga jamoat eshittirishlarini tartibga solish, mahalliy va ozchiliklar dasturlarini ishlab chiqish, shuningdek, muzey va madaniy meros industriyalarini rivojlantirish bo'yicha siyosiy qarorlar jarayonida ishtirok etish imkonini berdi.

AQShda esa aloqa va media olimlari kreativ industriyalar bo'yicha tashabbuslarga nisbatan uncha e'tibor qaratmadi. Har bir shtatda mintaqaviy rivojlanish strategiyalarini yo'lga qo'ygan ushbu tashabbuslar Richard Florida (2002) tomonidan ilgari surilgan "kreativ sinf" nazariyasidan ilhomlangan. Shaharnaviyotchilar Florida tomonidan aniqlangan iqtisodiy o'sish bilan ijodkor professional va "shaharlik bohem"lar zichligi o'rtasidagi yuqori korrelyatsiyani takrorlashga harakat qilishdi.

Bu rejalar kreativ industriyalarni jalb qilish va saqlab qolish uchun davlat mablag'larini davlat-xususiy hamkorliklar orqali qayta yo'naltirishni o'z ichiga olgan. Natijada "kreativ shaharlar"da yangi bizneslar, joy brendlash tashabbuslari va ko'chmas mulk qiymati asosida o'sish sharoitlari yaratilgan. Biroq bu rejalarini tanqid qilganlar (hatto Florida o'zi ham) ta'kidlaydilar, bu jarayonda ijtimoiy tabaqalanish kuchaygan, shahar markazlari elitaga mo'ljallangan holda yangilangan (gentrifikatsiya), va mehnatkashlar tobora ijtimoiy himoyadan mahrum, zaif holga kelgan.

Hindiston, Xitoy va boshqa ko'plab Sharqiy Osiyo mamlakatlarida kreativ industriyalar bo'yicha tashabbuslar ko'proq ularning sanoat ishlab chiqarish va xizmatlar sohasidagi ustunliklariga mos ravishda ishlab chiqarish zanjirlarining ayrim qismlarini egallashga qaratilgan. Buyuk Britaniya va AQSh bozorlarining liberallashtirish bilan uyg'un holda va ko'pincha Avstraliya va Britaniya universitetlari bilan hamkorlikda bu davlatlar "bilim iqtisodiyoti"ga oid tarmoqlarni masalan, animatsiya, video o'yinlar va dasturiy ta'minot dizaynini rivojlantirishga kirishdi.

Xususan, Gonkong, Singapur, Taypey va Seul "jahon shaharlari"ga aylanishni maqsad qilgan rasmiy orzular doirasida kreativ industriyalar siyosatini qabul qildi. Ko'pincha avtoritar yoki markazlashtirilgan hukumatlar tomonidan yo'lga qo'yilgan bu siyosatlar iqtisodiy o'sishni kreativ ishlab chiqarish bilan chambarchas bog'lab, G'arbda shakllangan erkinlik va shaxsiy avtonomiya haqidagi tasavvurlarni rad etdi.

Butun dunyo bo'ylab kreativ industriyalar siyosati milliy mashhur madaniyat turlarining eksporti va hamkorlikda ishlab chiqarilishini qo'llab-quvvatladi. Oldingi tanqidlardan farqli o'laroq – ya'ni madaniy mahsulotlarning global shimoldan janubga yoki g'arbdan sharqqa bir yoqlama oqimi haqidagi qarashlardan farqli ravishda – Lotin Amerikasi musiqasi va kinosi, yapon anime va mangasi, hind filmi va modasi hamda turli osiyolik pop janrlarining eksporti madaniy oqimlarning murakkabligini namoyon etdi.

Ushbu eksport bozorlarini ta'minlagan uchta sanoat tendensiyasi mavjud:

1. **Global media konglomeratlarining kengayishi** – ular mahalliy bo‘linmalar orqali o‘z mahsulotlarini diversifikatsiya qilishdi. Ayniqsa, televizor va kino kabi audiovizual sanoat sohalari sun‘iy yo‘ldosh va kabel texnologiyalari yordamida keng tarqaldi. Masalan, Avstraliyada asoslangan News Corporation kompaniyasi STAR TV’ni Osiyoga xorijiy dasturlar uzatish uchun sotib olgach, uni bir nechta mahalliy kompaniyalarga bo‘ldi: STAR India, STAR China va Yaqin Sharq uchun STAR Select. Har bir bo‘linma o‘z mintaqasining media va ko‘ngilochar ishlab chiqaruvchisiga aylandi. Daya Tussu (2005) bu jarayonni **“Murdochizatsiya”** deb atadi.

2. **Qo‘shma korxonalar orqali ishlovchi mustaqil kompaniyalar** – bu model orqali yangi kompaniyalar moliyalashtirish va distributsiya masalalarida ilgari “media poytaxtlari”ga bog‘liq bo‘lmagan holda harakat qilishdi[2]. Bu esa daromadli iste‘mol guruhlari nishonga oluvchi, bir nechta mahsulotlarga moslasha oladigan madaniy mulklarni yaratishni rag‘batlantirdi. Natijada, xalqaro kino, komiks, video o‘yin, moda va savdo sanoati yaponcha “hidlanmaydigan” (ya’ni madaniy jihatdan xolis) mahsulotlarga – yosh, global auditoriyaga mo‘ljallangan animatsion kontentga intildi.

