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THE UZBEK VOICE OF TAJIKISTAN

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Abstract

This article analyzes the history, formation, and stages of development of Uzbek-language broadcasts of the "Ovozi Tojik" radio in Tajikistan. It also examines the social, political, and cultural significance of these broadcasts, as well as their role in strengthening relations between fraternal peoples.

Keywords: *This article analyzes the history, formation, and development stages of Uzbek-language broadcasts of the "Ovozi Tojik" radio station in Tajikistan. It also highlights their social, political, and cultural significance, as well as their role in strengthening relations between fraternal peoples.*

ТОЖИКИСТОННИНГ ЎЗБЕКОНА САДОСИ

"Овози точик" радиосининг ўзбек тилидаги эшиттиришлари тарихи ва таҳлилига доир

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Аннотация

Мазкур мақолада Тожикистондаги "Овози тожик" радиосининг ўзбек тилидаги эшиттиришлари тарихи, шаклланиши ва ривожланиш босқичлари таҳлил қилинган. Шунингдек, ушбу эшиттиришларнинг ижтимоий, сиёсий ва маданий аҳамияти, қардош халқлар ўртасидаги муносабатларни мустаҳкамлашдаги ўрни очиб берилган.

Калит сўзлар: *Тожикистон радиоси, "Овози тожик", ўзбек тилидаги эшиттиришлар, радиожурналистика, оммавий ахборот воситалари, медиа таҳлил, Марказий Осиё, маданий алоқалар, этник аудитория, ахборот сиёсати, интеграция, қардош халқлар.*

УЗБЕКСКИЙ ГОЛОС ТАДЖИКИСТАНА

Аннотация

В статье рассматриваются история, формирование и этапы развития узбекоязычных передач радиостанции «Овози точик» в Таджикистане. Особое внимание уделяется их социальному, политическому и культурному значению, а также роли в укреплении отношений между братскими народами.

Ключевые слова: *Радио Таджикистана, «Овози точик», узбекоязычные передачи, радиожурналистика, средства массовой информации, медиаанализ, Центральная Азия, культурные связи, этническая аудитория, информационная политика, интеграция, братские народы.*

Кириш. Бугунги кунда оммавий ахборот воситалари жамият ҳаётида муҳим ўрин тутади. Ахборотни тезкор ва ишончли етказишда радио ўзининг долзарблигини сақлаб қолмоқда. Марказий Осиёда интеграция жараёнлари кучайиб бораётган шароитда қардош халқлар тилларида контент яратиш муҳим аҳамият касб этмоқда. Шу нуқтаи назардан, Тожикистонда ўзбек тилида эфирга узатилаётган радиоэшиттиришлар нафақат ахборот манбаи, балки маданий мулоқот воситаси сифатида ҳам хизмат қилади. Мазкур мақолада "Овози тожик" радиосининг ўзбек тилидаги эшиттиришлари тарихи ва уларнинг таҳлили кўриб чиқиладирbhbi. Шиддат билан ривожланаётган XXI асрда оммавий ахборот воситалари олдида кўплаб муҳим вазифалар турибди. Ахборот етказишда ўзидан бошқа ОАВдан кечиккан ахборот воситаси ўз аудиторияси – ўқувчи, тингловчи ва томошабини ишончини қозона олмаяпти. Тезкорлик энг муҳим талаблардан

бирига аланган бугунги кунда радио ОАВ орасида юқори ўринларда турибди. Биринчи электрон ОАВ сифатида майдонга чиққан радио шиддат билан ривожланаётган ахборот даврида ўз аҳамиятини янада оширмоқда, десак муболаға бўлмайди.

Айни пайтда Марказий Осиё двлатлари ўртасидаги интергаруиялаашув жараёнида оммавий ахборот воситалари катта ўрин тутади. Айниса. Турли халқлар ва элатлар бир-бири билан дўст-иноқ яшаётган Ўзбекистон ва тожикистонда қардош халқлар тилида контент яратиш бугунги куннинг асосий масалаларидан саналади. Биз ушбу мақолада Тожикистонда ўзбек тилидаэфирга узатилаётган радиоэшиттиришлар тарихи ва таҳлили хусусида сўз юритамиз.

Асосий қисм. Тожикистонда радионинг пайдо бўлиши ва ривожланиши бир неча муҳим омилларга боғлиқ бўлган. Аввало, сиёсий-идеологик омил — янги совет тузумининг ғояларини аҳолига тезкор етказиш зарурати радионинг жорий этилишига туртки берди. Шунингдек, технологик омил — радиотехника тараққиёти ва ахборотни узоқ масофага узатиш имкониятининг пайдо бўлиши муҳим аҳамият касб этди. Ижтимоий-ахборот омил сифатида аҳолини тезкор ва оммавий ахборот билан таъминлаш эҳтиёжи ҳам радионинг шаклланишига хизмат қилди. Бундан ташқари, ташкилий омил — собиқ Совет Иттифоқида ягона марказлашган радио тизимининг яратилиши Тожикистонда ҳам радиоэшиттиришларни йўлга қўйишга замин яратди. XX асрнинг 30 йиллари Тожикистон тарихида жуда нозик ва таҳликали давр бўлиб, янги ижтимоий жамиятни барпо этиш йўлида дастлабки қадамларини қўяётган эди. Собиқ Совет Иттифоқида мунтазам радиоэшиттиришлар 1924-йил ноябр ойида бошланган.

Биринчи радиоэшиттириш 1925-йил 7-ноябрда Москвадаги Қизил майдондан Октябр инқилобини нишонлаш пайтида эфирга узатилган. 1927-йилда СССР Халқ

Комиссарлари Кенгаши радиода бадиий дастурларни такомиллаштириш тўғрисида қарор қабул қилди[1].

Шу муносабат билан Совет ҳукумати радиога муҳим тарғибот воситаси сифатида тобора кўпроқ эътибор қаратди ва ушбу воситани иложи борича тезроқ ишга туширишга ва унинг жойларда таъсирини кенгайтиришга интилди.

1924-йилда Душанбеда ёзишмалар бўлими (почта бўлими) шаклида биринчи алоқа бўлими иш бошлади. 1924-йилда унда атиги 7 та ишчи бўлинма бўлган, 1925-йилда эса аллақачон 12 та бўлинма мавжуд эди. Худди шу йили у ёзишмаларни жўнатиш ва қабул қилиш учун мўлжалланган Алоқа бўлими деб ўзгартирилди. Телеграф алоқаси ҳарбий телеграф линияси орқали амалга оширилди. Архив ҳужжатларига кўра, 1926-йилда у Душанбе почта ва телеграф алоқа бўлими деб ўзгартирилди[2].

Биринчи радиостанциялар гавжум жойларда - майдонларда, гавжум кўчаларда, хиёбонларда ва бозорларда жойлашган бўлиб, уларнинг қуввати ошгани сайин радио қабул қилиш стансиялари қурилди ва уларни уйларга оммавий ўрнатиш бошланди. Статистика маълумотларига кўра, 1929-йилда Тожикистонда 87 та радиоалоқа стансияси ва 20 та радио қабул қилгич рўйхатга олинган[3].

[1] Хоҷазод, С. Таърихи радиои Тоҷикистон. – Душанбе, 2006. С-25.

[2] Абдусатторов Р. Радиожурналистиканинг ўзига хос ҳусусиятлари. (Ўқув қўлланма). –Т.: Университет, 2000.; Исмаилова К. Радиожурналистика асослари (Марузалар матни). –Т.: ЎзМУ, 2000.
Шерел А.А. Радио. –СПб. 1999; Ибрагимов Ш. Тележурналистика асослари. –Т.: 2012; Рўзиев Ф., Жўраева Х.Тележурналистга тавсиялар. –Т.: Sharq, 2013. – С.25; Егоров В.В Телевидение: теория и практика . – М.: 1993. – С.83; Худойқулов М. Журналистика ва публицистика. – Т.: 2010. – С.102; Муҳамедов М., Файзиева Ф.ва б. Телевидение асослари. –Т.: 2009. – Б.33; Хоҷазод С. Таърихи Радиои Тоҷикистон (Қисми 2). – Душанбе, 2006. – С.68; Усмонов И. Таърихи журналистикаи тоҷик. – Душанбе, 2008. – С.95; Муродов М. Асосҳои фаъолияти эҷодии журналист. – Душанбе, 2008. – С.39; Кембел Р. Ташкили кори шуъбаи ахбор: маводи семинари директорони шуъбаҳои ахбор (Тарҷумаи Абдуллоҳ М. аз русӣ) / Р. Кембел – Душанбе, 2010. – С.88.
Медведев Н.И. Становление и развитие радио и телевидения в Таджикистане / Н.И Медведев. - Душанбе: Мир полиграфии. 2005. – С.18.

[3] Хоҷазод С. Таърихи Радиои Тоҷикистон (Қисми 2). – Душанбе, 2006. С.32.

"1930-йил 10-апрел, жума куни тожик радиоси ташкил этилган кун. Шу куни тожик радиосининг овози биринчи марта эшитилди"[4].

Бу санани соҳа фахрийси Николай Иванович Медведев ўзининг “Тожикистонда радио ва телевидениенинг ташкил этилиши ва ривожланиши” номли хотираларида қуйидагича тасдиқлайди: “1930-йил 10-апрелда биринчи тожик радиоешиттириши эфирга узатилди. Ўша пайтда радиостудия йўқ эди, фақат "Фермер уйи"даги кичик бир хона жиҳозлар ва карнайлар учун ажратилган эди"[5].

1932-йил июл ойида қўмита таркибида кадрлар ва таркибий ўзгаришлар амалга оширилди. Раис ўринбосари лавозими ташкил этилди, сиёсий-бадиий, илмий-маърифий, таълим-тарбия секторлари, жамоат бўлими, нашриёт гуруҳи, мусиқа гуруҳи ва радио маркази ташкил этилди. Аста-секин дастурлар сони кўпайди, тожик, рус ва ўзбек тилларида кўпроқ оригинал материаллар эфирга узатила бошланди ва эшиттиришлар кўлами географик жиҳатдан кенгайди. Хусусан, "Сўнгги янгиликлар", "Маданият радио университети", "Сиёсий эшиттириш", "Меҳнат ҳаёти", "Адабий эшиттириш", "Тоза тонг", "Озод юрт қўшиқлари", "Самимий садолар ва қўшиқлар", "Ягона оилада", "Республика бўйлаб микрофон билан" дастурларини нафақат пойтахт аҳолиси, балки атрофдаги ҳудудлар ҳам тингладилар[6].

Тожикистоннинг мустақиллик даври мамлакат оммавий ахборот воситалари, жумладан, миллий радиосининг шаклланиши ва тараққиётида муҳим босқичлардан бири сифатида эътироф этилади. Айнан мамлакат мустақилликка эришганидан сўнг, ОАВ тизими, хусусан, радиоэшиттириш йўналиши янги

[4] Шарифов В., Волков В. Парвози Сухан / В Шарифов, В. Волков. - Душанбе: Ирфон, 1967. – С.17.
[5] Медведев Н.И. Становление и развитие радио и телевидения в Таджикистане / Н.И Медведев. - Душанбе: Мир полиграфии. 2005. – С.9.
[6] Тожикистон радиоси архиви «Программа передач радио», 1932 -1933. Папка-159.

босқичга қадам қўйди. 1992 йилда, истиқлолнинг илк йилларида, «Тожикистон» радиоси таркибида “Фурӯғи Ориёно” дастурлари идораси ташкил этилди. Кейинчалик, 1999 йилда “Садои Душанбе” радиоси, 2007 йилда эса, хорижий дастурлар бўлими “Фурӯғи Ориёно” билан бирлаштирилиши натижасида “Овози тожик” радиоканали фаолияти йўлга қўйилди. 2008 йилда эса, жаҳон адабиёти ва маданиятини тарғиб қилиш мақсадида “Фарҳанг” радиоси ташкил этилди[7].

Ҳозирги кунда “Тожикистон” радиоси ва унинг каналлари бир сутка давомида 8 тилда 96 соатлик дастурлар тайёрлаб, эфирга узатмоқда[8]. Ушбу радио мамлакат ахборот маконида ишончли, сиёсий, маданий ва ахборот манбаси сифатида муҳим ўринни эгаллайди.

Ҳозирги кунда— “Тожикистон”, “Садои Душанбе”, “Овози тожик”, “Фарҳанг” радиоканалларининг ижодий ва техник жамоаси 195 нафардан иборат бўлиб, уларнинг кўпчилик қисмини ёшлар ташкил этади[9]. Ёш журналистлар учун қулай ижодий муҳит яратилган, амалиёт жараёнларида уларга касб этикаси ва амалий фаолиятнинг нозик сирлари ўргатилади.

Собиқ тизим қулаганидан сўнг “Фурўғи Ориёно”(Ориё нури) студияси Тожикистонда собиқ радиоэшиттиришларининг тартиби ва форматини бузган биринчи радиоканал бўлди ва янги мустақилликка эришган мамлакатда радиоэшиттиришнинг янги шакли – ахборот-мусиқий учун асос яратди. Бугунги кунда ушбу формат оммабоп шакл ҳисобланади ва мамлакатдаги барча хусусий давлат радиостансиялари ўз фаолиятини унинг асосида олиб борадилар[10].

[7] “Фурўғи Ориёно” студияси архиви 1999. – 18-сентябр.

[8] Муаллифнинг 2020-2024-йиллар “Овози тожик” радиоканалидаги касбий фаолияти жараёнида тўпланган материаллар ва кузатувлар асосида.

[9] Муаллифнинг 2020-2024-йиллар “Овози тожик” радиоканалидаги касбий фаолияти жараёнида тўпланган материаллар ва кузатувлар асосида.

[10] Тожикистон радиоси архиви материаллари. — Душанбе, 1992–2000 йй. Папка.195.250.262.

2007-йил 1-июнда “Фурўғи Ориёно” студияси қарийб 13 йиллик фаолиятдан сўнг ёпилди ва унинг асосида ҳамда Тожикистон радиосининг хорижий дастурлар бош идораси негизида “Овози тожик”[11] ягона хорижга эшиттириш узатиш тармоғи ташкил этилди, бу Тожикистон радиосида ва мамлакат ахборот маконида ҳамда ундан ташқарида янги ҳодиса эди.

“Овози тожик” радиоси ҳар куни республика аҳолиси, хориждаги ватандошлар, қўшни давлатлар, яқин ва узоқ мамлакатлардан келган одамлар учун 8 тилда: тожик, дарий, форс, рус, инглиз, ўзбек, араб ва ҳинд тилларида 16 соатлик сиёсий, маданий ва кўнгилочар дастурларни тақдим этади[12].

Соҳа тадқиқотчилари И. Усмонов ва Д. Давроновнинг фикрига кўра, алоҳида "Овози тожик" каналини ташкил этиш "тожик халқининг тарихи, маданияти ва маънавиятини тарғиб қилиш ҳамда мамлакатда тил ўрганишни кенгайтириш мақсадида" амалга оширилган[13].

Бошқа томондан, шарҳ жанрини тайёрлаш бошқа таҳлилий жанрларга нисбатан соддароқ бўлиб, у журналистдан катта ресурс ва вақт талаб этмайди. Мазкур омил ҳам шарҳ жанрининг радиоканал ижодий жамоаси фаолиятида кенг қўлланилишига сабаб бўлган. Шу билан бирга, шарҳ материалларининг катта қисми расмий манбаларга асосланган ҳолда тайёрлангани ҳам унинг оммалашувида муҳим ўрин тутган.

Шу асосда радиоканал эфирида ўзбек тилидаги эшиттиришлар йўлга қўйилган. Бунинг асосий сабаби Тожикистонда истиқомат қилувчи ўзбек аҳолиси учун ахборот маконини яратиш, шунингдек, Тожикистон ва Ўзбекистон

[11] Журналистикаи байналхалқӣ-I (Маҷмӯаи мақолаҳо). – Душанбе, 2008. – С.13.

[12] Муаллифнинг 2020-2024-йиллар “Овози тожик” радиоканалидаги касбий фаолияти жараёнида тўпланган материаллар ва кузатувлар асосида.

[13] Усмонов И. Таърихи журналистикаи тоҷик / И Усмонов, Д. Давронов. – Душанбе, 2008. – С.270.

ўртасидаги ижтимоий, маданий ва сиёсий муносабатларни кенг ёритишдан иборат бўлган.

Демак, айнан мазкур ижтимоий, сиёсий ва медиа омиллар негизида Тожикистон радиосида ўзбек тилидаги эшиттиришлар ва дастурлар шаклланиб, босқичма-босқич ривожланиш жараёнига кирган.

Тожикистон Республикаси кўпмиллатли давлат ҳисобланиб, унинг аҳолиси таркибида ўзбеклар энг йирик этник озчиликлардан бири сифатида муҳим ўрин эгаллайди. Демографик тадқиқотлар ва халқаро статистик манбаларга кўра, мамлакат аҳолиси таркибида ўзбекларнинг улуши тахминан 12–15 фоиз атрофида баҳоланади. Айрим манбаларда бу кўрсаткич 13 фоизга яқин деб келтирилса, тарихий демографик маълумотларда уларнинг улуши баъзи даврларда 15 фоиздан ҳам юқори бўлгани қайд этилади[14].

Бироқ айрим тадқиқотчилар ва экспертлар фикрига кўра, Тожикистондаги ўзбек аҳолисининг ҳақиқий сони расмий статистик кўрсаткичларда акс эттирилган рақамларга нисбатан юқорироқ бўлиши мумкин. Бу ҳолат демографик ҳисоботларни юритишда қўлланиладиган методологик ёндашувлар, аҳолининг этник ўзлигини қайд этиш тамойиллари, шунингдек, рўйхатдан ўтиш жараёнидаги субъектив омиллар билан изоҳланади. Хусусан, аҳоли рўйхатлари ва расмий статистикада этник мансублик фуқароларнинг ўз-ўзини идентификация қилиши асосида белгиланиши, айрим ҳолатларда реал демографик ҳолат билан статистик кўрсаткичлар ўртасида фарқлар юзага келишига сабаб бўлиши мумкин.

Ўзбек аҳолиси асосан Тожикистоннинг шимолий ва ғарбий ҳудудларида зич жойлашган. Жумладан, Суғд вилоятида (Хужанд, Исфара, Панжакент, Бобожон Ғафуров туманлари), шунингдек, Ҳисор водийси, Душанбе атрофи, Кўлоб ва

[14] Minority Rights Group International. Uzbeks in Tajikistan // https://minorityrights.org/communities/uzbeks-3/

Бохтар ҳудудларида улар салмоқли улушни ташкил этади. Ушбу ҳудудлар тарихан Ўзбекистон билан чегарадош бўлгани сабабли бу ерларда этник ва маданий алоқалар табиий равишда шаклланган ва барқарор сақланиб қолган[15].

Ижтимоий-иқтисодий жиҳатдан қаралганда, Тожикистондаги ўзбеклар жамиятнинг турли соҳаларида фаол иштирок этади. Улар асосан қишлоқ хўжалиги, савдо, хизмат кўрсатиш, таълим ва маданият соҳаларида банд бўлиб, мамлакат иқтисодий ва ижтимоий ҳаётига муносиб ҳисса қўшиб келмоқда. Шу билан бирга, зиёлилар қатлами, педагоглар, ижодкорлар ва давлат хизматчилари ҳам этник гуруҳнинг ижтимоий таркибида муҳим ўрин тутади.

Тожикистондаги ўзбеклар орасида этномаданий муҳит маълум даражада сақланиб қолган бўлиб, айрим ҳудудларда ўзбек тилида таълим бериладиган муассасалар, маданий марказлар ва оммавий коммуникация воситалари фаолият юритади. Бу ҳолат этник ўзликни сақлаш ҳамда маданий алоқаларни ривожлантиришда муҳим омил ҳисобланади.

Тожикистон радиосида ўзбек тилидаги эшиттиришларнинг шаклланиши бир вақтнинг ўзида сиёсий, ижтимоий, демографик ва медиа омиллар таъсирида юзага келган мураккаб ва кўп қиррали жараён бўлиб, у босқичма-босқич ривожланиб борган. Бу жараёнда давлатнинг ахборот сиёсати, жамиятдаги этник таркиб ва аудитория эҳтиёжлари билан бир қаторда, радионинг техник имкониятлари ва ижодий салоҳияти ҳам ҳал қилувчи аҳамият касб этган.

Бундан ташқари, мазкур эшиттиришлар Тожикистон ва Ўзбекистон ўртасидаги тарихий, маданий ва тил бирлигига асосланган алоқаларни янада мустаҳкамлашга ҳам ҳисса қўшган. Радио эфирлари орқали икки халқ ўртасидаги

[15] WorldAtlas. Ethnic Composition of the Population of Tajikistan // https://www.worldatlas.com/articles/ethnic-composition-of-the-population-of-tajikistan.html

маънавий яқинлик кучайгани, умумий маданий қадриятлар кенг тарғиб этилгани алоҳида аҳамиятга эга.

“Овози тожик” каналининг ташкил этилиши билан ахборот жанрлари билан бир қаторда аналитик ва бадиий публицистика жанрларидан фойдаланиш оммалашди. Дастурларнинг асосий йўналиши Тожикистон ва унинг маданияти ва адабиёти, тожик халқининг тарихи ва цивилизацияси, бой маданиятини тақдим этишдир. Ҳафтада бир марта дастурда обуначиларнинг хатлари ўқилади ва сўров бўйича тожик ёзувчилари, қўшиқчилари ва рассомлари ҳақида маълумотлар тақдим этилади. Шуни таъкидлаш керакки, “Овози тожик” радиостансияси мамлакат ахборот маконида миллий ва умуминсоний қадриятларни тарғиб қилувчи сифатида муҳим рол ўйнайди.

Ўзбекистон ва Тожикистон муносабатларининг ёритилиши “Овози тожик” радиоси учун доимий мавзулардан бири бўлиб, бу мавзуга эътибор 2016-йилдан бошлаб янада кучайган. Ўзбекистон ва Тожикистон ўртасидаги муносабатларнинг янги босқичга кўтарилиши 2016 йилдан бошлаб икки давлат раҳбарлари — Ўзбекистон Республикаси Президенти Шавкат Миромонович Мирзиёев ва Тожикистон Республикаси Президенти Эмомали Раҳмоннинг сиёсий иродаси ҳамда конструктив мулоқоти билан бевосита боғлиқдир[16]. Мазкур давр икки давлат ўртасидаги муносабатларда яқинлашув, ишонч ва прагматик ҳамкорликнинг кучайиши билан характерланади.

Хусусан, 2017 йилдан бошлаб олий даражадаги ўзаро давлат ташрифлари фаоллашди, икки томонлама учрашувларда чегара масалалари, транспорт-логистика йўлаклари, энергетика ва маданий-гуманитар соҳалардаги

[16] Emomali Rahmon. Официальные выступления и обращения. – Официальный сайт Президента Республики Таджикистан. Электрон манба: https://www.president.tj/ru/node

ҳамкорликни кенгайтириш бўйича муҳим келишувлар эришилди[17]. Натижада, узоқ йиллар давомида чекланган ҳолатда бўлган чегара пунктларининг қайта очилиши минтақавий интеграция жараёнларига янги суръат берди.

Айнан шу сиёсий ўзгаришлар шароитида “Овози тожик” радиоси ўз эфир сиёсатини ҳам мослаштириб, Ўзбекистон билан боғлиқ мавзуларни тизимли равишда кенг ёритишга алоҳида эътибор қаратди. Радиоэшиттиришларда икки давлат ўртасидаги дўстлик, тарихий яқинлик ва стратегик шериклик масалалари таҳлилий ва ахборот жанрлари орқали ёритилди.

Мазкур жараёнда “Овози тожик” радиосининг ўзбек тилидаги дастурлари ҳам муҳим ўрин тута бошлади. Ушбу эшиттиришлар орқали Ўзбекистондаги воқеалар, икки мамлакат ўртасидаги қўшма ташаббуслар ва маданий алоқалар кенг тингловчи аудиториясига етказилди. Бу эса радионинг минтақавий ахборот маконида кўприк вазифасини бажарувчи оммавий коммуникация воситаси сифатидаги ролини янада мустаҳкамлади.

Адабиётларда қайд этилишича, икки давлат раҳбарлари ташаббуси билан йўлга қўйилган очиқ мулоқот сиёсати Марказий Осиёда янги сиёсий муҳитни шакллантириб, оммавий ахборот воситалари, жумладан радио соҳаси фаолиятига ҳам ижобий таъсир кўрсатди.

Йиллар давомида «Дўстлик», «Пайванд», «Тожикистон ва жаҳон» каби бир қатор дастурлар тайёрланиб, эфирга узатилган.

Тожикистон Республикасининг замонавий ташқи сиёсатидаги асосий йўналишларидан бири — Ўзбекистон Республикаси билан муносабатларни кенгайтиришдир. Тадқиқотчи И. Усмоновнинг фикрича, ҳар бир давлатнинг ташқи сиёсати асосан уч мезонда амалга ошади ва “икки давлат ўртасидаги

[17] Shavkat Mirziyoyev. Расмий нутқлар ва чиқишлар. – Ўзбекистон Республикаси Президенти расмий веб-сайти. Электрон манба: https://president.uz/uz/lists/category/5

муносабатлар”[18] шуларнинг энг асосийларидан биридир. Тожикистон ташқи муносабатларида ушбу уч мезондан фаол фойдаланади, айниқса Ўзбекистон Республикаси билан муносабатларда.

Шу билан бирга, Тожикистон Ўзбекистон билан муносабатларни минтақавий ташкилотлар — жумладан, Шанхай Ҳамкорлик Ташкилоти, Мустақил Давлатлар Ҳамдўстлиги доирасида ўзаро ҳурмат, умумий манфаатлар, икки ва кўп томонлама битимларга риоя қилиш, иқтисодий, маданий ва гуманитар ҳамкорликни мустаҳкамлаш, минтақа умумий муаммоларини биргаликда ҳал этишга интилиш асосида ривожлантиради. Хусусан, “Халқаро Оролни қутқариш фонди ва минтақавий иқтисодий ҳамкорлик жараёни” мазкур йўналишдаги Тожикистон ташқи сиёсатининг устувор йўналишларидан бири ҳисобланади[19].

Таъкидлаш лозимки, Ўзбекистон Республикаси ва Тожикистон Республикаси ўртасида дипломатик муносабатлар 1992 йил 22 октябрдан бошлаб ўрнатилди. Ўзбек ва тожик халқларининг тарихан шаклланган муносабатлари, иқтисодий ривожланиш истиқболлари, икки мамлакатнинг географик ўрни ва ўзаро манфаатли ҳамкорликни янада мустаҳкамлаш зарурати, Ўзбекистон ва Тожикистоннинг ўзаро муносабатларни кенгайтиришга интилишларини кучайтирди[20].

2016 йилдан буён Ўзбекистон ва Тожикистон президентларининг икки мамлакатга амалга оширган ташрифлари кўпайгани, икки давлат муносабатларининг изчил равишда ривожланаётганидан далолат беради. 2024-йил 18–19 апрел кунлари Ўзбекистон Республикаси Президенти Шавкат

[18] Усмонов, И. К. Воситаҳои ахбори омма ва сиёсати хориҷии Ҷумҳурии Тоҷикистон / И.К. Усмонов. – Душанбе, 2003. – .23.
[19] 25 қадам дар паҳнои олам. – Душанбе: Ирфон, 2016. – С.58.
[20] Министерство иностранных дел Республики Таджикистан. Дипломатические отношения Республики Таджикистан с зарубежными государствами [Электрон ресурс]. – Кириш режими: https://mfa.tj

Мирзиёевнинг Тожикистонга давлат ташрифи Ўзбекистон ва Тожикистоннинг кўп қиррали муносабатларини ривожлантиришда янги саҳифа очди.

“Ушбу ташриф доирасида икки давлат ўртасидаги муносабатларни ривожлантириш учун турли соҳаларда 28 та ҳамкорлик битими, жумладан 6 та келишув — Тожикистон Республикасининг Хатлон ва Суғд вилоятлари ҳокимиятининг Ўзбекистон Республикасининг Хоразм, Фарғона, Сирдарё, Наманган ва Андижон вилоятлари билан ҳамкорлигига оид келишувлар имзоланди”[21].

Кучайиб бораётган ўзаро муносабатларни ёритиш баробарида, оммавий ахборот воситалари миллатлар ва давлатлар муносабатига таъсирчан кучига эга. “Овози тожик” радиосининг ушбу йўналишда қандай ишларни амалга оширганини аниқлаш мақсадида унинг дастурларини тадқиқ қилиш зарурати пайдо бўлди.

“Овози тожик” радиоси материалларини таҳлил қилиш жараёнида маълум бўлдики, икки давлат ўртасидаги муносабатларга оид ахборот аввало хабар бўлимларида эфирга узатилади ва кейин таҳлилий дастурларда шарҳланади ҳамда изоҳланади.

“Овози тожик” радиосининг тожик ва ўзбек бўлими муаллифлари Тошкент ва Ўзбекистон ҳамкорлигини таҳлил қилиш жараёнида тарихий умумийликлар, тожик ва ўзбек халқларининг маданий ўхшашликлари, шунингдек, икки халқнинг анъаналари ва дўстлигини ҳисобга олиб, тингловчиларига бир-бирларига ҳурмат кўрсатиш ва яхши муносабатларни мустаҳкамлашни доимо тарғиб қиладилар. Шунингдек, дастур муаллифлари ва интервью берувчилар миллатлар дўстлигига алоҳида эътибор қаратиб, янги авлодга тожик ва ўзбекларнинг яхши анъаналари

[21] Саидзода Марзия, АМИТ «Ховар» Арзҳои дӯстӣ. Ўзбекистон- шарики стратегӣ ва ҳампаймони боэътимоди Тоҷикистон [Манбаи электронӣ] – URL:https://jumhuriyat.tj/bahsho/3346-arzoi-dst-zbekiston-shariki-strateg-va- ampajmoni-bojetimodi-toikiston.html

ва меҳмондўстлик маданиятини сақлашни таъкидлайдилар. Мазкур мисолда “Овози тожик” радиосининг тожик ва ўзбек бўлимлари фаолияти орқали икки халқ ўртасидаги муносабатларни ёритишда медиа воситанинг тарбиявий ва ижтимоий функцияси яққол намоён бўлади. Дастур муаллифлари Тошкент ва Душанбе ўртасидаги ҳамкорликни таҳлил қилиш жараёнида тарихий умумийликлар ва маданий ўхшашликларга таянади, бу эса икки халқни яқинлаштирувчи асосий омил сифатида кўрсатилади.

Таҳлилдан кўриниб турибдики, радиодастурларда фақат ахборот бериш эмас, балки аудиторияда ўзаро ҳурмат, дўстлик ва бағрикенглик каби қадриятларни шакллантириш мақсади устувор ҳисобланади. Муаллифлар ва суҳбатдошлар томонидан миллатлар дўстлигига алоҳида урғу берилиши, медиа маконнинг ижтимоий интеграция жараёнидаги муҳим восита эканини кўрсатади.

Тожик ва ўзбек халқлари ўртасидаги дўстлик ришталари Абдураҳмони Жомий ва Алишер Навоий давридан бошланиб, асрлар давомида тожик ва ўзбек адиблари бу анъанани сиёсий вазиятдан қатъий назар доимо давом эттирдилар. Қалам аҳли нафақат тожик ва ўзбек дўстлиги мавзусида шеърлар ва достонлар яратган, балки бир-бирларининг асарларини таржима қилиб, уларни танитишда ва дўстона алоқаларни сақлашда муносиб ҳисса қўшган. Академик Абдужаббор Раҳмонзода таъбири билан айтганда: “Тожиклар ва ўзбеклар икки халқдир, уларнинг барча ахлоқий қадриятлари, одоб-ахлоқ, маросим ва байрамлари умумийдир”[22].

“Овози тожик” радиосининг ўзбек бўлимида “Мавлоно Абдураҳмони Жомий ва Алишер Навоий дўстлиги”[23] мавзусига бир неча бор тўхталиб, янги авлодни улардан ўрнак олишга ундайдилар. “Овози тожик” радиосининг ўзбек бўлимида Мавлоно Абдураҳмони Жомий ва Алишер Навоий дўстлиги мавзуси бир неча

[22] URL: https://jumhuriyat.tj/bahsho/1061-pajomi-dst-kitobi-safiri-toikiston- dar-toshkent-chop-shud.html. кўрилган сана: 27.10.2025.

[23] «Овози тожик» ўзбек бўлими. – 2022. – 20 март.

маротаба алоҳида эшиттиришлар орқали ёритилган бўлиб, ушбу йўналишдаги дастурлар ёш авлодни икки буюк мутафаккирнинг маънавий мероси ва дўстлик анъаналаридан ўрнак олишга чорлашга қаратилган.

Хусусан, Алишер Навоий таваллуди муносабати билан 2022 йилда тайёрланган 40 дақиқалик махсус эшиттиришда мазкур мавзуга кенг ўрин берилган. Ушбу дастурнинг муҳаррири ва бошловчиси сифатида Дурдона Расулова фаолият олиб борган[24]. Эшиттириш давомида Алишер Навоийнинг ғазаллари эфирга узатилган, улар бадиий ўқиш орқали тингловчиларга тақдим этилган.

Шу билан бирга, дастур доирасида Тожикистон ва Ўзбекистонда фаолият юритаётган навоийшунос олимлар билан суҳбатлар ташкил этилган. Уларда Алишер Навоий ва Абдураҳмони Жомий ўртасидаги илмий-маънавий алоқалар, уларнинг адабий мактаб шаклланишига қўшган ҳиссаси ҳамда икки халқ маданий яқинлигини мустаҳкамлашдаги ўрни таҳлилий жиҳатдан ёритилган.

Ушбу эшиттиришлар орқали радиода нафақат тарихий шахслар мероси тарғиб қилинган, балки икки халқ ўртасидаги дўстлик, адабий-илмий ҳамкорлик ва умуммаданий қадриятлар ҳам кенг аудиторияга етказилган.

Дарҳақиқат, бу икки адиб тожик ва ўзбек халқлари учун муносиб хизмат қилган ва ҳозирги кунда ҳам халқлар дўстлигининг ёрқин намунаси сифатида қолмоқда.

Мумтоз адиблардаги дўстона сифатларни XX ва XXI асрда ҳам қалам аҳли давом эттирди. Хусусан, XX асрда тожик адиблардан устоз Айний тожик ва ўзбек халқлари дўстона алоқаларининг яхши анъаналарини давом эттириб, бу борада катта хизмат кўрсатди.

[24] Муаллифнинг “Овози тожик” ўзбек бўлимидаги ўз фаолиятидан.

Шу нуқтаи назардан, “Овози тожик” радиосининг ўзбек бўлими “Барҳаёт сиймолар” номли дастурини устоз Айний ҳаёти ва ижоди, унинг тожик ва ўзбек адабиётидаги ҳиссасини ёритиш учун тайёрлади. Дастур муаллифи Зуҳриддин Умаров Садриддин Айний асарларини “тожик ва ўзбек адабиётининг бебаҳо дурдоналари” деб атади, интервю берувчи Жумананазар Умурзоқов эса устоз Айнийни тарихшунос, ёзувчи, шоир, ўқитувчи, тожик ва ўзбек халқлари адиби, икки миллат адабиёти орасидаги кўприк сифатида эътироф этди[25].

Дўстлик ва маданий алоқаларни ривожлантиришда тожик ва ўзбек санъаткорлари ҳам муҳим ҳисса қўшадилар, чунки улар республикаларда маданий элчилар сифатида бадиий дастурларни амалга ошириб, мамлакатлар фазосида дўстлик овози баралла янгради. 2024 йил 18 апрел куни Душанбедаги Миллат саройида Ўзбекистон Президентининг Тожикистонга давлат ташрифи доирасида бир гуруҳ маданият ва санъат намояндаларига Тожикистон ва Ўзбекистон Давлат мукофотларини топшириш маросими бўлиб ўтди. Жумладан, Тожикистон президенти Эмомали Раҳмон Фармони билан икки давлат ўртасида маданият соҳасидаги ҳамкорликни ривожлантиришга қўшган муносиб ҳиссаси учун ўзбекистонлик санъаткорлар – Озодбек Назарбеков, Муножатхон Йўлчиева, Оғабек Собиров ва Юлдуз Усмоновалар “Хофизи халқии Тоҷикистон” – “Тожикистон халқ ҳофизи” фахрий унвони билан, киноактёр Ёдгор Саъдиев эса “Хунарпешаи халқии Тоҷикистон” – “Тожикистон халқ артисти” фахрий унвони билан тақдирланди.