3. **Media poytaxtlarida kreativ industriyalar klasterlashuvi** – bu jarayon diasporik va transmilliy eksport bozorlarini shakllantirdi. Masalan, Bollivud sanoati nafaqat kino orqali, balki janubiy osiyolik diasporaning boshqa media tarmoqlari orqali ham kengaydi. Shuningdek, Nollivudning video-filmlari global miqyosda transmilliy konglomeratlar yoki hukumat yordamisiz tarqaldi.

2008-yilda BMTning Ta’lim, fan va madaniyat tashkiloti (UNESCO) kreativ industriyalarni “jahon savdosidagi eng dinamik tarmoqlardan biri” deb e’lon qildi. “Har bir jamiyatda xalqning qadriyatlari va o‘zligini ifoda etuvchi noan’anaviy madaniy kapital mavjud”, - deya ta’kidlagan holda, UNESCO kreativ industriyalarni “kreativ mazmun, iqtisodiy qiymat va bozor yo‘nalishiga ega moddiy mahsulotlar yoki nomoddiy xizmatlarni ishlab chiqaruvchi bilimga asoslangan faoliyat turlari” sifatida tarifladi.

Hisobot rivojlanayotgan mamlakatlarda kreativ iqtisodiyotlarni baholash va rivojlantirishga chaqirar ekan, bu industriyalarning shaharlarni qayta jonlantirish, jozibador ish o‘rinlari yaratish va ijtimoiy inklyuziyani kuchaytirishdagi ahamiyatini ko‘rsatdi. Shu bilan birga, UNESCO kreativ industriyalar uchun yagona ta’rif berishdan tiyildi va turli tasnif modellarini – sohalar bo‘yicha, markaziy va periferiya tarmoqlari bo‘yicha, intellektual mulk turlari bo‘yicha – solishtirib ko‘rdi. Rivojlanayotgan davlatlarga esa bozor liberallashtirish, mualliflik huquqlarini himoya qilish va kreativ industriyalarni madaniy turizm bilan bog‘lashga alohida e’tibor qaratish tavsiya etildi.

Butun dunyo bo'ylab siyosiy kun tartibining bir qismi sifatida kreativ industriyalar shakllanishi va kengayishi atrofida ijobiy taxminlar kuchaygan bir paytda, kommunikatsiya sohasidagi olimlar bu optimizmga savol bilan qarashdi. Kreativ industriyalar siyosatining ko'lamida bo'lgani kabi, olimlar ham aynan qaysi sohalar, ishchilar va iqtisodiy tarmoqlar ushbu "kreativ industriyalar" tushunchasi ostiga kirishini aniqlash borasida kelishmagan. Shunga qaramay, tanqidiy yondashuvlar bu siyosat tarafdorlari ilgari surgan mehnat, mulk, iste'mol va atrof-muhit haqidagi asosiy da'volarga e'tibor qaratdi.

Bu tanqidlarning ba'zilari o'tgan asrning o'rtalarida "madaniyat industriyasi" tanqidchilari tomonidan asos solingan yo'nalishlardan kelib chiqqan. Lotin Amerikasida ayniqsa kuchli bo'lgan madaniy imperializmni tanqid qilgan bog'liqlik (dependensiya) nazariyachilarining yo'nalishini davom ettirgan olimlar orasida Tobi Miller ajralib turadi. U global miqyosda mehnat jarayonlarining tengsizlik asosida taqsimlanishini ko'rsatgan tanqidiy olimlardan biridir. Miller (2016) 1990-yillarda kreativ industriyalarni **madaniy mehnatning yangi xalqaro bo'linishi (New International Division of Cultural Labor – NICL)** deb talqin qildi. Bu model rivojlangan mamlakatlardagi mehnatni ham, rivojlanayotgan mamlakatlardagi mehnatni ham qadrsizlantiradi.

Rivojlangan mamlakatlarda kreativ ishchilar ko'proq oliy ma'lumotli bo'lib, tobora beqaror, vaqtincha shartnoma asosidagi madaniy ishlar uchun o'zaro raqobatlashadilar. Rivojlanayotgan mamlakatlarda esa, kreativ industriyalar zaif ijtimoiy himoyaga ega, arzon ishchi kuchidan foydalanadi. Ular og'ir mehnat va ekologik sharoitlarga dosh berib, rivojlangan mamlakatlar ishchilari tomonidan yaratilgan intellektual mulk mahsulotlarini ishlab chiqaradilar. Har ikki holatda ekspluatatsiya (suiiste'mol) turlicha ko'rinishda namoyon bo'lsa-da, bu model NICL kreativ industriyalar mehnat va ekologik qonunlar zaiflashgan, madaniy mulklar korporativ egallovchilar qo'liga o'tgan, jamoat boyliklari esa kreativ industriyalarni subsidiyalashga yo'naltirilgan muhitda ijtimoiy tengsizliklarni kuchaytirishini ko'rsatadi.

Keyingi tadqiqotlar kreativ industriyalardagi ishchilar va ularning mehnat sharoitlariga oid material va ramziy (ma'noviy) kamsitish shakllarini ochib berdi. Buyuk Britaniya va Niderlandiyada faoliyat yuritayotgan sotsiologlar demografiya va martaba yo'nalishlari asosida kreativ industriyalar ishchi kuchini keng ko'lamda tahlil qilishdi. Bu tadqiqotlar, masalan, video o'yin industriyasi singari ba'zi sohalar ishchi sinf vakillariga nisbatan ochiqroq bo'lsa-da, eng yaxshi to'lanadigan ish o'rinlari odatda imtiyozli ijtimoiy kelib chiqishga ega bo'lgan oq tanli erkaklar tomonidan egallanishini ko'rsatdi. Bu ijtimoiy tengsizliklar iqtisodiy tafovutlarni takrorlash bilan birga, madaniy iste'mol va tarqatishdagi quvvat ierarxiyalarini ham mustahkamlaydi.