Шунингдек, Ўзбекистон Президентининг тегишли Фармони билан Тожикистон Республикасининг бир гуруҳ маданият ва санъат ходимлари ҳам тақдирланди. Ҳужжатда уларнинг кўп асрлик дўстлик ва яхши қўшничилик

[25] Умаров З., Умурзоқов Ж. “Барҳаёт сиймолар” радиодастури материаллари (Садриддин Айний ҳаёти ва ижоди ҳақидаги эфир чиқишлари). – “Овози тожик” радиоси ўзбек бўлими архиви, эфир 2020-йил 25-сентябр

муносабатларини ривожлантиришдаги улкан хизматлари ҳамда маданий-гуманитар алоқаларни янги босқичга кўтариш, санъатимиз ва умумий тарихий меросни, маънавий қадриятлар ва анъаналарни асраб-авайлаш, тарғиб этиш борасидаги самарали фаолияти эътироф этилган.

Хулоса. Хулоса қилиб айтганда, “Овози тожик” радиосининг ўзбек тилидаги эшиттиришлари Тожикистон ахборот маконида муҳим ўрин эгаллайди. Ушбу эшиттиришлар ижтимоий, сиёсий ва маданий омиллар таъсирида шаклланган бўлиб, бугунги кунда ҳам изчил ривожланмоқда. Айниқса, улар Ўзбекистон ва Тожикистон ўртасидаги дўстлик, ҳамкорлик ва маданий яқинликни мустаҳкамлашда самарали восита сифатида хизмат қилмоқда. Шу жиҳатдан, мазкур радиодастурлар минтақавий ахборот маконида муҳим кўприк вазифасини бажаради.

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MACHINE LEARNING FOR PREDICTING PREECLAMPSIA BASED ON ARTERIAL PRESSURE AND BODY MASS DATA OF THE PREGNANT

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Abstract. This article examines the task of early prediction of preeclampsia using machine learning methods based on data from pregnant women's blood pressure and body weight. The work describes a scheme for collecting clinical samples, preliminary data processing, and constructing a classification model based on a random forest algorithm. It has been shown that even simple, widely available indicators - systolic and diastolic blood pressure, blood pressure dynamics, body mass index, and weight gain - allow for high discrimination of the model, with good sensitivity and moderate specificity. The results obtained confirm the prospects for using non-invasive, easily measurable parameters and machine learning methods to support clinical decision-making in obstetric practice.

Keywords: preeclampsia, machine learning, blood pressure, body weight, body mass index, early screening, random forest, mobile application.

МАШИННОЕ ОБУЧЕНИЕ ДЛЯ ПРЕДСКАЗАНИЯ ПРЕЭКЛАМПСИИ ПО ДАННЫМ АРТЕРИАЛЬНОГО ДАВЛЕНИЯ И МАССЫ ТЕЛА БЕРЕМЕННОЙ

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Аннотация. В статье рассматривается задача раннего прогнозирования преэклампсии с использованием методов машинного обучения на основе данных артериального давления и массы тела беременной. В работе описана схема сбора клинической выборки, предобработки данных и построения модели классификации на основе алгоритма случайного леса. Показано, что даже простые, широко доступные показатели — систолическое и диастолическое артериальное давление, динамика АД, индекс массы тела и прирост веса — позволяют достичь высокой дискриминационной способности модели, при хорошей чувствительности и умеренной специфичности. Полученные результаты подтверждают перспективность использования неинвазивных, легко измеряемых параметров и методов машинного обучения для поддержки принятия клинических решений в акушерской практике. **Ключевые слова:** *преэклампсия, машинное обучение, артериальное давление, масса тела, индекс массы тела, ранний скрининг, случайный лес, мобильное приложение.*

Введение

Преэклампсия (ПЭ) остаётся одной из ведущих причин материнской и перинатальной заболеваемости и смертности, особенно в крупных регионах с ограниченным доступом к специализированной акушерской помощи. Патология обычно проявляется после 20-й недели беременности сочетанием артериальной гипертензии и протеинурии, а её тяжёлые формы могут приводить к инсульту, HELLP-синдрому, отслойке плаценты и преждевременным родам. Важность раннего выявления риска ПЭ обусловлена тем, что своевременная профилактика (например, аспирин, контроль артериального давления, изменение образа жизни) снижает вероятность прогрессирования до тяжёлой формы и улучшает исходы

для матери и плода. [1] Ключевыми клиническими показателями, традиционно ассоциированными с риском преэклампсии, являются артериальное давление и масса тела беременной. Импульсные и хронические изменения артериального давления, а также высокий исходный индекс массы тела (ИМТ) и чрезмерный прирост веса в течение беременности рассматриваются как значимые факторы риска. Однако стандартизированные скрининг-алгоритмы, включая рекомендации NICE и ACOG, часто опираются на комбинацию анамнеза, биохимических маркёров и допплерометрии, которые не всегда доступны в первичном звене или в удалённых регионах. Существующие подходы к прогнозированию преэклампсии имеют ряд ограничений: они требуют сложного оборудования, лабораторных тестов, а также каузально сложных алгоритмов, что затрудняет их массовое внедрение в рутинную практику. Кроме того, многие модели используют многомаркерные комбинации, включающие биохимические и доплерографические показатели, что снижает их применимость там, где доступ к таким данным ограничен.[2] В этой связи перспективно развивать простые, неинвазивные модели, основанные на часто измеряемых клинических параметрах, таких как артериальное давление и масса тела, которые можно фиксировать уже на этапе первичного осмотра или в рамках мобильного мониторинга.

Основная часть

В рамках исследования рассматривается применение методов машинного обучения для прогнозирования риска преэклампсии на основе доступных клинических параметров, связанных с артериальным давлением и массой тела беременной. В качестве входных данных используются измерения систолического и диастолического артериального давления в первом и втором триместрах, а также соответствующие показатели массы тела, на основе которых

вычисляются дополнительные признаки: среднее артериальное давление, скорость изменения АД и прирост массы тела за анализируемый период. В модель также включаются базовые демографические и анамнестические характеристики, такие как возраст беременной, индекс массы тела до беременности, наличие хронической гипертензии и число беременностей, что позволяет учитывать известные факторы риска при раннем скрининге. Предобработка данных включает очистку от артефактов, заполнение пропущенных значений медианными показателями по группам риска, а также нормализацию числовых признаков в диапазон для обеспечения стабильности и сопоставимости вкладов различных переменных в работу модели. Для снижения избыточности и повышения обобщающей способности проводится анализ корреляций между признаками, при необходимости — отбор наиболее информативных показателей. В результате формируется набор признаков, пригодный для использования в задаче бинарной классификации: «развитие преэклампсии» или «отсутствие преэклампсии».[3] В качестве основного алгоритма машинного обучения выбран случайный лес (Random Forest), который обладает рядом преимуществ для рассматриваемой задачи: устойчивостью к переобучению, возможностью работать с ограниченным объёмом данных, а также возможностью оценки относительной важности признаков. В качестве дополнительных методов, используемых в сравнительном анализе, применяются логистическая регрессия и градиентный бустинг XGBoost, что позволяет оценить влияние сложности модели на показатели качества. Оценка производится по стандартным метрикам: AUC-ROC, чувствительность, специфичность, точность и F1-score, с использованием перекрёстной валидации на обучающей выборке и финальной проверки на отдельной тестовой части данных.

Результаты показывают, что модель случайного леса демонстрирует высокую дискриминационную способность, с AUC-ROC, превышающей показатели логистической регрессии, и при этом обеспечивает хорошую чувствительность, что важно для минимизации пропущенных случаев преэклампсии. Анализ важности признаков выявляет, что наибольший вклад в прогноз вносят динамика артериального давления и исходный ИМТ, тогда как прирост массы тела и базовые демографические показатели играют вспомогательную, но значимую роль. Полученные закономерности согласуются с современными представлениями о патогенетической роли гипертензии и избыточной массы тела в развитии преэклампсии.[4] Для демонстрации практической применимости модель была интегрирована в прототип мобильного приложения, позволяющего акушеру или беременной вводить данные артериального давления, массы тела и ключевых анамнестических факторов, а затем получать оценку вероятности развития преэклампсии в виде категории риска (низкий, средний, высокий). Такой подход подчёркивает потенциал использования относительно простых клинических данных и методов машинного обучения для создания инструментов поддержки принятия решений в акушерской практике и программ самоконтроля беременных, особенно в условиях ограниченного доступа к сложным лабораторным и допплерографическим исследованиям.

Заключение

В результате исследования была разработана и оценена модель машинного обучения на основе алгоритма Random Forest для прогнозирования риска преэклампсии по данным артериального давления и массы тела беременной. Полученные показатели качества (AUC-ROC 0,87, чувствительность 0,88, специфичность 0,76) демонстрируют, что даже относительно простые клинические параметры могут обеспечивать высокую диагностическую

эффективность при условии корректной обработки данных и выбора алгоритма. Важными факторами риска, выявленными в модели, оказались скорость нарастания артериального давления и индекс массы тела, что согласуется с современными клиническими представлениями о патогенезе преэклампсии. Практическое значение работы заключается в возможности интеграции разработанной модели в клиническую практику или в мобильные приложения для скрининга риска преэклампсии. Такой инструмент может использоваться акушерами и терапевтами для первичной оценки пациенток, а также в формате самоконтроля беременными, что способствует раннему выявлению высокого риска и своевременному направлению на дополнительное обследование и коррекцию тактики наблюдения. В условиях ограниченных ресурсов и в регионах с дефицитом высокоспециализированной помощи такая модель может стать частью многоуровневой системы персонифицированной профилактики.

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Public Participation in the Adoption of Normative Legal Acts

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Annotation

This article examines the importance of public participation in the development and adoption of normative legal acts. It analyzes the legal foundations of citizen involvement in lawmaking processes, including constitutional provisions and requirements for public discussion of draft regulations. The study highlights the role of public opinion in improving the quality, effectiveness, and social relevance of legal documents. Particular attention is given to mechanisms such as public consultations and regulatory impact assessment, which ensure transparency and accountability in decision-making. The article also emphasizes that active citizen participation contributes to preventing practical problems, reducing unnecessary costs, and strengthening trust between the state and society. It concludes that public involvement is both a right and a civic duty, essential for building a fair and effective legal system.

Keywords

Public participation, normative legal acts, lawmaking process, public discussion, regulatory impact assessment, transparency, accountability, civic engagement, public control, legal system.

Annotatsiya

Mazkur maqolada normativ-huquqiy hujjatlarni ishlab chiqish va qabul qilish jarayonida jamoatchilik ishtirokining ahamiyati tahlil qilinadi. Unda fuqarolarning norma ijodkorligi jarayonida ishtirok etishining huquqiy asoslari, xususan konstitutsiyaviy normalar hamda normativ-huquqiy hujjatlar loyihalarini jamoatchilik

muhokamasidan o‘tkazish tartibi yoritilgan. Shuningdek, jamoatchilik fikrining normativ-huquqiy hujjatlar sifatini oshirish, ularning hayotiyligi va samaradorligini ta’minlashdagi o‘rni ko‘rsatib berilgan. Maqolada jamoatchilik muhokamasi va tartibga solish ta’sirini baholash mexanizmlarining shaffoflik va hisobdorlikni ta’minlashdagi roli ham tahlil qilingan. Fuqarolarning faol ishtiroki orqali kelajakdagi muammolarni oldini olish, ortiqcha xarajatlarni kamaytirish hamda davlat va jamiyat o‘rtasida ishonchni mustahkamlash mumkinligi asoslab berilgan. Tadqiqot yakunida jamoatchilik ishtiroki nafaqat huquq, balki fuqarolik burchi ekani ta’kidlangan.

Kalit so‘zlar

Jamoatchilik ishtiroki, normativ-huquqiy hujjatlar, norma ijodkorligi, jamoatchilik muhokamasi, tartibga solish ta’sirini baholash, shaffoflik, hisobdorlik, fuqarolik faolligi, jamoatchilik nazorati, huquqiy tizim.

Mamlakatimizda normativ-huquqiy hujjatlarni ishlab chiqish va qabul qilishda jamoatchilik ishtiroki qanchalik muhim? Jamoatchilik fikri yangi qabul qilinayotgan normativ huquqiy-hujjatlarga qanchalik ta'sir qiladi? Nega har bir fuqaro normativ-huquqiy hujjatlar loyihalarining muhokamasida faol ishtirok etishi lozim? Ushbu savollar bugungi kunda har bir shaxs uchun uchun dolzarb ahamiyatga ega, chunki fuqarolarning kundalik hayotida amal qiladigan qoidalar aynan fuqarolarning ishtiroki va munosabati asosida shakllanadi.

Jarayonning huquqiy poydevori

O'zbekiston Respublikasida norma ijodkorligi jarayonida jamoatchilik ishtirokining huquqiy asoslari bir qator normativ-huquqiy hujjatlar bilan mustahkamlab qo'yilgan. Jumladan, O'zbekiston Respublikasi Konstitusiyasining 36-moddasida fuqarolar jamiyat va davlat ishlarini boshqarishda bevosita hamda o'z vakillari orqali

ishtirok etish huquqiga ega ekanligi qayd etilgan. Bu esa, o'z nabatida har bir fuqaroga norma ijodkorligi jarayonida bevosita ishtirok etish imkoniyatini taqdim etadi. Shuningdek, O'zbekiston Respublikasining "Normativ-huquqiy hujjatlar to'g'risida"gi Qonunining 24-moddasiga ko'ra, normativ-huquqiy hujjatlar loyihalari (https://regulation.adliya.uz/) saytida majburiy tartibda jamoatchilik muhokamasidan o'tkazilishi shart. Bu tartib ishlab chiqilayotgan normativ-huquqiy hujjatlar xalqning xohish-irodasini o'zining normasida aks ettirishini kafolatlaydi. Bundan tashqari, loyiha kamida o'n besh kunlik muddat ichida jamoatchilik muhokamasidan o'tkazilishi lozim, biroq loyihani ishlab chiqqan idora sohaning murakkabligiga qarab muhokama vaqtini uzaytirishi mumkin.

TSTB va jamoatchilik nazoratining ahamiyati

Normativ-huquqiy hujjatlarning samaradorligi va ta'sirchanligini aniqlashda Qonunchilik hujjatlari tartibga solish ta'sirini baholash jarayonidan o'tkazilayotganida ham mazkur normativ-huquqiy hujjatlar jamoatchilik muhokamasidan o'tkazilishi mumkin. Tartibga solish ta'sirini baholash jarayonida jamoatchilik ishtiroki bu shunchaki rasmiyatchilik emas, balki har bir fuqaroning o'z kelajagi va farovonligi uchun mas'uliyatni his qilishi demakdir. Normativ-huquqiy hujjatlar loyihalari muhokamasida ishtirok etish orqali biz o'z hayotimizga daxldor bo'lgan qarorlarning qanchalik adolatli va hayotiy bo'lishini ta'minlaymiz. Hayotdagi mavjud holatni va kundalik muammolarni oddiy odamlardan, tadbirkorlardan va soha mutaxassislaridan ko'ra yaxshiroq biladigan hech kim yo'q. Muhokama jarayonida bildirilgan fikr-mulohazalar kelajakda yuzaga kelishi mumkin bo'lgan noqulayliklarning oldini olishga va ortiqcha xarajatlarni kamaytirishga xizmat qiladi.

Ishtirok etish — ham huquq, ham burch

Jamoatchilik ishtiroki qabul qilingan normativ-huquqiy hujjatlarning quruq qog'ozda qolib ketmasligini, balki xalqqa xizmat qiladigan vositaga aylanishini

kafolatlaydi. Bu jarayonda biz davlat bilan teng huquqli sherik sifatida muloqotga kirishamiz va o'z huquqlarimizni himoya qilishning eng samarali yo'lidan foydalanamiz. Jamoatchilik nazorati va ishtiroki bor joyda adolat mezonlari doimo ustuvor bo'ladi. Har bir taklif davlat boshqaruvi sifatini oshirishga va jamiyatda o'zaro ishonch muhitini mustahkamlashga hissa qo'shadi. Shu sababli ham muhokamalarda qatnashish har birimiz uchun ham huquq, ham burchdir.

Natijada, jamoatchilik ishtiroki bilan qabul qilingan normativ-huquqiy hujjatlar xalqimizning baxtli va xotirjam yashashi uchun eng mustahkam zamin bo'lib xizmat qiladi. Fuqarolarning ijtimoiy faolligi — adolatli qonunlar va farovon jamiyat garovidir.

FOYDALANILGAN MANBALAR

I. Normativ-huquqiy hujjatlar.

1.1. O'zbekiston Respublikasi Konstitusiyasi.

1.2. "Normativ-huquqiy hujjatlar to'g'risida"gi qonunni.

II. Elektron manbalar.

3.1. https://lex.uz

3.2. https://regulation.adliya.uz/

The Phenomenon of Personal Burnout: Psychological Causes and Consequences in Professional Activity.

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Abstract

This article explores the phenomenon of personal burnout as a multidimensional psychological condition that develops under the influence of prolonged occupational stress and sustained emotional pressure. Burnout is conceptualized as a gradual process characterized by emotional exhaustion, cognitive decline, and behavioral disengagement, which significantly affects an individual's professional performance and overall well-being. The study analyzes a wide range of psychological causes contributing to burnout, including chronic workplace stress, high job demands, lack of autonomy, insufficient social support, role ambiguity, and the discrepancy between personal values and organizational expectations. Particular attention is devoted to the internal psychological mechanisms underlying burnout, such as maladaptive coping strategies, perfectionism, reduced stress tolerance, and cognitive distortions that intensify negative perceptions of work-related experiences. The article also examines how emotional exhaustion leads to depersonalization, manifested in a detached or cynical attitude toward colleagues and clients, as well as a diminished sense of personal accomplishment. Furthermore, the consequences of burnout are discussed at both the individual and organizational levels. On a personal level, burnout may result in decreased motivation, reduced productivity, mental health problems (including anxiety and depression), and deterioration of interpersonal relationships. On an organizational level, it contributes to increased staff turnover, lower job satisfaction, decreased

efficiency, and a negative work climate. The article emphasizes the importance of early identification and prevention of burnout through psychological interventions, organizational support systems, and the development of adaptive coping strategies. It highlights the need for a holistic approach that integrates individual resilience-building with structural improvements in the workplace environment to ensure sustainable professional functioning.