Buyuk Britaniyada bu ijtimoiy tabaqalanish jarayoni san'at va gumanitar fanlarga oid oliy ta'limga davlat mablag'lari qisqartirilgani, shuningdek, ijtimoiy tarmoqlar va haq to'lanmaydigan stajirovkalar ish topish uchun zaruratga aylangani sababli yanada kuchaydi. Feminist olimlar (masalan, Rozlin Gill va Anjela MakRobbi), hamda irqiy tenglik tarafdorlari (masalan, Arlin Davila va Anamik Saha) olib borgan tadqiqotlar shuni ko'rsatadiki, kreativ industriyalar siyosati tarixiy kamsitish tendensiyalarini jins, jinsiy orientatsiya va irq asosida yanada chuqurlashtirgan.

Shuningdek, hatto eng yaxshi ish joylariga ega bo'lganlar ham tobora beqaror mehnat sharoitlariga duch kelmoqda. "Chegarasiz" yoki "portfelga asoslangan" martabalar sifatida ijobiy talqin qilinayotgan bu holatlar aslida vaqtinchalik xodimlarga xos xavotirli, noaniq mehnat sharoitlarini anglatadi. Kreativ sanoat ishchilari ko'pincha vaqt bosimi ostida "ko'p vazifali" ishchilar sifatida faoliyat yuritadilar, ulardan doimiy raqamli aloqadorlik, jamoaviy ish va yuqori ijtimoiy faollik talab qilinadi.

Bu jarayonlar Arli Xoxschild (1983) ta'riflagan "emotsional mehnat" – ya'ni his-tuyg'ular orqali xizmat ko'rsatish – kabi feminizatsiyalashgan xizmat mehnatiga bog'liq. Kreativ sohalarda ishlovchilar doimiy bandlikni saqlab qolish uchun do'stona ijtimoiy aloqalar, ijtimoiy tarmoqlar orqali o'zlarini va brendlarini reklama qilishga majbur bo'lmoqda. Tadqiqotchilar bu holatni italiyalik avtonomist marksistlar nazariyasi bilan bog'lab, zamonaviy jamiyatni "**ijtimoiy zavod**" atashdi – ya'ni bu yerda endi shaxsiy va jamoaviy hayot, foyda va qiymat o'rtasidagi chegaralar yo'qolgan.

"Ijtimoiy zavod" nazariyasidan kelib chiqib, kreativ industriyalar o'z foydalarini **Tiziana Terranova** (2004) "bepul mehnat" deb atagan jarayonlardan ham olishmoqda. U yangi media vositalarida foydalanuvchilarning shaxsiy ma'lumotlarini yig'ish va sotish orqali mehnat kuchining tovarlashuviga e'tibor qaratgan. Bu muhokama Dallas Smythe tomonidan ilgari surilgan "auditoriya tovariga" oid tushunchalar bilan ham uyg'unlashadi.

Raqamli mehnat tadqiqotchilari kundalik internetdan foydalanish orqali iste'molchilar aslida ishlab chiqaruvchiga (ya'ni **prodyuser + iste'molchi = prosumer**) aylanishini, va bu holat "**o'yin-mehnat (playbour)**" deb atalishini ta'kidlaydilar – bu mehnat va o'yin o'rtasidagi chegaraning yo'qolishidir[19]. Feminist raqamli mehnat tadqiqotchilari esa bu jarayonni uy ishlari va bola parvarishi kabi haq to'lanmaydigan mehnat shakllari bilan bog'lash orqali, kapitalizm oilaviy struktura orqali qanday takrorlanishini ko'rsatishga harakat qilishmoqda.

Shunga qaramay, barcha ushbu tanqidiy yondashuvlar (avtonomistlar, feministlar, raqamli mehnat olimlari) kreativ ishlar atrofida **yangi birdamlik shakllari va qarshilik imkoniyatlarini** ham ko'rsatmoqda. Ular kreativ sanoatlarda mehnat sharoitlariga nisbatan ijtimoiy ong va hamjihatlikni oshirish orqali ijobiy o'zgarishlar uchun yangi ufqlar ochilayotganini ta'kidlaydilar.

Qizig'i shundaki, kreativ industriyalar ishlab chiqaruvchilari va iste'molchilariga nisbatan tanqidiy e'tibor oshgan bir paytda, ushbu sohalarga oid siyosatlarining ommabopligi pasayib borayotgandek ko'rinmoqda. Iqlim o'zgarishi haqidagi ilmiy dalillar, xomashyo resurslaridan barqaror bo'lmagan foydalanishni rag'batlantiruvchi yoki kelajakdagi savdoni oshirish maqsadida tezda eskiradigan texnologiyalarni yaratishga yo'naltirilgan kreativ industriyalarni tanqid ostiga oldi.