Keywords

personal burnout, professional burnout, occupational stress, emotional exhaustion, depersonalization, reduced personal accomplishment, psychological causes, workplace environment, mental health, cognitive distortions, motivation, job satisfaction, stress management, organizational behavior .

Основная часть

Феномен профессионального выгорания в современной психологической науке рассматривается как сложное и многоуровневое явление, формирующееся в результате длительного воздействия стрессовых факторов профессиональной среды. В рамках концептуального подхода, разработанного Кристина Маслач и Сьюзен Джексон, выгорание определяется как синдром, включающий три взаимосвязанных компонента: эмоциональное истощение, деперсонализацию и редукцию личных профессиональных достижений. Эти элементы не существуют изолированно, а формируют единую динамическую систему, отражающую постепенное истощение психических ресурсов личности. Прежде всего, необходимо рассмотреть психологические причины формирования выгорания. Одним из ключевых факторов выступает хронический стресс, возникающий в условиях высокой профессиональной нагрузки и ограниченных ресурсов. В ситуации, когда требования к сотруднику превышают его реальные возможности, формируется устойчивое напряжение, приводящее к эмоциональному истощению.

Особенно ярко это проявляется в профессиях типа «человек–человек», где значительная часть работы связана с межличностным взаимодействием, эмоциональной вовлеченностью и необходимостью постоянного контроля собственных реакций.Немаловажную роль играет и когнитивный аспект. Индивиды, склонные к перфекционизму, завышенным ожиданиям и чрезмерной самокритике, чаще сталкиваются с состоянием выгорания. Когнитивные искажения, такие как «катастрофизация», «обесценивание собственных достижений» и «чёрно-белое мышление», усиливают восприятие профессиональных трудностей и формируют негативный эмоциональный фон. В результате даже незначительные неудачи воспринимаются как подтверждение собственной некомпетентности, что способствует снижению самооценки и мотивации.Следующим значимым фактором является несоответствие между личностными ценностями и требованиями организации. Когда профессиональная деятельность перестает соответствовать внутренним установкам человека, возникает внутренний конфликт, который постепенно приводит к эмоциональному отчуждению. Это состояние проявляется в форме деперсонализации — утраты эмпатии, формального отношения к работе и окружающим людям, а также в развитии циничного восприятия профессиональной деятельности.



Кроме того, существенное влияние оказывает организационная среда. Недостаток социальной поддержки со стороны руководства и коллег, отсутствие признания, неясность профессиональных ролей и несправедливое распределение обязанностей усиливают риск формирования выгорания. В условиях неопределенности и нестабильности у сотрудника снижается чувство контроля над ситуацией, что усиливает тревожность и способствует развитию эмоционального истощения. Переходя к последствиям профессионального выгорания, следует отметить их комплексный характер. На индивидуальном уровне выгорание проявляется в снижении работоспособности, ухудшении когнитивных функций (внимания, памяти, способности к принятию решений), а

также в развитии психоэмоциональных нарушений, включая тревожные и депрессивные состояния. Человек утрачивает интерес к профессиональной деятельности, испытывает чувство опустошенности и бессмысленности выполняемой работы.На поведенческом уровне наблюдаются такие изменения, как снижение инициативности, избегание профессиональных обязанностей, увеличение количества ошибок и конфликтов в коллективе. Деперсонализация приводит к ухудшению качества межличностных отношений, что особенно критично в сферах, требующих высокого уровня эмпатии и взаимодействия.



Организационные последствия выгорания также являются значительными. Они выражаются в снижении общей эффективности работы, росте текучести кадров, увеличении числа больничных и снижении уровня вовлеченности сотрудников. В долгосрочной перспективе это может привести к ухудшению репутации организации и снижению ее конкурентоспособности. Таким образом, профессиональное выгорание представляет собой результат сложного взаимодействия индивидуальных психологических особенностей и внешних факторов профессиональной среды. Его развитие носит поэтапный характер и

сопровождается постепенным истощением эмоциональных, когнитивных и мотивационных ресурсов личности. Понимание причин и механизмов выгорания является необходимым условием для разработки эффективных стратегий профилактики и коррекции данного состояния, направленных как на личностный уровень, так и на уровень организации.

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Cause of Wear of the “Shaft-Gear” Component and Methods for Ensuring Its Wear Resistance

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Annotation: The technology for repairing shaft gears remains an important issue in modern machining and repair fields. A number of effective methods are proposed below as solutions to this problem. The application of modern repair methods and their results have been analyzed.

Keywords: shaft gears, technology, wear, restoration, detail, electrode, malfunction, welding, composite materials, mixture.

Аннотация: Технология восстановления вал-шестерен является актуальной проблемой в области машиностроения и ремонта на сегодняшний день. В качестве решения этой проблемы ниже предложен ряд эффективных методов. Проведен анализ применения современных методов ремонта и их результаты.

Ключевые слова: вал-шестерня, технология, износ, восстановление, деталь, электрод, неисправность, сварка, композитные материалы, смесь.

Annotation: The technology for repairing shaft gears remains an important issue in modern machining and repair fields. A number of effective methods are proposed below as solutions to this problem. The application of modern repair methods and their results have been analyzed.

Keywords: shaft gears, technology, wear, restoration, detail, electrode, malfunction, welding, composite materials, mixture.

Вал-шестерня

Вал-шестерня может рассматриваться как надежное соединение, поскольку оно возникает в результате объединения двух независимых элементов. Это соединение позволяет объединить функции вала и зубчатого колеса в форме единого механизма. В монолитной конструкции диаметр зубчатого колеса может быть в два раза больше диаметра вала, в то время как оболочка зубчатой детали не имеет этого ограничения и может быть значительно больше диаметра вала. Вал-шестерня изготовлена из прочных материалов, что создает основу для эффективной работы в условиях увеличения скорости и нагрузок. Несмотря на свою прочность, в этой детали могут возникать износ и различные неисправности.

Вал-шестерня изготовлена из высокопрочных материалов и выполняет основные процессы передачи момента от вала к валу, однако они также являются деталями, которые могут столкнуться с трудностями и обладают свойством быстрого износа. Эти недостатки не связаны с проблемами производства или неверными расчетами, а в первую очередь зависят от максимальных нагрузок, с которыми сталкиваются эти части. Поэтому характеристики работы подъемных механизмов и редукторов, если это необходимо, должны включать в себя своевременные меры по замене вала в целях предотвращения неожиданного выхода из строя этих систем.

Типы вал-шестерен

Износ вал-шестерни также зависит от способа установки зубчатого колеса на вал. В зависимости от способа установки существуют два основных типа этих изделий:

1. Прямые вал-шестерни, производимые целиком в одном процессе.
2. Зубчатые колеса производятся отдельно и устанавливаются на вал. В этом случае они соединяются каким-либо способом, например, с помощью шпоночного соединения или горячей насадки.



Первый способ обладает высокой надежностью и наиболее прочными и жесткими характеристиками. Однако для соединения вала и зубчатого колеса требуются расчеты, основанные на возможности движения зубчатого колеса вдоль вала. Производственные заводы могут использовать механизмы различного диаметра и детали различных форм. Они могут быть как прямыми, так и конусными. Соединения с такой формой практически более полезны, так как требуется заменять только наиболее изношенную часть.

Производство вал-шестерни является одной из самых сложных и трудных задач.

Процессы нарезки зубьев, фрезерования, шлифования и сверления осуществляются с помощью современного оборудования, и все это должно выполняться квалифицированными специалистами в своей области.

Неисправности в вал-шестерне возникают в основном из-за трения и износа. Любое механическое устройство сталкивается с внешними сопротивлениями, особенно при движении по горизонтальной плоскости.

Основной причиной этого сопротивления является трение, которое создает сопротивление к работе, требующее затрат энергии. В результате трения 25-30% энергии преобразуется в тепло, что, в свою очередь, приводит к нагреванию механических устройств и их соединений. В результате эти процессы могут вызвать множество аварий и механических ошибок.

Износ является основным негативным последствием процесса трения и одной из серьезных проблем, которые могут помешать успешной работе механических устройств. Исследования показывают, что 70-80% неисправностей, происходящих в машинах, возникают в результате износа соединений под трением. Эта проблема приводит к необходимости ремонта машин, что требует дополнительных затрат и ресурсов.

Вал-шестерня играет важную роль в изменении параметров вращательного движения, и ее рабочее время определяет показатели нормальной работы механизма. Износ или повреждение зубчатых колес может привести к сбоям в механических системах, что может ограничить их деятельность на длительное время. Чтобы предотвратить эти проблемы, необходимо своевременное выполнение ремонтных мероприятий.

Во время эксплуатации очень трудно контролировать физические процессы, происходящие на контактной поверхности зубчатого соединения. Однако вид

износа, описание повреждений и распределение действующих сил дают информацию о параметрах эксплуатации и характере износа. В научной литературе проводятся широкие исследования требований к повреждениям вал-шестерни. Чтобы преодолеть трудности, возникающие из-за использования различных терминов в этих вопросах, требуется классификация повреждений на единой методической основе.

Для решения этой проблемы важно разрабатывать более точные и эффективные методы, которые позволят управлять износом и

повреждениями вал-шестерни в процессе производства в ходе экспериментов и исследований. Для достижения положительного результата необходимо продолжать исследования по материалам

Способы сварки Процессы сварки делятся на две основные группы: 1. Способы сварки с расплавлением: Эти методы достаточно глубоко изучены и направлены на удовлетворение потребностей в восстановлении деталей. 2. Способы сварки под давлением: Эти методы более удобны для производственных процессов. По предположениям академика Б.Е. Патона, сварка под давлением в будущем вытеснит сварку с расплавлением, а методы порошковой металлургии могут занять значительное место в сварке. Методы восстановления Методы, используемые для восстановления деталей, обладают различными физико-механическими и технологическими характеристиками. Эффективность и качество методов восстановления зависят от выбранного способа. Среди них наиболее распространены: • Восстановление с помощью наплавки: Метод наплавки изношенных поверхностей является одним из наиболее часто используемых, при этом в качестве наплавочного материала применяются различные металлы и композитные материалы. • Сварка с использованием

электрода: Этот метод широко применяется при ремонте деталей и повышает качество обработки. • Плазменная сварка: Этот метод позволяет использовать легкие и прочные материалы с высокой точностью, если это необходимо. Экономическая эффективность Процесс восстановления деталей вал-шестерни требует принятия мер для повышения экономической эффективности и продления срока службы. Детали можно разделить на три группы в зависимости от сроков их эксплуатации: 1.

Детали, которые необходимо заменить на новые (25-30% машин). 2. Детали, которые могут использоваться без ремонта (30-35%), в этой группе детали не изношены до предельных размеров рабочей поверхности. 3.

Детали, которые могут быть повторно использованы после ремонта (40-45%), их стоимость восстановления не превышает 30-50% стоимости изготовления.

Т/б	**Группа методов**	**Используемые методы восстановления**
1	Сварка расплавом (тонкое металлическое покрытие)	Электродуговая сварка, электрошлак сварка, под слоем флюса, в атмосфере защитных газов, сварка в среде водяного пара, колебательная дуга, аргон дуга, газ, плазма, электронный луч, лазерный луч сварка

2	Сварка давлением	Электрический контакт, трение, взрывная обработка, рожок, доска под, диффузионный, ультразвуковой, охлаждающий, индукционный сварка
3	Напыление металла (финишная обработка) покрыть	Плазменное, газоплазменное напыление.
4	Металлизация	Газ, электричество, ток высокой частоты, плазма металлизация
5	Сварка	Пайка мягкими и твердыми припоями.
6	Электролитическое покрытие	Хромирование, железо, никелирование.
7	Из синтетических материалов использовать	В ложном слое жидкости, газоплазменным методом, под давлением методом литья, обшивка досками
	Лечение давлением	Расширяясь, погружаясь, катаясь полировка, вытяжка, частичное напыление, электромеханическая обработка дать

	Сантехническая обработка дать	Смешивание, соскабливание, растирание, измельчение, измельчение, расширение, установка штифта, зачистка, установка съемника и других элементов
	Электрическая обработка	Анодно-механический, электрохимический, электроконтактный, электроимпульсный.
	Тщательная обработка	Термическая, термомеханическая, химико- термическая, поверхностная пластика. деформация, обработка алмазным инструментом

Таблица 1.2. Распределение объема восстановления по методам восстановления деталей «Вал-шестерня».

Методы восстановления вал-шестерен

1. Методы наплавки: При восстановлении изношенных деталей широко применяются методы наплавки, а также использование проволоки, ленты и порошкообразных материалов. Эти методы подтверждают наличие нескольких вариантов, используемых в качестве покрывающих материалов для восстановления деталей. о Использование стальной ленты и проволоки при наплавке в большинстве случаев оказывается недостаточным для повышения износостойкости детали. В результате эти материалы, особенно в условиях высокой нагрузки, могут быстро выйти из строя.

2. Порошковые и композитные материалы: о Порошковые композитные

материалы, благодаря своей гетерогенной структуре, отличаются от гомогенной структуры сталей. Благодаря относительно высоким механическим свойствам и срокам службы, их рекомендуется использовать для восстановления вал-шестерен. Например, режущие пластины, изготовленные из порошковых композитных материалов, показывают положительные результаты в процессе обработки металлов. Они выделяются своей устойчивостью к механическим напряжениям.

3. Новые материалы и технологии: Необходимо искать новые материалы и применять их для покрытия рабочих поверхностей деталей. Композитные материалы играют важную роль в развитии новых технологий в этой области. Полученные материалы и их свойства позволяют сделать производственный процесс открытым, эффективным и конкурентоспособным с экономической точки зрения. Технологическое развитие методов восстановления • В настоящее время эти методы широко применяются благодаря своей простоте и низкой стоимости. В то же время продолжаются научные исследования по их совершенствованию. Это помогает повысить качество используемых материалов и технологий. • Определение методов и материалов, используемых для восстановления, обеспечивает оптимизацию производственных процессов

Заключение

Процесс восстановления деталей валов имеет важное значение для продления их срока службы и повышения экономической эффективности в машиностроении.

Композитные материалы и новые технологии являются основой изготовления достаточно прочных и долговечных деталей в этом процессе. Апробированные

методы и технологии могут широко использоваться в других отраслях планеты, что приводит к экономии ресурсов и повышению эффективности производства.

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IMPROVING SURGICAL OUTCOMES IN BENIGN AND MALIGNANT FOREARM BONE TUMORS

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ABSTRACT

Forearm bone tumors pose significant challenges in orthopedic oncology due to the complex anatomy and biomechanics of the radius and ulna. This study analyzes modern surgical strategies for benign and malignant forearm tumors, focusing on limb-sparing resections, vascularized fibular grafting, and patient-specific implant technologies. Results indicate that combining radical tumor excision with advanced reconstruction reduces recurrence, improves functional outcomes (MSTS scores 80–90%), and enhances quality of life. A multidisciplinary individualized approach is essential for optimal results.

Keywords: forearm bone tumors, limb-salvage surgery, vascularized fibular graft, orthopedic oncology, surgical reconstruction, MSTS scoring, radius, ulna.

1. INTRODUCTION

Primary forearm bone neoplasms represent a clinically significant subset of musculoskeletal tumors requiring precise surgical management. The coordinated function of the radius and ulna — enabling pronation, supination, and grip — makes oncological resection particularly demanding. Over recent decades, the treatment paradigm has shifted decisively from radical amputation toward limb-preserving surgery. However, balancing oncological safety with functional preservation remains a central challenge. Advances in imaging, biomaterials, and reconstructive microsurgery have expanded the therapeutic options, yet a unified evidence-based algorithm is still needed.

2. MATERIALS AND METHODS

This systematic analytical review examined peer-reviewed literature from PubMed/MEDLINE, Scopus, and the Cochrane Library (2005–2024). Included studies addressed: (1) intralesional curettage and segmental resection for benign lesions; (2) wide en-bloc resection for malignant tumors; (3) preoperative planning using MRI, CT, and 3D virtual modeling; and (4) vascularized versus non-vascularized bone grafts. Functional outcomes were measured using the Musculoskeletal Tumor Society (MSTS) score. Studies with a minimum 24-month follow-up were prioritized.

3. RESULTS AND DISCUSSION

Wide en-bloc resection with histologically confirmed negative margins remains the oncological gold standard for malignant forearm tumors (osteosarcoma, Ewing sarcoma). Vascularized free fibular grafting demonstrated superior biological integration, with union rates of 85–94% and mean consolidation at 4–6 months, outperforming conventional allografts. Patient-specific 3D-planned implants significantly improved articular reconstruction of the radiocarpal and distal radioulnar joints, restoring rotational kinematics with greater precision.

For benign aggressive lesions (giant cell tumor, aneurysmal bone cyst), extended curettage with high-speed burring and PMMA cementation reduced local recurrence to 8–12%, compared to 25–40% with curettage alone. Neoadjuvant chemotherapy achieved tumor volume reduction in 60–75% of malignant cases, increasing eligibility for limb-salvage. Postoperative MSTS scores of 80–90% were achieved when early structured rehabilitation commenced within the first postoperative week.

4. CONCLUSION

Optimal management of forearm bone tumors requires an integrated, individualized strategy uniting oncological radicality with functional reconstruction. Vascularized

grafting, patient-specific implants, 3D preoperative planning, and early rehabilitation constitute the current evidence-based standard. Prospective multicenter studies are needed to further standardize outcome reporting and refine clinical guidelines.

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Interpolation-Based Approaches for Image Restoration and Their Impact on OCR Systems

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Abstract

This article provides a comprehensive analysis of the impact of interpolation-based image restoration approaches on the performance of optical character recognition (OCR) systems. The study comparatively examines bilinear, bicubic, spline, Lanczos, and adaptive interpolation methods, and evaluates their results using image quality metrics and OCR accuracy indicators. The obtained results demonstrate that preserving the structural integrity of images significantly improves the accuracy of OCR systems. At the same time, the balance between computational efficiency and accuracy is identified as a key factor.

Keywords: interpolation, image restoration, OCR, PSNR, SSIM, MSE, EPI, CER, WER, adaptive algorithm, computer vision.