Bundan tashqari, kreativ industriyalardagi ijtimoiy tengsizliklar ushbu sohalar joylashgan shaharlardagi umumiy gentifikatsiya (elita sinfga moslashtirish) tendensiyalari bilan bog'landi. Masalan, yirik metropollarda kreativ sektorlar ko'pincha ko'chmas mulk va moliyaviy sohalarning foyda olish istaklari bilan uyg'unlikda harakat qilib, qadimiy turfa hududlarni hashamatli "loft turmush tarziga" va hordiq olish iste'moliga aylantiruvchi portlash-va-qulash sikllarini yuzaga keltirgan. Vaqt ko'rsatadi – kreativ industriyalarni inson madaniyat ishlab chiqarishining imtiyozli shakli sifatida ulug'lash tobora pasayadimi yoki bu shunchaki insoniy ijodkorlik va madaniyat ishlab chiqarish o'rtasidagi munosabatlarga doir boshqa bir diskursga oqib o'tayaptimi?

Madaniy va kreativ industriyalar haqidagi ilmiy adabiyotlarning aksariyati tomonidan ishlab chiqilgan tadqiqot tasnifiga mos keladi. U quyidagi yo'nalishlarni o'z ichiga oladi:

1. Siyosiy-iqtisodiy o'zgarishlarning sanoat tashkilotlariga va madaniyat ishlab chiqarishga ta'sirini tahlil qilish;
2. Ma'lum bir soha holatini, unga bog'liq sektorlari va jarayonlari bilan birga xaritalash;
3. Sanoatlar orasidagi bozor strategiyalari va tendensiyalarini o'rganish;
4. Madaniy industriyalar sektoridagi mutaxassislar yoki ishchilarning roli bo'yicha sifatli tadqiqotlar;
5. Madaniy va kreativ ishchilarning martaba yo'llarini o'rganishga qaratilgan uzun muddatli tadqiqotlar;
6. Ma'lum bir madaniy mahsulotni yaratish, ishlab chiqarish va tarqatish jarayonlarining etnografik tadqiqotlari.

Ushbu yo'nalishlar ko'pincha aniq sanoatlarga asoslangan empirik tadqiqotlar bo'lsa-da, so'nggi yillarda kommunikatsiya va media tadqiqotchilari madaniy va kreativ industriyalarni o'rganishda chegaralarni toraytirish yoki kengaytirishga chaqirishmoqda.

Masalan, Devid Hesmondhalgh va Anna Zöllner (2013) zamonaviy jamiyatlarda "yaxshi mehnat" axloqiy me'yorlarini belgilash zarurligini ilgari surib, kreativ mehnatning boshqa mehnat turlaridan farqli xususiyatlarini saqlab qolish tarafdori bo'lishgan. Bu yondashuv quyidagilarga ham taalluqlidir:

- Kreativ ishchilar hamjamiyatlarining shakllanishi,

- Resurslarni baham ko‘rishning axloqiy iqtisodiyoti,
- Ish amaliyotlarini boshqaruvchi norasmiy nazariyalar.

Ba’zi tadqiqotchilar o‘zlari o‘rganayotgan sanoatlarda faol ishtirok etayotgan bo‘lsalar, boshqalari professional gildiyalar, kasaba uyushmalari yoki mehnatga asoslangan ijtimoiy harakatlar bilan hamkorlik qilmoqdalar. Tadqiqotchi va tadqiqot obyekti o‘rtasidagi bu o‘zaro bog‘liqlik Laura Grindstaff (2002) tomonidan “yuqoridan” yoki “yon tomondan o‘rganish” deb atalgan – ya’ni akademiklarning real sanoat vakillari oldidagi nisbiy zaif pozitsiyasi tan olinmoqda.

Ushbu tadqiqotlar kreativ industriyalarda madaniy siyosatni yaxshilash, mehnat sharoitlarini isloh qilish yoki chetga surilgan kreativ ishchilarni qo‘llab-quvvatlash orqali advokatsiya (himoyachilik) vositasi sifatida xizmat qilishi mumkin.

2010-yildan beri ba’zi olimlar madaniy va kreativ industriyalarni o‘rganishdagi muhim taxminlarni tanqid ostiga oldilar. 2017-yilda Jek Qiu AQSh hukmronligi va intellektual mulk egaligi atrofidagi tushunchalarni tasdiqlovchi tor yondashuvlarni rad etadi va madaniy hamda kreativ industriyalarni o‘zaro bog‘lovchi global siyosiy-iqtisodiy tizimlarni kengroq o‘rganishga chaqiradi.

Bu keng yondashuv quyidagi mavzularni tadqiqot maydoniga olib kirdi:

- Global Janubdagi raqamli texnologiyalarni ishlab chiqarish va qayta ishlash,
- Energiya, internet va keng polosali tarmoqlar infratuzilmalari,
- Oq tanli bo‘lmagan va Global Janubdagi aholi mehnati.

Shu bilan birga, madaniy va kreativ industriyalarni o‘rganishda prodyuser va professional tushunchalaridagi ontologik og‘ishmalar, piratlikning huquqiy ta’rifi, formal va informal media iqtisodiyotlari va media infratuzilmalari ham qayta ko‘rib chiqilmoqda.

Madaniy va kreativ industriyalarni o‘rganish tobora transmilliy tus olib, ishlab chiqarish va almashinuv zanjirlarida qatnashayotgan yanada keng ommani qamrab olar ekan, bu tadqiqotlar asl marksistik da’vatga yaqinlashmoqda – ya’ni madaniyatni universal insoniy faoliyat va ijtimoiy shakllanish sifatida o‘rganish.

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KREATIV INDUSTRIYALAR: INNOVATSIYA VA TA'SIR KELAJAGI

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Annotatsiya. Ushbu maqolada kreativ industriyalar, ya'ni madaniy mahsulotlar va xizmatlarni yaratish hamda ishlab chiqarishning zamonaviy iqtisodiyot va ijtimoiy taraqqiyotda tutgan o'rni chuqur tahlil qilinadi. Maqolada bu sohalarning innovatsiyalarni rag'batlantirish, madaniy xilma-xillikni targ'ib qilish va jamiyat farovonligini oshirishdagi roli yoritilgan. Ayniqsa, sun'iy intellekt (SI)ning kreativ jarayonlarga ta'siri, yangi imkoniyatlari va yuzaga kelayotgan texnologik hamda ijtimoiy muammolar batafsil ko'rib chiqilgan. Shuningdek, maqolada immersiv texnologiyalar, shaxsiylashtirish, global hamkorlik va ijtimoiy mas'uliyat kabi zamonaviy tendensiyalarning kreativ industriyalar kelajagiga ta'siri ham tahlil etiladi.

Kalit so'zlar: muammolar, kreativ industriyalar, kelajak, ta'sir, innovatsiya

Kreativ industriyalar – madaniy mahsulotlar va xizmatlarni yaratish, ishlab chiqarish va tarqatish faoliyatini o'z ichiga olgan keng ko'lamli sohalar uzoq vaqtdan beri iqtisodiy o'sish, ijtimoiy taraqqiyot va madaniy jonlanishdagi muhim roli bilan tan olingan. Musiqachilar, yozuvchilar, kinorejissyorlar ijodining san'atkorona ifodasidan tortib, dizaynerlar, muhandislar va tadbirkorlar tomonidan yaratilgan innovatsion mahsulot va xizmatlarga bo'lgan kreativ faoliyat jamiyat farovonligini oshirishda, innovatsiyalarni rag'batlantirishda, tadbirkorlikni rivojlantirishda va madaniy xilma-xillikni targ'ib qilishda katta hissa qo'shmoqda.

Ammo kreativ industriyalarda bir qator muammolar bor. Tez o'zgarayotgan raqamli dunyoda bu sohalar texnologik o'zgarishlarning bosimi, mualliflik huquqlari va muammolari, auditoriya segmentatsiyasi kabi qiyinchiliklarga duch kelmoqda. Shuningdek, kreativ ishchi kuchi zamon talablariga javob bera oladigan bilim va ko'nikmalar yetishmasligi muammosiga duch kelmoqda, bu esa doimiy ravishda yangilanib borishni, moslashuvchanlikni talab etadi. Bundan tashqari, global iqtisodiy muhitdagi beqarorlik ham kreativ industriyalar moliyaviy barqarorligiga xavf solmoqda.

Shunga qaramay, kreativ industriyalar kelajagi ulkan imkoniyatlarga boy. Kreativ kontentga bo'lgan talabning ortib borishi, sun'iy intellekt, virtual reallik (VR), kengaytirilgan reallik (AR) kabi sohalardagi texnologik taraqqiyot innovatsiya va ta'sirchanlik uchun ilgari hech bo'lmagan imkoniyatlar yaratmoqda. Kreativ sohalarda tadbirkorlikning kuchayishi esa, yangi biznes modellarini sinovdan o'tkazish, global auditoriyaga chiqish imkonini beradi. Globallashuv esa, o'z navbatida, chegara bilmas hamkorlik va bilim almashinuvi orqali madaniyatlararo innovatsiyalarni kuchaytiradi,

global kreativ markazlarning shakllanishiga zamin yaratadi. Kreativ industriyalar salohiyatidan to'laqonli foydalanish va oldinda turgan muammolarni yengib o'tish uchun bir nechta asosiy yo'nalishlarga e'tibor qaratish lozim:

1. **Shaxsiylashtirish.** Kreativ kontent tobora ko'proq iste'molchilarning individual ehtiyojlari va xohishlariga mos ravishda ishlab chiqiladi, bu esa chuqurroq rezonansga ega shaxsiy tajribalar yaratadi.

2. **Immersiv tajribalar.** Virtual reallik (VR) va kengaytirilgan reallik (AR) texnologiyalari bizning kreativ kontent bilan o'zaro aloqamizni tubdan o'zgartiradi. Ular interaktiv va ichki holatga kirish imkonini beruvchi tajribalar orqali bizni yangi dunyo va nuqtai nazarlarga olib kiradi.

3. **Hamkorlik.** Kreativ mutaxassislar bir-biri bilan va boshqa soha vakillari bilan faolroq hamkorlik qiladi, bu esa an'anaviy industriya tarmoqlari orasidagi chegaralarni yo'q qiladi hamda yangi gibril yo'nalishlarning paydo bo'lishiga sabab bo'ladi.

4. **Ijtimoiy ta'sir.** Kreativ industriyalar tobora ko'proq ijtimoiy ahamiyatga ega mavzular – ekologik barqarorlik, ijtimoiy tenglik va madaniy merosni asrash kabi masalalarga e'tibor qaratadigan loyihalarni ishlab chiqadi.

5. **Barqarorlik.** Kreativ industriyalar ekologik izni kamaytiruvchi va mas'uliyatli iste'mol hamda ishlab chiqarish andozalarini targ'ib qiluvchi barqaror amaliyotlarni qabul qiladi.