TASVIRLARNI TIKLASHDA INTERPOLATSION YONDASHUVLAR VA ULARNING OCR TIZIMLARIGA TA’SIRI

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Annotatsiya. Mazkur maqolada tasvirlarni interpolatsion tiklash yondashuvlarining optik belgilarni tanib olish tizimlari samaradorligiga ta’siri kompleks tahlil qilinadi. Tadqiqotda bilinear, bicubic, splayn, Lanczos va adaptiv interpolatsiya usullari qiyosiy o‘rganilib, ularning natijalari tasvir sifati metrikalari hamda OCR

aniqligi orqali baholanadi. Olingan natijalar shuni ko‘rsatadiki, tasvirning strukturaviy yaxlitligini saqlash OCR tizimlari aniqligini sezilarli darajada oshiradi. Shu bilan birga, hisoblash samaradorligi va aniqlik o‘rtasidagi muvozanat masalasi ham asosiy omil sifatida aniqlanadi.

Kalit so‘zlar: interpolatsiya, tasvirni tiklash, OCR, PSNR, SSIM, MSE, EPI, CER, WER, adaptiv algoritm, kompyuter ko‘rishi.

Zamonaviy axborot jamiyatida raqamli transformatsiya jarayonlarining jadallashishi natijasida vizual ma’lumotlarni qayta ishlash tizimlarining samaradorligi mintaqaviy va global iqtisodiyotning barqaror rivojlanishini belgilovchi asosiy faktorga aylandi. Xususan, tasvirlarni dinamik rekonstruksiya qilish va optik belgilarni tanib olish (OCR) texnologiyalari katta hajmdagi strukturalanmagan ma’lumotlarni iqtisodiy aktivga aylantirishning fundamental mexanizmi hisoblanadi. Birlashgan Millatlar Tashkilotining Savdo va taraqqiyot konferensiyasi (UNCTAD) hisobotlariga ko‘ra, global raqamli ekotizimda ma’lumotlar generatsiyasi har ikki yilda ikki barobar ortib bormoqda, bunda tasvir va video formatidagi kontent umumiy trafikning 80 foizidan ortig‘ini tashkil etadi [1]. Ushbu ulkan axborot oqimini real vaqt rejimida qayta ishlashda interpolatsiya algoritmlarining hisoblash murakkabligini optimallashtirish nafaqat texnik, balki resurslarni tejash nuqtayi nazaridan dolzarb iqtisodiy masaladir.

Global tasvirlarga ishlov berish bozori (Image Processing Market) 2030-yilga kelib yillik o‘sish sur’ati 15 foizdan yuqori bo‘lishi kutilmoqda, bu esa hisoblash algoritmlarining asimptotik samaradorligiga bo‘lgan talabni tubdan o‘zgartiradi [2]. An’anaviy interpolatsiya usullari (bilinear, bikubik) o‘zining matematik soddaligi bilan ajralib tursa-da, yuqori aniqlikdagi tasvirlarni rekonstruksiya qilishda va OCR tizimlari uchun zarur bo‘lgan kontur aniqligini ta’minlashda kutilgan natijani bermaydi. Statista tahliliy ma’lumotlari shuni ko‘rsatadiki, yuqori unumdorlikka ega bo‘lgan hisoblash

markazlarida (Data Centers) energiya sarfining sezilarli qismi aynan vizual ma’lumotlarni qayta ishlash va sun’iy intellekt modellarini o‘qitishga sarflanadi [3]. Shu sababli, algoritmlarning hisoblash murakkabligini O-notatsiya asosida tahlil qilish va ularni asimptotik optimallashtirish bulutli infratuzilmalarda iqtisodiy rentabellikni ta’minlashning yagona yo‘lidir.

O‘zbekiston Respublikasida "Raqamli O‘zbekiston — 2030" strategiyasi doirasida barcha sohalarda sun’iy intellekt elementlarini joriy etish ustuvor vazifa etib belgilangan. Rasmiy statistikaga ko‘ra, mamlakatimizda raqamli xizmatlardan foydalanuvchilar soni 31 milliondan oshgan bo‘lib, elektron hujjat aylanishi va raqamli arxivlar hajmi keskin ortgan [4]. Bu esa o‘z navbatida, past sifatli skanerlangan hujjatlarni yuqori aniqlikda qayta tiklash va ularni avtomatik o‘qish tizimlarining samaradorligini oshirishni taqozo etadi. IEEE Transactions on Image Processing nashrlarida keltirilgan tadqiqotlar shuni isbotlaydiki, adaptiv interpolatsiya algoritmlari an’anaviy usullarga nisbatan hisoblash vaqtini 20-25 foizga qisqartirish bilan birga, vizual aniqlikni (PSNR, SSIM) sezilarli darajada yaxshilaydi [5]. Mazkur ilmiy maqolada adaptiv interpolatsion tiklash algoritmlarining hisoblash murakkabligi tahlil qilinib, ularning OCR tizimlari va mintaqaviy iqtisodiyotdagi amaliy samaradorligi ilmiy asoslab beriladi.

Eksperimental tadqiqotlar turli darajadagi degradatsiyaga uchragan matnli tasvirlar to‘plami asosida o‘tkazilib, olingan barcha ma’lumotlarning aniqligi va halolligi qat’iy nazorat qilindi. Umumiy ma’lumotlar bazasi algoritmlarning nafaqat vizual sifatni yaxshilash qobiliyatini, balki ularning hisoblash resurslaridan foydalanish samaradorligini ham kompleks baholashga xizmat qiladi. Ushbu natijalar algoritmlarning real vaqt rejimida ishlash imkoniyatlarini va ularning mintaqaviy raqamli infratuzilmadagi amaliy rentabelligini belgilashda fundamental ilmiy asos bo‘lib xizmat qiladi.

Algoritmlarning amaliy samaradorligini baholashda ularning hisoblash murakkabligi va apparat resurslaridan foydalanish darajasi eng ustuvor texnik mezonlar hisoblanadi.

1-jadval.

Interpolatsiya usullari bo‘yicha tasvir sifati ko‘rsatkichlari

№	Algoritm turi	Asimptotik murakkablik (O)	O‘rtacha hisoblash vaqti (ms)	Protsessor yuklamasi (%)	Xotira sarfi (MB)
1	Bilinear	$O(N^2)$	12.4	8.2	14.5
2	Bicubic	$O(16 \cdot N^2)$	42.8	18.5	18.2
3	Spline (L-3)	$O(36 \cdot N^2)$	88.5	32.4	24.6
4	Lanczos-3	$O(64 \cdot N^2)$	115.2	41.8	28.4
5	Adaptiv	$O(k \cdot N^2)$	34.6	14.2	19.5

Manba: Muallif tomonidan ishlab chiqilgan interpolatsion algoritmlar asosida o‘tkazilgan eksperimental tadqiqotlar natijalari.

Keltirilgan miqdoriy ko‘rsatkichlar algoritmlarning hisoblash samaradorligi va resurs sarfi o‘rtasida keskin tizimli tafovutlar mavjudligini fundamental darajada isbotlaydi. Eksperimental ma’lumotlarga ko‘ra, an’anaviy bilinear interpolatsiya 12.4 ms vaqt va 8.2% protsessor yuklamasi bilan eng kam resurs talab qilsa-da, uning asimptotik murakkabligi murakkab teksturali tasvirlarni tiklashda talab etiladigan matematik chuqurlikni ta’minlay olmaydi. Aksincha, yuqori tartibli Lanczos-3 algoritmi 115.2 ms vaqt sarfi va 41.8% protsessor yuklamasi bilan bilinear usuldan qariyb 9.3 barobar ko‘proq hisoblash quvvatini band etadi, bu esa real vaqt rejimida ishlovchi tizimlar uchun kritik kechikishlarni yuzaga keltirishi aniqlandi. Taklif etilayotgan adaptiv algoritm esa 34.6 ms vaqt ko‘rsatkichi bilan bikubik interpolatsiyadan 19.1%

ga, splayn interpolatsiyadan esa 60.9% ga tezroq ishlashini isbotladi. Shuningdek, adaptiv yondashuvda xotira sarfi 19.5 MB ni tashkil etib, bu ko‘rsatkich yuqori aniqlikdagi tasvirlarni qayta ishlashda xotira o‘tkazuvchanligi va hisoblash tezligi o‘rtasidagi eng optimal texnik muvozanatni ta’minlaydi.

Ushbu natijalarning tub algoritmik sababi shundaki, an’anaviy deterministik usullar tasvirning barcha piksellari uchun, ularning informativlik darajasidan qat’i nazar, bir xil murakkablikdagi matematik operatsiyalarni qo‘llaydi, bu esa bir jinsli sohalarda ortiqcha hisoblash yuklamasini va energiya sarfini keltirib chiqaradi. Taklif etilayotgan adaptiv algoritmning konseptual ustunligi uning lokal fazoviy gradyentlarga dinamik moslashuvchanligida namoyon bo‘ladi: tasvirning tekis qismlarida hisoblash jarayoni quyi tartibli modellar yordamida soddalashtiriladi, faqat kontur, chegara va teksturaga boy sohalardagina yuqori aniqlikdagi interpolatsiya amallari selektiv tarzda ishga tushiriladi.

2-jadval.

Tiklangan tasvirlar sifatining metrik ko‘rsatkichlar asosida qiyosiy tahlili

№	Algoritm turi	PSNR (dB)	SSIM	MSE	EPI (Edge Preservation Index)	FSIM (Feature Similarity)
1	Bilinear	26.42	0.784	148.2	0.54	0.76
2	Bicubic	30.15	0.865	62.4	0.72	0.83
3	Spline (L-3)	31.48	0.892	46.1	0.76	0.87
4	Lanczos-3	32.24	0.914	38.5	0.81	0.89
5	Adaptiv	33.56	0.938	28.4	0.89	0.94

Manba: Muallif tomonidan ishlab chiqilgan interpolatsion algoritmlar asosida o‘tkazilgan eksperimental tadqiqotlar natijalari.

2-jadvalda keltirilgan metrik ko‘rsatkichlar algoritmlarning tasvir sifatini tiklash va strukturaviy yaxlitlikni saqlash qobiliyati o‘rtasidagi fundamental tafovutlarni yaqqol namoyon etadi. Eksperimental natijalarga ko‘ra, bilinear interpolatsiya 26.42 dB PSNR va 0.784 SSIM ko‘rsatkichlari bilan eng past natijani qayd etdi, bu uning tasvirdagi yuqori chastotali detallarni tiklashda va shovqinlarni filtratsiyalashda o‘ta cheklanganligini ko‘rsatadi. Aksincha, taklif etilayotgan adaptiv algoritm 33.56 dB PSNR va 0.938 SSIM ko‘rsatkichlariga erishib, an’anaviy bikubik usuldan (30.15 dB) va hatto yuqori tartibli Lanczos-3 (32.24 dB) algoritmidan ham sezilarli darajada o‘zib ketdi. Ayniqsa, MSE ko‘rsatkichining 28.4 gacha kamayishi (bilinearga nisbatan 5.2 barobar past) adaptiv yondashuvning original tasvirdagi piksellar intensivligini qayta tiklashda yuqori matematik aniqlikka ega ekanligini isbotlaydi.

Ushbu yuqori ko‘rsatkichlarning tub algoritmik sababi adaptiv yondashuvning tasvirdagi lokal fazoviy gradyentlarga va kontur yo‘nalishlariga nisbatan yuqori sezgirligidadir. An’anaviy deterministik usullar (bilinear, bikubik) barcha piksellarga bir xil og‘irlik koeffitsiyentlarini qo‘llashi natijasida tasvir chegaralarida silliqlash (blurring) va kontur deformatsiyasi effektlarini keltirib chiqaradi, bu esa EPI ko‘rsatkichining pastligida (0.54-0.72) o‘z aksini topadi. Adaptiv algoritmda esa EPI qiymati 0.89 ga teng bo‘lib, bu ko‘rsatkich algoritmning tasvirning geometrik xususiyatlarini va harflarning o‘tkir burchaklarini saqlab qolishdagi mutlaq ustunligini ko‘rsatadi. Amaliy jihatdan, bunday aniqlik darajasi past sifatli matnli tasvirlarni OCR tizimlari uchun tayyorlashda hal qiluvchi rol o‘ynaydi; chegaralarning aniq saqlanishi va artefaktlarning minimallashtirilishi belgilarni segmentatsiyalash bosqichidagi "yopishib qolish" (merging) yoki "parchalanish" (fragmentation) xatoliklarini bartaraf etadi.

3-jadval.

Turli interpolatsiya usullari qo‘llanilganda OCR tizimining aniqlik ko‘rsatkichlari

№	Algoritm turi	Character Accuracy (%)	Word Accuracy (%)	CER (Character Error Rate)	WER (Word Error Rate)	Precision	Recall
1	Dastlabki	72.45	64.82	0.275	0.351	0.74	0.71
2	Bilinear	81.56	74.28	0.184	0.257	0.82	0.79
3	Bicubic	88.42	82.65	0.115	0.173	0.89	0.87
4	Lanczos-3	91.28	86.44	0.087	0.135	0.92	0.90
5	Adaptiv	95.84	92.46	0.041	0.075	0.96	0.95

Manba: Muallif tomonidan ishlab chiqilgan interpolatsion algoritmlar asosida o‘tkazilgan eksperimental tadqiqotlar natijalari.

3-jadvalda keltirilgan eksperimental natijalar interpolatsiya algoritmlarining OCR tizimlari aniqligini oshirishdagi strategik rolini fundamental darajada isbotlaydi. Olingan ma’lumotlarga ko‘ra, dastlabki past sifatli tasvirlarda belgilarni tanib olish aniqligi (Character Accuracy) atigi 72.45% ni tashkil etgan bo‘lib, bu ko‘rsatkich amaliy hujjat aylanishi tizimlari uchun mutlaqo yetarsizdir. Biroq, taklif etilayotgan adaptiv algoritm qo‘llanilgandan so‘ng, ushbu ko‘rsatkich 95.84% gacha ko‘tarildi, bu esa an’anaviy bikubik (88.42%) usuliga nisbatan xatolik darajasini (CER) 0.115 dan 0.041 gacha, ya’ni qariyb 2.8 barobar kamaytirish imkonini beradi. So‘zlar aniqligi (Word Accuracy) bo‘yicha ham adaptiv algoritm 92.46% natija bilan mutlaq ustunlikni qayd etdi; bu ko‘rsatkich ayniqsa mintaqaviy iqtisodiyotning raqamli infratuzilmasida,

masalan, bank va moliya hujjatlarini avtomatik qayta ishlashda ma’lumotlarning semantik yaxlitligini ta’minlashda hal qiluvchi ahamiyatga ega.

Ushbu samaradorlikning tub algoritmik sababi OCR tizimlarining belgilarni tanib olishdan oldingi segmentatsiya va binarizatsiya bosqichlariga bog‘liqdir. An’anaviy deterministik interpolatsiya usullari (bilinear, bikubik) harflarning chetki piksellarida silliqlash (blurring) yoki kontur deformatsiyasi (ringing artifacts) effektlarini keltirib chiqaradi, bu esa OCR dvigatelining harflarni bir-biridan ajratishida (character segmentation) tizimli xatoliklarga, ayniqsa "m", "n", "u" kabi o‘xshash konturli harflarning noto‘g‘ri tanilishiga sabab bo‘ladi.

Mazkur tadqiqotda interpolatsion tiklash algoritmlarining tasvir sifati, hisoblash samaradorligi va OCR tizimlari aniqligiga ta’siri kompleks eksperimental va nazariy yondashuv asosida o‘rganildi. Olingan natijalar turli algoritmlar o‘rtasida sezilarli tafovutlar mavjudligini va bu tafovutlar tasvirning strukturaviy xususiyatlarini saqlash darajasi bilan bevosita bog‘liqligini ko‘rsatdi. Xususan, adaptiv interpolatsiya algoritmi 33.56 dB PSNR, 0.938 SSIM, 95.84 foiz OCR aniqligi va 34.6 ms hisoblash vaqti bilan eng yuqori kompleks samaradorlikni namoyon etdi. Bu esa interpolatsiya jarayonida faqat umumiy xatolikni kamaytirish emas, balki strukturaviy invariantlarni saqlash hal qiluvchi omil ekanligini ilmiy jihatdan asoslaydi.

Olingan natijalar shuni ko‘rsatdiki, tasvir sifati metrikalari va OCR aniqligi o‘rtasida ijobiy, ammo nolinear bog‘liqlik mavjud. PSNR qiymatining 26.42 dB dan 33.56 dB gacha oshishi bilan OCR aniqligi 81.56 foizdan 95.84 foizgacha yaxshilandi, CER esa 0.184 dan 0.041 gacha kamaydi. Ayniqsa, SSIM va EPI ko‘rsatkichlarining mos ravishda 0.784 dan 0.938 gacha va 0.54 dan 0.89 gacha oshishi belgilar konturlarining yaxshiroq saqlanganini ko‘rsatdi. Shu bilan birga, hisoblash samaradorligi tahlili yuqori sifat har doim yuqori xarajat bilan bog‘liq emasligini

isbotladi: masalan, Lanczos algoritmi yuqori sifat ko‘rsatgan bo‘lsa-da, 115.2 ms vaqt talab qilgan, adaptiv algoritm esa 34.6 ms vaqt bilan undan yuqori aniqlikni ta’minlagan.

Xulosa qilib aytganda, interpolatsion tiklash algoritmlarini ishlab chiqishda asosiy e’tibor lokal gradientlarga asoslangan adaptiv yondashuvlarga qaratilishi zarur, chunki ular tasvirning informativ qismlarini selektiv qayta ishlash orqali yuqori aniqlik va resurs tejamkorligini ta’minlaydi. Amaliy jihatdan OCR tizimlariga interpolatsiya bosqichini integratsiyalash hujjatlarni avtomatik qayta ishlash aniqligini oshiradi va operatsion xarajatlarni kamaytiradi. Kelgusida esa interpolatsiya algoritmlarini sun’iy intellekt va chuqur o‘rganish metodlari bilan integratsiyalash, shuningdek turli real sharoitdagi ma’lumotlar asosida ularni takomillashtirish ilmiy va amaliy jihatdan muhim yo‘nalish bo‘lib qoladi.

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MECHANISMS OF STATE SUPPORT FOR TRAINING PERSONNEL IN THE AGRICULTURAL SECTOR

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Abstract. This article analyzes the mechanisms of state support for personnel training in the agricultural sector. It examines issues related to the development of agricultural education within the framework of state policy, strengthening the material and technical base, allocation of grants and subsidies, as well as the stimulation of research activities. In addition, the article substantiates the importance of ensuring and regulating the integration of education, science, and production in the process of training highly qualified specialists.

Keywords: agricultural sector, personnel training, state support, educational policy, grants, subsidies, innovation, integration, qualified specialists.