Ushbu tendensiyalarni o'zlashtirib, mavjud muammolarga qat'iy javob topgan holda kreativ industriyalar nafaqat omon qoladi, balki rivojlanishda davom etadi. Bu sohalar iqtisodiy o'sish, ijtimoiy taraqqiyot va madaniy xilma-xillikni kuchaytirishda, hamda kelajakda innovatsion, adolatli va barqaror jamiyat qurishda asosiy rol o'ynaydi.

Sun'iy intellekt (SI) kreativ industriyalarga katta ta'sir ko'rsatmoqda va u orqali yangi va innovatsion mahsulotlar, xizmatlar hamda tajribalar yaratilmoqda. SI turli jarayonlarni avtomatlashtirishi, g'oyalar yaratishi va kreativ ish jarayonlarini samarali tashkil etishga yordam berishi mumkin. Bundan tashqari, u kreativ ifoda va hamkorlik uchun yangi vositalarni taqdim etmoqda.

Kreativ sohalarda SI eng faol qo'llanilayotgan yo'nalishlardan ba'zilariga quyidagilar kiradi[1]:

- **Musiqqa yaratish.** SI algoritmlari kuylar, garmoniya va ritm yaratishi mumkin, bu esa musiqachilarga yangi uslublarni sinab ko'rish va ilgari tadqiq etilmagan ovoz manzaralarini o'rganish uchun ilhom beradi.

- **Dizayn.** SI vositalari grafik dizaynerlar va rassomlarga g'oyalarni ishlab chiqish, prototiplar yaratish va dizaynni takomillashtirishda yordam beradi, bu esa ularning ishini yanada samarali qiladi.

• **Marketing va reklama.** SI ma'lumotlarni tahlil qilib, marketing kampaniyalarini shaxsiylashtirish, individual kontent yaratish va marketing samaradorligini baholash imkonini beradi.

• **Kino ishlab chiqarish.** SI maxsus effektlar yaratish, realistik obrazlar yaratish va videolarni tahrirlashda qo'llaniladi.

• **O'yinlar ishlab chiqish.** SI yordamida aqlli personajlar, o'yin muhiti va o'yin kontenti yaratiladi.

Bundan tashqari, SI boshqa ko'plab kreativ sohalarda ham keng qo'llanilmoqda:

• **Moda.** SI kiyimlar dizayni, shaxsiylashtirilgan moda tavsiyalari yaratish va kiyim industriyadagi bir qancha jarayonlarni avtomatlashtirishda qo'llaniladi.

• **Tasviriy san'at.** SI yangi san'at shakllari yaratish, rassomlik uslublarini modellash va san'at asarlarini ishlab chiqish jarayonini avtomatlashtirishda ishlatiladi.

• **Adabiyot.** SI matn yaratish, tillar o'rtasida tarjima qilish va yangi adabiy shakllar yaratishda ishlatiladi.

• **Raqs va xoreografiya.** SI yangi raqs harakatlarini yaratish, raqs ijrosini tahlil qilish va mashg'ulot samaradorligini oshirishda yordam beradi.

• **Arxitektura va interyer dizayni.** SI binolar dizayni, shaxsiy interyer tavsiyalari yaratish va qurilish jarayonlarini avtomatlashtirishda qo'llaniladi.

• **OAV va ko'ngilochar industriya.** SI yangi media shakllarini yaratish, tomoshabinlar tajribasini shaxsiylashtirish va industriyadagi jarayonlarni avtomatlashtirishda yordam beradi.

SI ning kreativ industriyalarga ta'siri hali boshlang'ich bosqichda, biroq uning ushbu sohalarni tubdan o'zgartirish salohiyati juda katta. SI kreativ faoliyatni yanada ochiq, samarali va innovatsion qilish imkonini beradi.

Ba'zilar SI inson ijodkorligini to'liq almashtiradi deb xavotir bildirayotgan bo'lsa-da, amalda SI inson ijodini to'ldiruvchi vosita sifatida ko'rilmogda. U yangi vositalar va imkoniyatlarni taqdim etib, yangicha va ilg'or g'oyalarni ro'yobga chiqarishga xizmat qiladi.

Quyida SI yordamida yaratilayotgan innovatsion mahsulot va xizmatlarga bir nechta misollar keltirilgan:

• **Google Magenta.** Musiqada SI imkoniyatlarini o'rganishga qaratilgan ilmiy-tadqiqot loyihasi bo'lib, yangi musiqa shakllarini yaratish imkonini beradi.

• **OpenAI MuseNet.** Turli uslublarda musiqa yaratishga qodir yirik til modeli.