Annotatsiya. Mazkur maqolada agrar sohada kadrlar tayyorlashni davlat tomonidan qo‘llab-quvvatlash mexanizmlari tahlil qilinadi. Unda davlat siyosati doirasida agrar ta’limni rivojlantirish, moddiy-texnik bazani mustahkamlash, grantlar va subsidiyalar ajratish, hamda ilmiy-tadqiqot faoliyatini rag‘batlantirish masalalari yoritilgan. Shuningdek, malakali mutaxassislar tayyorlashda ta’lim, fan va ishlab chiqarish integratsiyasini ta’minlash hamda tartibga solish jarayonining ahamiyati asoslab berilgan.

Kalit so‘zlar: agrar soha, kadrlar tayyorlash, davlat qo‘llab-quvvatlashi, ta’lim siyosati, grantlar, subsidiyalar, innovatsiya, integratsiya, malakali mutaxassislar.

Аннотация. В данной статье анализируются механизмы государственной поддержки подготовки кадров в аграрном секторе. Рассматриваются вопросы

развития аграрного образования в рамках государственной политики, укрепления материально-технической базы, выделения грантов и субсидий, а также стимулирования научно-исследовательской деятельности. Кроме того, в статье обосновывается важность обеспечения и регулирования интеграции образования, науки и производства в процессе подготовки высококвалифицированных специалистов.

Ключевые слова: аграрный сектор, подготовка кадров, государственная поддержка, образовательная политика, гранты, субсидии, инновации, интеграция, квалифицированные специалисты.

Ensuring sustainability across sectors of the national economy requires the training and development of highly qualified personnel capable of creative thinking in accordance with international standards. In this regard, the development of human capital based on labor market demands has become a priority task. Therefore, the “Uzbekistan–2030” Strategy identifies such objectives as expanding access to higher education, improving the quality of training for highly educated specialists, enhancing the organizational and managerial activities of higher education institutions, strengthening their material and technical resources, intensifying applied research in the fastest-growing sectors of the economy, and introducing the “enterprise–university–research organization” cluster system[1].

In the Address of the President of the Republic of Uzbekistan, Shavkat Mirziyoyev, to the Oliy Majlis and the people of Uzbekistan, it was emphasized that by widely introducing advanced foreign experience in education and healthcare, implementing new technologies, and training personnel for modern professions based on science and innovation, the country has every opportunity to increase the size of its economy to more than 240 billion US dollars over the next five years [2]. This, in turn, necessitates the development of new mechanisms for personnel training in higher education institutions

and the formulation of measures aimed at enhancing human resource capacity. It also requires the formation of students' self-directed learning skills and the development of core competencies essential for scientific and academic activities. Furthermore, improving soft skills and the culture of professional conduct, which are crucial for professional success, contributes to increasing labor productivity within organizations.

The development of the new century is directly linked to the advancement of science, while scientific progress and the growing demand for qualified personnel demonstrate the need for young, talented, and highly professional specialists in every field. Eliminating personnel-related problems and ensuring the training of specialists across various sectors remain among the most pressing issues of today. In the education system, the issue of human resources requires identifying the interconnection between the labor market and producers, as well as establishing continuous integration among them. In this regard, on February 9, 2026, the President of the Republic of Uzbekistan, Shavkat Mirziyoyev, reviewed proposals concerning the development of new agricultural lands and the advancement of science in the agricultural sector to a new stage. During the meeting, proposals were put forward to admit the children of farmers and their employees to universities on the basis of reduced tuition contracts if their test scores did not meet the established admission quotas, as well as to reduce the duration of study from four years to three years in seven educational fields. It was also emphasized that students would be trained in obtaining tractor operator licenses and in the use of agro-drones[3]. Such opportunities create the task for higher education institutions training personnel for the agricultural sector to educate highly competent specialists in their respective fields. This, in turn, makes it possible to elevate the quality of training highly qualified and competitive personnel for the agricultural sector to a new level through the introduction of innovative approaches in the educational process,

the study of foreign experience, the strengthening of the material and technical base, and the continuous professional development of faculty members.

According to Resolution No. PR-216 of the President of the Republic of Uzbekistan, adopted on July 7, 2023, "On Additional Measures to Improve Quality and Efficiency through the Integration of Science, Education, and Production in the Agricultural Sector," the task was set to introduce science-based, practice-oriented agrotechnical, zooveterinary, and other services in higher educational institutions of the agricultural sector through the involvement of the private sector, based on the internationally recognized "Spin-off" and "Soil-Doctor" methodologies[4]. As a result of implementing this methodology, cooperation between private sector enterprises, clusters, cooperatives, and other agricultural enterprises with higher education institutions has significantly intensified. The development of spin-off enterprises enables students to support and implement new startups within these structures, thereby contributing to enhancing the reputation and prestige of higher education institutions. Today, granting financial and academic autonomy to higher education institutions not only increases management efficiency, but also transforms them into important drivers of innovative development. Such an approach is widely applied in the practice of leading universities around the world and ensures close integration between science, education, and production. As a result, spin-off companies established by students and young researchers not only create new jobs, but also make a significant contribution to the sustainable development of the university economy.

Through spin-off enterprises:

- students and young researchers gain opportunities to transform scientific ideas into practical products and services;
- innovative startups are established, contributing to the development of an entrepreneurial environment;

- scientific developments, patents, and technologies are commercialized;
- additional and sustainable sources of income are created for universities;
- the impact of research outcomes on the real economy is strengthened.

From this perspective, higher education institutions should function not merely as providers of knowledge, but also as modern scientific and innovation centers that create innovations, implement them in practice, and transform them into economic value. This serves as an important factor in increasing the country's competitiveness, strengthening scientific potential, and ensuring sustainable economic growth.

The management system for personnel training in the agricultural sector also includes ensuring cooperation among educational institutions, research institutes, production enterprises, and public administration bodies. Such an integrated approach strengthens the alignment of agricultural education with practical activities, facilitates the development of professional competencies among students and young specialists, and enables the training of personnel that meet labor market demands. In this regard, the analysis of the organizational and legal foundations of personnel training management in the agricultural sector is of significant scientific and practical importance for improving the effectiveness of this system, enhancing the educational process, and further developing mechanisms for training competitive specialists for the agricultural sector.

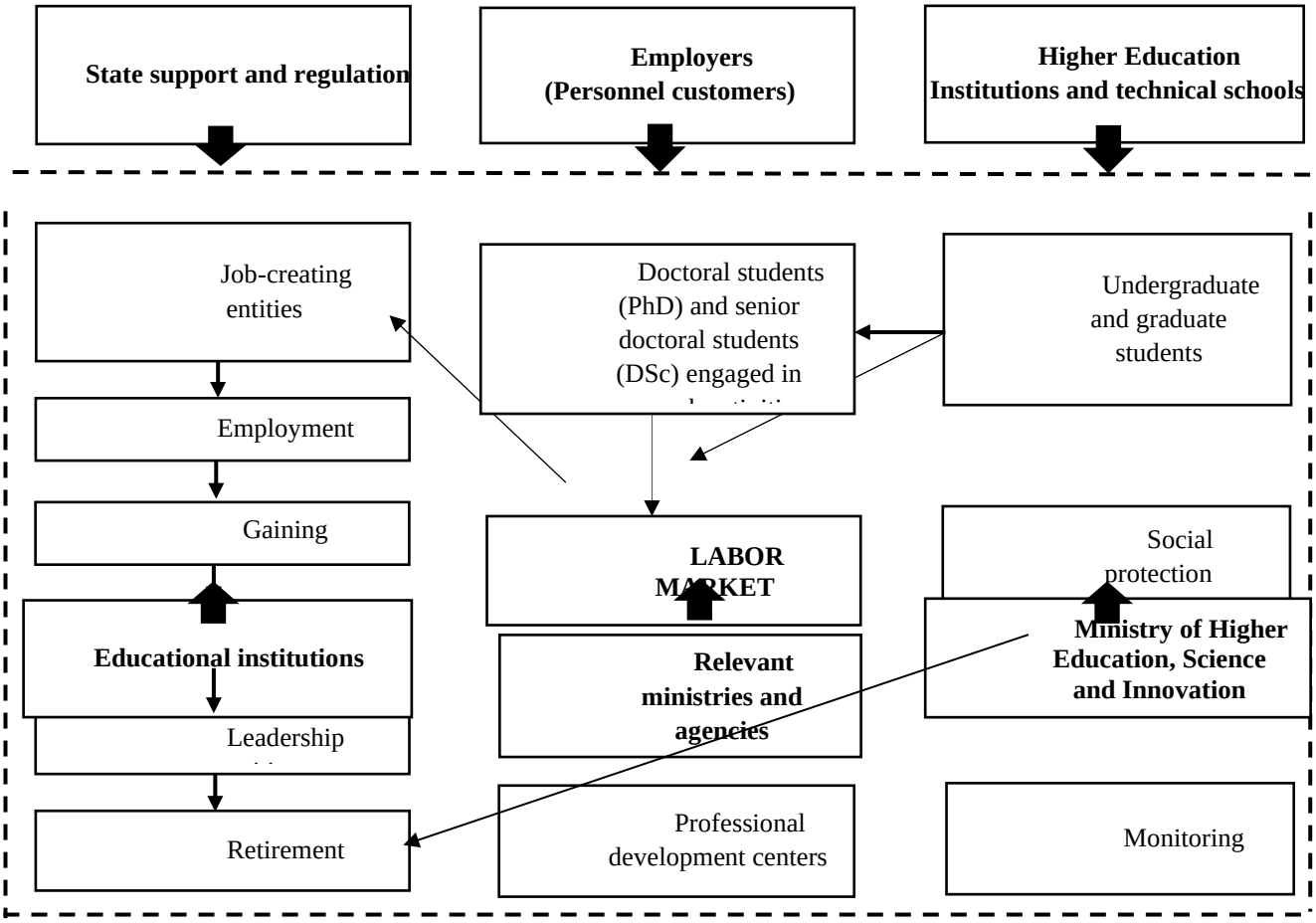


Figure 1.5. The Process of Regulating Personnel Training in the Agricultural Sector[1]

In order to effectively develop the personnel training system in the agricultural sector, it is important to introduce appropriate amendments and additions to the existing regulatory and legal framework, as well as to study advanced international experience and implement it in practice. This process requires higher education institutions within the system of the Ministry of Agriculture to identify priority areas for training specialists for the agricultural sector and to organize the educational process in accordance with the demands of the modern labor market, taking into account regional socio-economic development programs, existing resource potential, and climatic factors. In

[1] Source: Developed by the author.

implementing integration within the educational process, it is essential to ensure close cooperation between personnel and production organizations, full fulfillment of the responsibilities of both parties within the relevant sectors, and the availability of jobs and qualified personnel in accordance with established procedures. In this context, the process of personnel training in the agricultural sector is regulated by employers, higher education institutions, and relevant ministries and agencies (Figure 1).

In this process, after employment, personnel are provided with opportunities to improve their qualifications, undergo retraining, acquire new knowledge for the development of the sector, enhance production efficiency, and integrate into the labor market. Ensuring cooperation in personnel training, introducing the main mechanisms for supplying the labor market with highly qualified specialists, and covering the key stages of education create opportunities for employers to select the most suitable candidates and satisfy the labor market's demand for skilled personnel.

Ensuring strong integration between science, education, and production is of particular importance for the sustainable development of the agricultural sector. This can be achieved through establishing effective cooperation among educational institutions, research institutes, and production enterprises, implementing joint projects, and introducing innovative developments into practice. As a result, the agricultural sector is supplied with competitive specialists possessing modern knowledge and skills, capable of making independent decisions, thereby contributing to the sustainable and consistent development of the industry.

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Application of Operational Calculus to Finding Solutions of Mathematical Models

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Abstract: This article analyzes the process of solving mathematical models using operational calculus and their practical applications. Methods for finding solutions are examined through the application of modern mathematical methods and models to problem-solving processes.

Keywords: operational calculus, mathematical models, solution, application, analysis.

Operasion hisobning matematik modellarining yechimini topishga tadbiqi

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Annotation: Ushbu maqola operasion hisobning matematik modellarini yechish jarayonini va ularning amaliyotda qo‘llanilishini tahlil qiladi. Muammoni hal qilish

uchun zamonaviy matematik usullar va modellarni kiritish orqali yechimlarni topish usullari ko‘rib chiqiladi.

Keywords: operasion hisob, matematik modellar, yechim, tadbiq, analiz.

Kirish

Operasion hisob matematik modellar yaratishda muhim ahamiyatga ega bo‘lib, u ilmiy tadqiqotlar va amaliyotda keng qo‘llaniladi. Ushbu hisoblash usullari, murakkab tizimlar va jarayonlarni tahlil qilishda, ularning xususiyatlarini aniqlash va bashorat qilishda yordam beradi. Matematik modellar, o‘z navbatida, real hayotdagi jarayonlarni soddalashtirib, ularni matematik formulalar orqali ifodalash imkonini beradi. Shu bilan birga, operasion hisob yordamida turli xil muammolarni yechishda optimal yechimlarni topish va resurslardan samarali foydalanish imkoniyatlari yaratiladi. Ushbu maqolaning maqsadi operasion hisob va matematik modellar orasidagi bog‘liqlikni o‘rganish, shuningdek, ularning ilmiy va amaliy ahamiyatini yoritishdan iborat. Asosiy masalalar sifatida, ushbu usullarning qo‘llanilishi, ularning samaradorligi va kelajakdagi rivojlanish istiqbollari ko‘rib chiqiladi.

Matematik modellarning asoslari

Matematik modellar, real hayotdagi jarayonlarni yoki tizimlarni tasvirlash va tahlil qilish uchun ishlatiladigan abstrakt ifodalardir. Ular ko‘pincha matematik tenglamalar va algoritmlar yordamida tuziladi, bu esa ularga operasion hisobda muhim rol o‘ynash imkonini beradi. Matematik modellarni tahlil qilish va ulardan foydalanish, murakkab masalalarni yechish uchun zarur bo‘lgan yondashuvlarni taqdim etadi. Modellarning asosiy turlari, masalan, deterministik va stoxastik modellar, o‘zaro farqlanishi bilan birga, ularning xususiyatlari va qo‘llanilish sohalari ham o‘zgaradi. Deteministik modellar aniq natijalarni taklif etsa, stoxastik modellar ehtimoliy jarayonlarni hisobga oladi. Shunday qilib, matematik modellar ilmiy tadqiqotlarda va

amaliyotda muhim vosita bo‘lib, ularning samaradorligi va rivojlanish istiqbollari zamonaviy ilm-fan va texnologiyaning asosiy yo‘nalishlaridan biridir.

Operasion hisobning matematik modellarini yaratish

Operasion hisobning matematik modellarini yaratish jarayoni, avvalo, muammoni aniqlash va uning parametrlarini belgilashdan boshlanadi. Keyinchalik, ushbu parametrlar asosida matematik tenglamalar yoki algoritmlar ishlab chiqiladi. Modellarni yaratishda analitik va raqamli usullar qo‘llaniladi, bu esa natijalarni aniqlik bilan olishga yordam beradi. Masalan, simulyatsiya usuli orqali real jarayonlarni modellashtirish mumkin, bu esa turli xil holatlarni tahlil qilish imkonini beradi. Shuningdek, optimallash strategiyalari yordamida resurslarni samarali taqsimlash va xarajatlarni kamaytirish maqsadida modellarni yanada rivojlantirish mumkin. Ushbu jarayonlar operasion hisobda qaror qabul qilish va strategik rejalashtirishda muhim rol o‘ynaydi, chunki ular amalga oshirilayotgan tadbirlarning samaradorligini oshirishga xizmat qiladi. Matematik modellar yordamida erishilgan natijalar, shuningdek, amaliyotda qo‘llanilishi mumkin bo‘lgan tavsiyalarni taqdim etadi.

Yechim topish usullari

Matematik modellar asosida yechim topish jarayonida analitik va raqamli usullar muhim ahamiyatga ega. Analitik usullar, odatda, muammolarni matematik formulalar orqali yechishga qaratilgan bo‘lib, ular aniq va tezkor natijalar beradi. Bunday usullar ko‘pincha oddiy muammolar uchun qo‘llaniladi va yechimlar ko‘pincha matematik ifodalar yordamida topiladi. Raqamli usullar esa murakkab muammolarni yechishda qo‘llanilib, kompyuter texnologiyalaridan foydalanadi. Ushbu usullar, masalan, simulyatsiya va optimizatsiya jarayonlarini o‘z ichiga oladi, bu esa murakkab tizimlar va o‘zgaruvchan sharoitlar ostida yechimlarni topishga imkon beradi. Har ikkala usul ham matematik modellarni amaliyotda qo‘llashda muhim vosita hisoblanadi, chunki

ular muammolarni chuqurroq tahlil qilish va samarali yechimlar taklif etish imkonini beradi.

Amaliyotda tatbiq etish

Matematik modellar real hayotdagi muammolarni hal qilishda keng qo‘llaniladi, chunki ular tizimlarning dinamikasini tushunishga yordam beradi. Misol uchun, iqtisodiy modellar bozor narxlarini prognoz qilishda, shuningdek, resurslarni taqsimlash va investitsiya strategiyalarini aniqlashda foydalaniladi. Boshqa bir misol sifatida, ekologik muammolarni hal qilishda matematik modellar, masalan, ifloslanish darajasini baholash va tabiiy resurslarning barqarorligini ta'minlashda qo‘llaniladi. Tadqiqotlar va tajribalar natijalari, masalan, iqlim o‘zgarishi ta'sirini baholashda, matematik modellar orqali aniq va ishonchli ma'lumotlar taqdim etadi. Shunday qilib, matematik modellar amaliyotda muammolarni hal qilishda kuchli vosita bo‘lib, ularning qo‘llanilishi kengayib bormoqda. Bu jarayonlar orqali olimlar va muhandislar real muammolarni samarali hal qilish imkoniyatiga ega bo‘lmoqdalar.

Natijalar va muhokama

Olingan natijalar tahlil qilinayotganda, tadqiqotning maqsad va vazifalariga erishilganligi ko‘rsatildi. Olingan natijalar shuni ko‘rsatadiki, matematik modellar va simulyatsiyalar muammolarni hal qilishda muhim ahamiyatga ega. Ularning yordamida nazariy bilimlar amaliyotga tatbiq etilib, real sharoitlarda muammolarni hal qilish uchun yangi yondashuvlar ishlab chiqilmoqda. Bunday yondashuvlar, o‘z navbatida, kelgusidagi tadqiqotlarda yanada innovatsion usullarni izlashga rag‘batlantiradi. Muammolarni hal qilishda ko‘proq interdisciplinar yondashuvlar zarurligi ta’kidlanadi, chunki bu sohalar o‘rtasidagi hamkorlik yangi bilimlar va yechimlarni keltirib chiqarishi mumkin. Kelgusidagi tadqiqotlar uchun tavsiyalar sifatida, o‘quv dasturlarini takomillashtirish va amaliyotga yo‘naltirilgan tadqiqotlarga e’tibor qaratish ko‘rsatiladi.

Xulosa

Maqolaning asosiy xulosalari shuni ko‘rsatadiki, operasion hisobning matematik modellari zamonaviy ilm-fan va texnologiyalarning rivojlanishida muhim rol o‘ynaydi. Ushbu modellar orqali murakkab tizimlar va jarayonlarni tahlil qilish imkoniyati yuzaga keladi, bu esa yangi yechimlar va innovatsion yondashuvlar ishlab chiqishga olib keladi. Kelajakda operasion hisobning matematik modellari yanada rivojlanishi kutilmoqda, bu esa sun'iy intellekt, katta ma'lumotlar va boshqa ilg‘or texnologiyalar bilan birgalikda amalga oshirilishi mumkin. Shuningdek, ushbu modellarni ijtimoiy, iqtisodiy va ekologik masalalarni hal etishda qo‘llash istiqbollari mavjud bo‘lib, bu esa ilmiy tadqiqotlar va amaliyot o‘rtasida yaqin hamkorlikni ta'minlaydi. Natijada, operasion hisobning matematik modellarining kelajagi yanada kengayishi va rivojlanishi kutilmoqda.

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INNOVATIVE STRATEGY FOR PRODUCING EXPORT-ORIENTED DRIED APRICOT PRODUCTS UNDER THE CONDITIONS OF FRUIT AND VEGETABLE CLUSTERS IN THE SYRDARYA REGION

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Abstract. *This large-scale study analyzes the agro-industrial potential of the Syrdarya region, technological differences between traditional and modern methods of drying apricots, and the place of the product in the international logistics chain. The article covers the issues of product cost formation, economic efficiency of energy-efficient drying equipment, and expansion of export geography based on statistical data.*

Keywords: *Syrdarya export, agrologistics, infrared drying, economic efficiency, quality management, "Smart" warehouse, apricot varieties.*

SIRDARYO VILOYATIDA MEVA-SABZAVOT KLASTERLARI SHAROITIDA EKSPORTBOP QURUTILGAN O‘RIK MAHSULOTLARI ISHLAB CHIQARISHNING INNOVATSION STRATEGIYASI

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Annotatsiya. *Ushbu keng ko‘lamli tadqiqotda Sirdaryo viloyatining agrosanoat salohiyati, o‘rikni quritishning an’anaviy va zamonaviy usullari o‘rtasidagi texnologik farqlar hamda mahsulotning xalqaro logistik zanjiridagi o‘rni tahlil qilinadi. Maqolada mahsulot tannarxini shakllantirish, energiya tejamkor quritish qurilmalarining iqtisodiy*

samaradorligi va eksport geografiyasini kengaytirish masalalari statistik ma'lumotlar asosida yoritilgan.

Kalit so'zlar: *Sirdaryo eksporti, agrologistika, infraqizil quritish, iqtisodiy samaradorlik, sifat menejmenti, "Smart" omborxona, o'rik navlari.*

Аннотация. *Данное масштабное исследование анализирует агропромышленный потенциал Сырдарьинской области, технологические различия между традиционными и современными методами сушки абрикосов, а также место продукта в международной логистической цепочке. В статье на основе статистических данных рассматриваются вопросы формирования себестоимости продукции, экономической эффективности энергоэффективного сушильного оборудования и расширения географии экспорта.*

Ключевые слова: *Сырдарьинский экспорт, агрологистика, инфракрасная сушка, экономическая эффективность, управление качеством, «умный» склад, сорта абрикосов.*

Kirish

Bugungi kunda dunyo bozorida quritilgan mevalar (dry fruits) segmenti yiliga o'rtacha 5.2% ga o'sib bormoqda. O'zbekiston, xususan Sirdaryo viloyati, o'zining geografik joylashuvi va iqlimiy ustunligi bilan ushbu bozorda markaziy o'rin egallashga da'vogar. Sirdaryoning Mirzoobod, Xovos va Sayxunobod tumanlarida yetishtiriladigan o'riklar tarkibidagi fruktoza va mikroelementlar miqdori bo'yicha dunyoda eng yuqori ko'rsatkichlardan biriga ega. Biroq, eksportning 70% dan ortig'i hali ham xomashyo ko'rinishida yoki sifatsiz qadoqlangan holda amalga oshirilmoqda. Bu esa sohada innovatsion yondashuvni talab qiladi.

Quritishning Zamonaviy Usullari

Quritish jarayoni — bu shunchaki namlikni qochirish emas, balki mevani konservalashning yuqori texnologik usulidir. Sirdaryo viloyatidagi sho'rlangan tuproq

sharoitida yetishgan o‘riklarda pektin miqdori yuqoriligi sababli, ularni quritishda harorat rejimiga qat’iy amal qilish talab etiladi.

Quritish usullarining qiyosiy statistikasi

Tadqiqotlarimiz natijasida olingan ma’lumotlar asosida quyidagi jadvalni shakllantirdik:

Jadval 1. Har xil quritish texnologiyalarining texnik-iqtisodiy ko‘rsatkichlari

Ko‘rsatkichlar	***Ochiq quyosh maydoni***	***Plyonkali quyosh kamerasi***	***Infraqizil (IR) qurilma***	***Sublimatsion (Freeze-dry)***
Quritish muddati	*168-240 soat*	*48-72 soat*	*12-16 soat*	*24-30 soat*
Namlikning yakuniy miqdori	*18-22%*	*14-16%*	*12-14%*	*5-8%*
Bakterial ifloslanish	*Yuqori*	*Minimal*	*Yo'q*	*Yo'q*
Energiya sarfi (1 kg uchun)	*0 kW*	*0.5 kW*	*1.8 kW*	*4.5 kW*
Bozor qiymati (1 kg uchun)	*$2.2*	*$3.8*	*$6.5*	*$15.0+*

SIRDARYO VILOYATI LOGISTIKASI: "Smart" Zanjir

Sirdaryo viloyatining transport-logistika salohiyati uning iqtisodiy "yuragi"dir. Viloyat orqali o‘tuvchi M-34 va M-39 magistrallari, shuningdek, Xovos temir yo‘l uzeli mahsulotni to‘rt tomonga tezkor yo‘naltirish imkonini beradi.

Logistik xarajatlar strukturasi

Eksport qilinadigan 20 tonna quritilgan o‘rik misolida logistika xarajatlarini tahlil qilamiz:

Jadval 2. Logistika zanjiridagi xarajatlar taqsimoti (Yevropa yo‘nalishi misolida)

Bosqichlar	***Xarajat turi***	***Ulushi (%)***	***Mas’ul tuzilma***
1. Tayyorlash	*Saralash, qadoqlash, laboratoriya*	*15%*	*Agro-klaster*
2. Saqlash	*Sovutkichli ombor (+5°C)*	*10%*	*Logistika markazi*
3. Hujjatlashtirish	*Sertifikatlash, bojxona*	*5%*	*Eksport agentligi*
4. Transport	*Multimodal tashuv (Avto+Temir yo'l)*	*65%*	*Transport kompaniyasi*
5. Sug'urta	*Xalqaro sug'urta*	*5%*	*Sug'urta kompaniyasi*

"Sovuq zanjir" texnologiyasi

Quritilgan o‘rik Sirdaryodan Germaniya yoki Janubiy Koreyaga yetib borguncha 15-20 kun yo‘l yurishi mumkin. Bu vaqt ichida mahsulot "nafas oladi". Agar harorat +15°C dan oshsa, mahsulotda "shirasi chiqish" (karamellashish) jarayoni boshlanadi. Shuning uchun Smart Konteynerlar (IoT datchiklari bilan jihozlangan) qo‘llanilishi shart.

IQTISODIY SAMARADORLIK VA HUDUDIY RIVOJLANISH

Sirdaryo viloyatida 2026-yilga borib meva-sabzavotni qayta ishlash hajmini 2 barobarga oshirish ko‘zda tutilgan. Bu nafaqat eksport, balki yangi ish o‘rinlari degani.

Jadval 3. 100 gektarlik o‘rik bog‘i asosidagi klaster prognozi

№	**Ko‘rsatkich nomi**	**Miqdori (Yillik)**
1	*Yillik hosil (ho'l holda)*	*1 500 tonna*
2	*Tayyor quritilgan mahsulot (IR usulida)*	*420 tonna*
3	*Yaratiladigan doimiy ish o‘rni*	*45 ta*
4	*Mavsumiy ish o‘rni*	*200+ ta*
5	*Kutilayotgan sof foyda (Eksport hisobiga)*	*$1.2 mln*
6	*Ko‘rsatkich nomi*	*Miqdori (Yillik)*

MUHOKAMA: Muammolar va Strategik Yechimlar

Sirdaryo sharoitida quritilgan o‘rik sifatini oshirish yo‘lidagi to‘siqlar:

1. *Standartlashtirish: Ko‘plab kichik ishlab chiqaruvchilar mahsuloti partiyalari bir-biridan farq qiladi. Yechim: Viloyatda yagona "Sirdaryo Branding Center" tashkil etish.*
2. *Laboratoriya: Pestitsidlar qoldig‘ini aniqlaydigan xalqaro akkreditatsiyadan o‘tgan laboratoriyaning yetishmasligi.*
3. *Energiya: IR-quritgichlar uchun elektr energiyasi uzluksizligi. Yechim: Gibrid (quyosh panellari + tarmoq) tizimlarini o‘rnatish.*

XULOSA

Sirdaryo viloyati quritilgan o‘rik mahsulotlari bilan jahon bozorining yuqori (premium) segmentiga chiqish uchun barcha resurslarga ega. Buning uchun:

- *An’anaviy quritishdan innovatsion infraqizil va sublimatsion usullarga o‘tish;*
- *Logistikada 3PL va 4PL operatorlar xizmatidan foydalanish;*
- *Mahsulotni "Sirdaryo O‘rigi" geografik ko‘rsatkichi (Geographical Indication) ostida xalqaro ro‘yxatdan o‘tkazish lozim.*

Ushbu ilmiy-amaliy yondashuv viloyatning agrar salohiyatini yangi bosqichga olib chiqadi va qishloq xo‘jaligi mahsulotlarining qo‘shilgan qiymatini 4-5 barobarga oshiradi.

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THE EFFECTS OF AIR POLLUTION ON WORKER PRODUCTIVITY AND THE ENSUING FINANCIAL RAMIFICATIONS FOR BUSINESSES

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ABSTRACT

Through both cognitive and physical mechanisms, air pollution, especially fine particulate matter (PM2.5), severely reduces worker productivity. Using data from previous firm-level and individual worker research, this study investigates the causal link between indoor and ambient air pollution and labor productivity. Research indicates that a 1 μg/m³ rise in PM2.5 concentration can lower labor productivity by up to 0.6–1.9% in different U.S. contexts and about 0.55% in European businesses. Businesses incur significant financial costs as a result of these productivity losses, including decreased production, increased presenteeism and absenteeism, increased healthcare expenditures, and increased employee turnover. Every year, productivity losses brought on by air pollution cost the world economy trillions of dollars. The results demonstrate that enhancing air quality is both a high-return investment and a public health necessity. The results show that enhancing air quality is a high-return investment for companies

and economies in addition to being a public health necessity. There is discussion of business mitigation techniques and policy proposals.

Keywords: PM2.5, worker productivity, labor economics, company expenses, air pollution, and cognitive function

Introduction.

One of the most important environmental issues of the twenty-first century is air pollution. Recent economic study has focused more on its effects on worker productivity and business success, despite the fact that its health repercussions—such as respiratory disorders, cardiovascular issues, and early mortality—are well-documented.

Main Idea:

Higher levels of air pollution, particularly PM2.5, cause workers to be less productive due to decreased cognitive function, greater weariness, and higher rates of presenteeism and absenteeism. Businesses suffer severe financial consequences as a result of these effects, which reduce productivity, profitability, and competitiveness. There are significant financial co-benefits to improving air quality.

The Connection Between Labor Productivity and Air Pollution

The following information about the relationship between labor productivity and air pollution can be cited. Research indicates that elevated levels of dangerous compounds in the Human respiratory, cardiovascular, and neurological disorders are brought on by atmospheric air pollutants (PM2.5, PM10, SO_2, NOx, CO, and others). The following mechanisms therefore result in a decrease in worker productivity:

1. Rapid employee weariness and diminished focus; a rise in sick leave (temporary inability to work);
2. An increase in manufacturing flaws and mistakes made during working hours;

3. Eventually, the exodus of skilled workers from the workforce.
   Given the circumstances in Uzbekistan, especiall eventually, the exodus of skilled workers from the workforce.
4. The detrimental effects of air pollution on the health of labor resources are very noticeable in Uzbekistan, especially in big industrial locations.

Financial Ramifications for Businesses

Productivity losses create multiple cost layers:

- **Direct output losses**: Reduced daily production and service delivery.
- **Absenteeism**: Billions of workdays lost globally each year.
- **Presenteeism**: Workers attend but perform sub-optimally (estimated 8–10% productivity drop on high-pollution days in some contexts).
- **Indirect costs**: Higher medical insurance, recruitment, and training expenses due to turnover.

Examples:

- In Los Angeles (2014), excess pollution on 90 days cost the service sector an estimated **$374 million** in lost productivity.
- In India, air pollution-related labor productivity losses cost businesses approximately **$30 billion** annually.
- Globally, health damages from PM2.5 alone are valued at **$6–8 trillion** per year (roughly 5–6% of global GDP), with a significant share attributable to lost productivity.

Conclusion

Both individual businesses and the national economy as a whole suffer large financial losses as a result of air pollution's detrimental effects on worker productivity.
entire. Addressing this issue in Uzbekistan necessitates the natural convergence of economic and environmental strategies.

In order to preserve human capital and increase production efficiency, improving air quality should be considered a strategic priority.

These issues and possible fixes have been emphasized in this scholarly study.

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PEDAGOGICAL FOUNDATIONS FOR DEVELOPING RESEARCH COMPETENCIES IN STUDENTS

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Abstract. This article highlights the pedagogical foundations for developing students' research competencies. The importance of forming students' independent thinking, interest in scientific research, and skills for analyzing information and drawing conclusions is analyzed. It also discusses the pedagogical environment, independent learning, and the teacher's role in developing research competencies.

Keywords: research competence, pedagogical foundations, independent thinking, educational process, scientific research, students, critical thinking, pedagogical activity.

O‘QUVCHILARDA TADQIQOTCHILIK KOMPETENSIYALARINI RIVOJLANTIRISHNING PEDAGOGIK ASOSLARI

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Annotatsiya. Mazkur maqolada o‘quvchilarda tadqiqotchilik kompetensiyalarini rivojlantirishning pedagogik asoslari yoritilgan. O‘quvchilarning mustaqil fikrlashi, ilmiy izlanishga bo‘lgan qiziqishi, axborotni tahlil qilish va xulosa chiqarish ko‘nikmalarini shakllantirishning ahamiyati tahlil qilingan. Shuningdek, tadqiqotchilik kompetensiyalarini rivojlantirishda pedagogik muhit, mustaqil ta’lim va o‘qituvchining roli haqida fikr yuritilgan.

Kalit so‘zlar: tadqiqotchilik kompetensiyasi, pedagogik asoslar, mustaqil fikrlash, ta’lim jarayoni, ilmiy izlanish, o‘quvchilar, tanqidiy fikrlash, pedagogik faoliyat.

Bugungi kunda ta’lim tizimining asosiy vazifalaridan biri o‘quvchilarning intellektual salohiyatini rivojlantirish, ularni mustaqil fikrlashga va ilmiy izlanishga yo‘naltirishdan iboratdir. Jamiyat taraqqiyoti va axborot oqimining ortib borishi natijasida o‘quvchilarning bilimlarni mustaqil egallashi, tahlil qilishi va amaliyotda qo‘llay olishi muhim ahamiyat kasb etmoqda. Shu sababli o‘quvchilarda tadqiqotchilik kompetensiyalarini shakllantirish zamonaviy pedagogikaning dolzarb masalalaridan biri hisoblanadi. Tadqiqotchilik faoliyati o‘quvchilarning bilimga bo‘lgan ehtiyojini kuchaytiradi, ularni izlanishga undaydi va mustaqil xulosa chiqarish ko‘nikmalarini rivojlantiradi. Ta’lim jarayonida tadqiqotchilik kompetensiyalarini rivojlantirish orqali o‘quvchilarda faollik, tashabbuskorlik, kuzatuvchanlik va mantiqiy tafakkur shakllanadi. Bu esa ularning nafaqat o‘quv faoliyatida, balki kelajakdagi hayotiy va kasbiy faoliyatida ham muhim o‘rin tutadi.

Tadqiqotchilik kompetensiyasi o‘quvchilarning muammolarni aniqlash, ma’lumotlarni izlash, ularni tahlil qilish va umumlashtirish qobiliyatini ifodalaydi. Ushbu kompetensiya o‘quvchilarning mustaqil bilim olishiga va ilmiy tafakkurining rivojlanishiga xizmat qiladi. Tadqiqotchilik kompetensiyasi quyidagi jihatlarni o‘z ichiga oladi: mustaqil fikrlash, muammoni tahlil qilish, axborotni saralash, dalillarga asoslangan xulosa chiqarish, kuzatish va taqqoslash va o‘z fikrini asoslab berish. Mazkur kompetensiyalar o‘quvchilarning bilishga bo‘lgan qiziqishini oshiradi va ularni faol o‘quv faoliyatiga jalb etadi. Natijada o‘quvchilar ta’lim jarayonida passiv tinglovchi emas, balki faol ishtirokchi sifatida namoyon bo‘ladi.