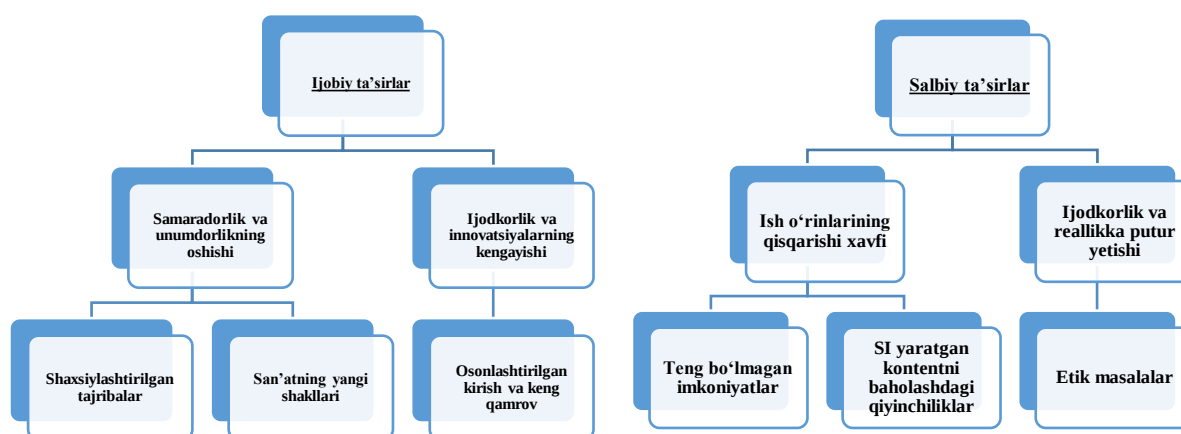
• **Adobe Sensei.** Adobe Creative Cloud dasturlarida ishlatiladigan va vazifalarni avtomatlashtiruvchi SI vositalari to'plami.

• **Autodesk Project Refinery.** Dizaynerlarga samarali dizayn yechimlarini yaratishda yordam beruvchi SI vositasi.

• **Unity ML-Agents.** O'yinlar uchun SI asosidagi personajlar va muhitlar yaratish imkonini beruvchi vosita to'plami.

Bu SI dan foydalanilayotgan ko'plab misollardan faqat ayrimlaridir. SI doimiy rivojlanayotgan soha bo'lib, yangi qo'llanmalar tobora ko'paymoqda. Kreativ industriyalarga SI ning ta'siri endi-endi sezilmoqda, va yaqin yillarda bundan ham ko'proq yangilik va innovatsiyalarni kutish mumkin.

Sun'iy intellekt (SI) kreativ industriyalarni tez sur'atlarda o'zgartirib bormoqda va bu jarayon ijodkorlik kelajagiga ijobiy hamda salbiy ta'sir ko'rsatmoqda[2].



Samaradorlik va unumdorlikning oshishi: SI takroriy vazifalarni – masalan, ma'lumotlarni tahlil qilish, grafik dizayn va rasm tahrirlash kabi ishlarni – avtomatlashtira oladi. Bu esa kreativ mutaxassislarga o'z e'tiborini strategik va san'atga oid jihatlariga qaratish imkonini beradi.

Ijodkorlik va innovatsiyalarning kengayishi: SI kreativ izlanishlar uchun yangi vositalar va ilhom manbalarini taqdim etadi. Bu esa rassomlar va dizaynerlarga yangi uslublar, texnikalar va g'oyalarni sinab ko'rishga imkon yaratadi.

Shaxsiylashtirilgan tajribalar: SI foydalanuvchi ma'lumotlarini tahlil qilib, musiqa tavsiyalari, individual dizayn takliflari va shaxsiylashtirilgan marketing kampaniyalari kabi kreativ kontentni yaratishi mumkin.

San'atning yangi shakllari: SI she'rlar, musiqa kompozitsiyalari, tasviriy san'at asarlari kabi yangi badiiy shakllarni yaratishi mumkin, bu esa an'anaviy san'at chegaralarini kengaytiradi.

Osonlashtirilgan kirish va keng qamrov: SI asosidagi vositalar kreativ ifodani demokratlashtiradi – ya'ni texnik bilim yoki resurslari cheklangan odamlar ham yuqori sifatli kreativ kontent yaratishi mumkin bo'ladi.

Ish o'rinlarining qisqarishi xavfi: SI avtomatlashtirish jarayonlari ba'zi kreativ kasblarda insonlarning o'rni egallashi mumkin. Bu esa an'anaviy kreativ ish o'rinlari yo'qolishiga olib kelishi ehtimoldan xoli emas.

Ijodkorlik va haqiqiylikka putur yetishi: SI tomonidan yaratilgan kontent inson ijodining o'ziga xosligi, shaxsiy tuyg'ulari va haqiqiyligini yetarlicha aks ettira olmasligi mumkinligi haqida xavotirlar mavjud.

Teng bo'lmagan imkoniyatlar: SI vositalariga kirish imkoniyatlarining teng bo'lmashligi mavjud tengsizliklarni yanada chuqurlashtirishi, ayrim guruhlar yoki jamoalarni yanada chetlab o'tishi mumkin.

Etik masalalar: Kreativ sohalarda SI dan foydalanish mualliflik huquqlari, egalik, shuningdek, algoritmlarning kamsituvchi yoki noxolis bo'lish xavfi bilan bog'liq axloqiy savollarni keltirib chiqaradi.

SI yaratgan kontentni baholashdagi qiyinchiliklar: SI tomonidan yaratilgan mahsulotlarning sifatini, asl va noyobligini aniqlash oson emas. Bu esa tomoshabinlar va mutaxassislar uchun inson va SI ijodini farqlashni qiyinlashtiradi.

Sun'iy intellekt (SI) tobora rivojlanar ekan, kreativ mutaxassislar, soha rahbarlari va siyosat yurituvchilar birgalikda harakat qilib, uning ijobiy imkoniyatlaridan unumli foydalanishlari va salbiy oqibatlarini yumshatish yo'llarini ishlab chiqishlari muhimdir. Bu quyidagi choralarni o'z ichiga oladi[3]:

- **SI bo'yicha ta'lim va malaka oshirishga investitsiya kiritish.** Kreativ mutaxassislarni SI bilan samarali va axloqiy ishlash uchun zarur bilim va ko'nikmalar bilan ta'minlash, ularning yangi muhitga moslashishini osonlashtiradi.

- **Inson va SI o'rtasidagi hamkorlikni rivojlantirish.** SI inson ijodining o'rnini bosuvchi emas, balki uni to'ldiruvchi va kuchaytiruvchi vosita sifatida qaralishi kerak.

- **Etik me'yorlar va standartlarni ishlab chiqish.** SI kreativ sohalarda mas'uliyatli va axloqiy tarzda qo'llanilishini ta'minlash uchun aniq axloqiy qoidalar zarur.

- **Diversifikatsiya va inklyuziyani qo'llab-quvvatlash.** SI ishlab chiqish va qo'llash jarayonlarida xilma-xillik va inklyuzivlikni ta'minlash uchun tashabbuslar amalga oshirilishi kerak. Bu SI vositalarining barcha kreativ jamoalar uchun ochiq bo'lishini ta'minlaydi.

- **SI ta'sirini doimiy monitoring qilish va baholash.** Kreativ sohalarda SI ning salbiy yoki kutilmagan ta'sirlarini aniqlash va ularni bartaraf etish uchun uning doimiy ravishda tahlil qilinishi zarur.

Agar sun'iy intellekt imkoniyatlari ongli ravishda o'zlashtirilsa va mavjud muammolar hal qilinsa, kreativ industriyalar texnologiyaning kuchidan foydalanib, ijodkorlik, innovatsiya va mavjudlikni oshirgan holda, insoniy ifodaning asl mohiyatini saqlab qolishi mumkin.

Kreativ industriyalarda sun'iy intellekt (SI) qo'llash texnologik hamda ijtimoiy jihatdan bir qator muammolarni keltirib chiqarmoqda [4].

Texnologik muammolar

• **Ma'lumot sifati va hajmi.** SI algoritmlarining samarali ishlashi uchun katta va yuqori sifatli ma'lumotlar kerak bo'ladi. Biroq kreativ sohalarida ma'lumotlar ko'pincha kam, tartibsiz yoki qiyin topiladi.

• **Tushuntirish va shaffoflik.** SI algoritmlari murakkab va noaniq bo'lishi mumkin, bu esa ularning qanday qaror qabul qilayotganini tushunishni qiyinlashtiradi va ishonchsizlikni keltirib chiqaradi.

• **Ijodkorlik va o'ziga xoslik.** SI yangi g'oyalarni generatsiya qilishda yaxshi natija ko'rsatadi, ammo inson rassomlarining darajasidagi original va chuqur ijodkorlikni aks ettira olmasligi xavfi mavjud.

• **Mualliflik huquqlari va egalik.** SI tobora mustaqil ravishda yangi asarlar yaratar ekan, bu inson va mashina muallifligi o'rtasidagi chegaralarni noaniq qilib, murakkab huquqiy savollarni keltirib chiqaradi.

• **Etik masalalar.** SI dan foydalanish kamsitish, noxolislik va maxfiylik kabi axloqiy muammolarni keltirib chiqarishi mumkin. Bular SI keng joriy etilishidan oldin hal qilinishi lozim.

Kreativ industriyalar ilm-fan va ta'lim sohalarida muhim rol o'ynaydi. Ular bilimlarni ommaga yetkazish jarayonini yanada samarali va qiziqarli qiladi, o'quv jarayonini esa interaktiv va qulay shaklga keltiradi. Hikoyalashtirish (storytelling), tasviriy san'at va boshqa kreativ vositalar orqali murakkab ilmiy tushunchalar oddiy, esda qolarli shaklda ifodalanadi va osonroq tushuniladi[5].

Kreativ industriyalarning ilm-fan va ta'limga integratsiyalashuvi bizning atrofimizdagi dunyoni anglash va uni o'rganish uslublarini tubdan o'zgartiradi. Ular ilmiy tushunchalarni yaqinroq, tushunarliroq va esda qolarliroq qilish orqali insonlarni tanqidiy fikrlovchi, bilimga chanqoq, faol shaxslarga aylantiradi.

Kreativ industriyalar innovatsiya va ijtimoiy ta'sir chegarasida turib, butun dunyo jamiyatlarining kelajagini shakllantirishga tayyor turibdi. Texnologik o'zgarishlar, mualliflik huquqi masalalari va malaka yetishmovchiligi kabi muammolar mavjud bo'lsa-da, o'sish va ijobiy ta'sir ko'rsatish imkoniyati shubhasizdir. Shaxsiylashtirish, immersiv tajribalar, hamkorlik, ijtimoiy ta'sir va barqarorlik kabi tendentsiyalarni qabul qilib, kreativ industriyalar yanada rivojlanib, iqtisodiy o'sish, ijtimoiy taraqqiyot va madaniy rang-baranglikka hissa qo'shishda davom etishi mumkin. Ushbu o'zgarishlarning ta'sirini chuqurroq tadqiq etib, aniqlangan tadqiqot cheklovlarini bartaraf etish orqali, biz kreativ industriyalarning rivojlanish yo'nalishini yaxshiroq tushunib, ongli qarorlar qabul qilishga va ularning innovatsion, adolatli hamda barqaror kelajak sari xizmat qilishga imkon yaratamiz.

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