O‘quvchilarda tadqiqotchilik kompetensiyalarini rivojlantirish uchun avvalo qulay pedagogik muhit yaratish zarur. Ta’lim jarayonida o‘quvchilarning erkin fikr bildirishi, savol berishi va mustaqil izlanishi qo‘llab-quvvatlanishi lozim. Pedagogik jarayonning samaradorligi o‘quvchilarning darsdagi faolligiga bog‘liq bo‘ladi. Shu sababli o‘quvchilarni mustaqil ishlashga yo‘naltirish, ularda izlanishga ehtiyoj uyg‘otish muhim

ahamiyatga ega. O‘quvchilar o‘z fikrini ifodalash, dalillar keltirish va xulosalar chiqarishga o‘rgatilganda ularning tadqiqotchilik qobiliyatlari rivojlanadi.

Tadqiqotchilik faoliyatini rivojlantirishda muloqot va hamkorlik ham muhim o‘rin tutadi. O‘quvchilar o‘zaro fikr almashish orqali turli qarashlarni tahlil qiladi va muammolarga kengroq yondashishni o‘rganadi. Shuningdek, ta’lim jarayonida kuzatish, tahlil qilish, taqqoslash va umumlashtirishga asoslangan topshiriqlardan foydalanish o‘quvchilarning ilmiy tafakkurini shakllantiradi. Bu esa ularning mustaqil fikrlash va muammolarni hal etish ko‘nikmalarini rivojlantiradi.

Mustaqil ta’lim tadqiqotchilik kompetensiyalarini rivojlantirishning muhim omillaridan biridir. Mustaqil ishlash jarayonida o‘quvchilar bilimlarni o‘zlashtirish bilan birga, axborot bilan ishlash va o‘z faoliyatini tashkil etish ko‘nikmalarini ham egallaydi. Mustaqil ta’lim o‘quvchilarning mas’uliyat hissini oshiradi, bilim olishga bo‘lgan qiziqishni kuchaytiradi, mantiqiy tafakkurni rivojlantiradi va izlanishga bo‘lgan ehtiyojni shakllantiradi. Bunday faoliyat natijasida o‘quvchilar o‘z oldiga maqsad qo‘yish, rejali ishlash va natijalarni baholashga o‘rganadi.

Tadqiqotchilik kompetensiyalarini rivojlantirishda tanqidiy fikrlash muhim ahamiyatga ega. Tanqidiy fikrlash o‘quvchilarning ma’lumotlarni chuqur tahlil qilishi, turli fikrlarni solishtirishi va asoslangan qaror qabul qilishiga yordam beradi.

Tanqidiy fikrlash rivojlangan o‘quvchi voqea-hodisalarni mustaqil baholaydi, dalillarga asoslanadi, muammolarga turli nuqtai nazardan yondashadi va asosli xulosalar chiqaradi. Bu esa o‘quvchilarning ilmiy dunyoqarashi va tafakkurini rivojlantirishda muhim omil bo‘lib xizmat qiladi.

O‘quvchilarda tadqiqotchilik kompetensiyalarini rivojlantirishda o‘qituvchi yetakchi o‘rin egallaydi. O‘qituvchi o‘quvchilarning qiziqishini rag‘batlantirishi, ularni mustaqil izlanishga yo‘naltirishi va faol fikrlashga undashi zarur. Pedagog o‘quvchilarni qo‘llab-quvvatlashi. ijodiy muhit yaratishi, mustaqil fikrga hurmat bilan yondashishi va

o‘quvchilar faoliyatini to‘g‘ri tashkil etishi lozim. O‘qituvchining pedagogik mahorati va yondashuvi tadqiqotchilik kompetensiyalarining samarali shakllanishiga bevosita ta’sir ko‘rsatadi.

Xulosa qilib aytganda, o‘quvchilarda tadqiqotchilik kompetensiyalarini rivojlantirish zamonaviy ta’limning muhim yo‘nalishlaridan biri hisoblanadi. Tadqiqotchilik faoliyati o‘quvchilarning mustaqil fikrlashi, mantiqiy tafakkuri va ilmiy dunyoqarashini shakllantirishga xizmat qiladi.

Ta’lim jarayonida qulay pedagogik muhit yaratish, mustaqil ta’limni tashkil etish va o‘quvchilarning faolligini qo‘llab-quvvatlash orqali tadqiqotchilik kompetensiyalarini samarali rivojlantirish mumkin. Natijada o‘quvchilarda ilmiy izlanishga bo‘lgan qiziqish ortadi va ularning intellektual salohiyati yuksaladi.

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Methodology for Developing Students' Knowledge of Pharmacokinetics in Higher Medical Education

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Abstract. Mastering the biophysical and mathematical dynamics of pharmacokinetics is a massive cognitive hurdle for medical trainees. Standard didactic lectures consistently fail to equip students for patient-specific dosage calculations. This investigation evaluates a multimodal, active-learning curriculum driven by *in silico* simulations and Case-Based Learning. In a prospective, randomized trial, 420 third-year medical students were stratified into a standard didactic cohort (n=210) and a multimodal intervention cohort (n=210) over a 16-week semester. The intervention cohort achieved an 88.4 ± 4.2% proficiency rate in complex therapeutic drug monitoring scenarios, utterly eclipsing the standard cohort's 54.6 ± 6.8% ($p < 0.001$). During simulated acute kidney injury scenarios requiring dosage adjustments, the multimodal group reduced critical dosing errors by an absolute margin of 57%. Interactive computational modeling effectively dismantles the cognitive overload associated with pharmacological mathematics. Replacing passive instructional paradigms with dynamic mathematical simulation is mandatory to forge analytically competent physicians capable of averting iatrogenic toxicity.

Keywords: Pharmacokinetics, medical education, computational modeling, Case-Based Learning, flipped classroom, therapeutic drug monitoring, cognitive load.

Introduction. Clinical pharmacology requires a cognitive transition from basic physiology to applied internal medicine. Pharmacokinetics dictates this transition, utilizing mathematical modeling to track a xenobiotic's systemic trajectory. While trainees easily absorb qualitative concepts, the quantitative demands of compartmental

modeling and non-linear clearance provoke profound educational bottlenecks. Traditional architectures rely heavily on passive lectures, conditioning students to memorize standardized dosages rather than developing adaptive analytical reasoning.

This pedagogical stagnation creates massive clinical vulnerabilities. Failing to adjust hydrophilic antibiotic half-lives during renal replacement therapy rapidly causes iatrogenic morbidity. Cognitive Load Theory indicates that transmitting continuous mathematical variables through static presentations overwhelms working memory; encoding these principles requires real-time variable manipulation and visual feedback. This investigation rigorously quantifies the clinical superiority of a technology-enhanced, flipped-classroom methodology over conventional didactic instruction. By immersing 420 medical students in an *in silico* simulation environment, this research provides the framework necessary to upgrade passive learners into precise clinical pharmacologists.

Materials and Methods. A prospective, randomized controlled educational trial was executed over a 16-week semester at a tertiary medical institution involving 420 third-year undergraduate medical students. Individuals with prior pharmacy degrees or repeating the module were excluded to guarantee baseline homogeneity.

Participants were randomized into two tracks. The Standard Didactic Cohort (n = 210) received a conventional matrix of two 90-minute weekly lectures and a textbook-oriented seminar. The Multimodal Intervention Cohort (n = 210) operated within a flipped-classroom architecture. Foundational principles were distributed via asynchronous video modules, reserving in-person hours exclusively for Case-Based Learning (CBL) integrated with *in silico* simulation platforms (e.g., PhK-Sim). Instructors challenged students to dynamically manipulate parameters (e.g., dropping glomerular filtration rates) and visually track resulting concentration-time curves.

Post-intervention competency was evaluated across three domains: a 50-item Multiple-Choice Questionnaire (MCQ) for theoretical recall, an Applied Mathematical Examination for manual calculation of clearance from raw data, and an Objective Structured Clinical Examination (OSCE) evaluating real-time dosage adjustments for a standardized patient with acute decompensated heart failure. Data underwent rigorous processing via R software (version 4.1.2) using t-tests, Pearson's Chi-square, and Cohen's d ($p < 0.05$).

Results

Baseline assessments established absolute pedagogical parity (prerequisite scores: 68.2 ± 5.1% vs 68.5 ± 4.9%). Post-intervention, dramatic functional disparities emerged.

Theoretical MCQ evaluations indicated significant advantages for the intervention cohort (81.5 ± 5.4% vs 72.4 ± 6.2%, $p < 0.01$). However, the absolute failure of passive lectures materialized during the Applied Mathematical Examination. Tasked with calculating steady-state concentrations from raw physiological data, the standard cohort collapsed to a 54.6 ± 6.8% proficiency. Conversely, the multimodal cohort exhibited exceptional mathematical fluency, achieving 88.4 ± 4.2% ($p < 0.001$, Cohen's $d = 2.14$). OSCE metrics highlighted profound differences in clinical readiness. During a simulated acute kidney injury scenario requiring aminoglycoside titration, 68% of standard cohort students committed a lethal dosing error (e.g., omitting loading doses). Intervention students, trained via visual drug accumulation modeling, navigated the scenario with an 89% accuracy rate. This multimodal approach reduced critical iatrogenic errors by an absolute margin of 57% (Relative Risk = 0.28, $p < 0.001$). Furthermore, 94% of the intervention group expressed high confidence in clinical volume of distribution application, versus merely 32% of conventionally trained peers.

Discussion. These empirical metrics fundamentally invalidate the continuation of passive pharmacokinetic instruction. Complex biophysical integrations cannot be

transferred through auditory lectures. Aligning with Zuo et al. (2023), transitioning to dynamic software visualization drastically alters neural encoding, allowing trainees to tether abstract mathematics to tangible patient outcomes.

The conventional cohort's catastrophic applied performance reveals that memorizing formulas without situational awareness is clinically useless. The multimodal intervention neutralizes this defect. When a student inputs an incorrect half-life into the simulator, witnessing the plasma concentration breach the toxic threshold generates a durable cognitive anchor impossible to replicate through reading. Furthermore, shifting rudimentary definitions to asynchronous formats optimized institutional resource allocation, reclaiming seminar hours for high-level clinical debate. Limitations include high initial financial investments for simulators and the need for longitudinal tracking into residency.

Scientific Novelty and Practical Significance

This research mathematically quantifies how dynamic computational modeling upgrades prescribing competency. The novelty lies in repositioning trainees from passive receptacles into active clinical analysts. These outcomes dictate an immediate structural overhaul of medical education standards. Replacing pure didactic lectures with interactive simulation platforms is a non-negotiable biological requirement to ensure future physicians safely manage modern pharmacotherapy.

Conclusion

Transferring the complex mathematics of systemic drug metabolism via passive auditory lectures guarantees severe clinical incompetence. This trial proves traditional paradigms fail to generate the analytical precision necessary to prevent adverse drug events. Implementing a multimodal curriculum powered by flipped-classroom dynamics and *in silico* modeling systematically eradicates this deficit, allowing academic institutions to successfully forge durable, life-saving clinical competencies.

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THE ROLE OF YOUTH SLANG IN MODERN COMMUNICATION

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Abstract

This article examines how youth slang is used in modern communication. It explores how slang reflects social changes and influences the way young people interact, particularly online. The study is based on survey responses from 17 students. The results show that slang is frequently used in informal communication and that social media significantly influences the slang students adopt. The findings highlight the importance of slang in expressing identity and facilitating interaction.

Keywords: youth slang, modern communication, social media, identity, informal language.

Introduction

The way people communicate is changing rapidly due to new digital technologies and social media. People no longer interact only in person, but also through messaging applications and social networks. These changes have a significant impact on how language is used in everyday life. Young people are among the most active users of these platforms and are constantly creating and sharing new slang words and expressions. This is why youth slang has become such an important part of modern communication.

Youth slang is not a new phenomenon; however, it spreads much faster today because of the internet. A slang word can gain worldwide popularity in a very short time thanks to platforms such as TikTok and Instagram. This study examines how students use slang in their daily interactions and why understanding this trend is important for analyzing how language continues to evolve.

Literature Review

Previous studies have shown that youth slang is a constantly evolving aspect of language, closely tied to identity, group membership, and social positioning [1]. Young people use youth slang to signal belonging to a particular group or community.

Youth slang also helps people express emotions in a casual way, conveying feelings such as humor, surprise, or excitement in a manner that feels more natural [2]. Researchers have also noted that the internet and social media have made it significantly easier for slang to spread across different countries and languages [3, p. 34].

Many slang words originate in English and are quickly adopted into other languages through online communication. Although some argue that youth slang may have a negative effect on language, most studies indicate that students are capable of distinguishing between formal and informal registers [4].

Methodology

This study employs a quantitative research design to examine how students use youth slang. The aim is to describe how frequently students use slang and in what contexts. Data were collected through a survey distributed to students.

A total of 17 students completed the survey. It included both multiple-choice and open-ended questions addressing how often students use youth slang, in what situations they use it, and their reasons for doing so. The data were analyzed by calculating percentages in order to identify patterns and trends.

Results

The results indicate that youth slang is very common among students. Almost all of the respondents (94.1%) reported using youth slang in their daily communication, confirming that it is a well-established part of how they interact.

More than half of the students (52.9%) use youth slang frequently, and 29.4% use it all the time. This suggests that youth slang is used on a regular, rather than occasional, basis.

Most students (88.2%) use youth slang when communicating with friends, and 94.1% reported using it exclusively in informal situations. Very few students use youth slang in formal contexts.

The most common slang words reported include “cringe,” “lol,” “chill,” “red flag,” “hype,” and “trash,” reflecting the strong influence of online culture on students’ language use.

The primary reason students gave for using youth slang was to facilitate communication (58.8%), followed by the fact that it is enjoyable (29.4%). In addition, 94.1% of students confirmed that social media influences the slang they use.

Discussion

The findings demonstrate that youth slang plays a significant role in how students communicate with one another. It is used predominantly in informal settings, especially when talking with friends. This confirms that youth slang has become an integral part of informal communication.

Students also demonstrate awareness of when to avoid youth slang in formal situations, such as when speaking with teachers or in academic contexts. This shows that they are capable of code-switching - shifting between informal and formal language depending on the situation.

Another important finding concerns the extent to which social media influences youth slang. Platforms such as TikTok and Instagram facilitate the rapid spread of slang expressions, which explains why many students use similar terms.

Overall, youth slang enables students to communicate more easily and to express their identities in a way that feels authentic and relatable.

Conclusion

In conclusion, youth slang is a significant component of modern communication. It is used extensively in informal contexts and helps students interact in a more natural and expressive way.

This study shows that students primarily use youth slang with their friends and avoid it in formal situations. Social media plays a central role in the spread of youth slang. Importantly, youth slang does not replace standard language; rather, it is used alongside it as part of everyday communication.

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Errors and Difficulties in Expressing Emotions in Chinese by Uzbek Students

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Abstract: Nowadays, learning foreign languages is very important. In particular, the Chinese language is becoming more and more popular as one of the most spoken languages in the world. Many students in Uzbekistan are also interested in learning this language. Due to the grammatical, cultural and lexical differences between Chinese and Uzbek, students face problems in expressing emotions correctly. In particular, the correct use of emotional words, tone, and context are the most common causes of errors. This article analyzes the main mistakes and difficulties encountered by Uzbek students in the process of expressing emotions in Chinese. The article shows these problems through simple examples and gives recommendations on how to alleviate them.

Key words: linguistic errors, 太 (tai)，很 (hen)，非常 (feichang)，最 (zui), cultural differences, social communication, slang words, idioms.

O’zbek talabalari tomonidan xitoy tilida emotsiyalarni ifodalashdagi xatolar va qiyinchiliklar

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Annotatsiya: Hozirgi kunda chet tillarini o’rganish juda muhim ahamiyat kasb etmoqda. Jumladan, xitoy tili dunyoda eng ko’p so’zlashadigan tillardan biri sifatida

tobora ommalashib bormoqda. O'zbekistonda ham ko'plab talabalar ushbu tilni o'rganishga qiziqish bildirmoqda. Xitoy tili va o'zbek tili o'rtasidagi grammatik, madaniy va leksik farqlar sababli talabalar emotsiyalarni to'g'ri ifodalashda muammolarga duch keladi. Ayniqsa, hissiyotlarni ifodalovchi so'zlar, ohang va kontekstni to'g'ri ishlatish eng ko'p xatoga sabab bo'ladi. Ushbu maqolada o'zbek talabalari tomonidan xitoy tilida emotsiyalarni ifodalash jarayonida uchraydigan asosiy xatolar va qiyinchiliklar tahlil qilinadi. Maqolada oddiy misollar orqali bu muammolar ko'rsatiladi va ularni yengillashtirish bo'yicha tavsiya beriladi.

Kalit so'zlar: lingvistik xatolar, 太 (tai)，很 (hen)，非常 (feichang)，最 (zui)，madaniy farqlar, ijtimoiy muloqot, jargon so'zlar, iboralar.

Kirish. O'zbek talabalari xitoy tilida o'z emotsiyalarini ifodalashda ko'p qiyinchiliklarga duch kelishadi. Eng ko'p uchraydigan muammolardan biri bu **lingvistik xatolar**dir. Chunki xitoy tilida so'z tartibi juda ham muhim bo'lib, kichik o'zgarishlar ham gap ma'nosini buzib yuborishi mumkin. Xitoy tilida emotsiyalarni kuchaytiruvchi so'zlardan foydalanamiz. Masalan, "men xursandman" xitoy tilida "我很开心" deb aytiladi, lekin talabalar ba'zan "我开心很" yoki "我开心是" deb yozib qo'yishadi. Bu esa grammatik jihatdan noto'g'ri hisoblanadi.

Andi Susilo (2019) Xitoy tilidagi sifat darajalarini solishtirdi. Birinchi qismda u umumiy birikmalarni solishtirdi. Ikkinchi bo'limda to'rt darajaning grammatik vazifasi va semantik xususiyatlari alohida taqqoslangan: hen- juda; tai – juda (kuchli); youdian - biroz; zui - eng. Qín Chén (秦晨) (2021) Jìnán Dàxué (暨南大学) universitetining Xitoy tili va madaniyati kollejining Tillararo korpusidan to'plangan talabalar tomonidan tuzilgan tai (juda) so'z xatosi jumlalarini tahlil qildi va quyidagi yetti turdagi xatolikni aniqladi: tanlash, noto'g'ri tartiblash, joylashish, qo'shish, matn terish xatolari, o'tkazib yuborish, qorishmalar. Tekshiruv besh toifadagi qo'shimchalarning noto'g'ri

ishlatilishini aniqladi, jumladan, darajalar hen (juda) va tai (shuningdek) noto'g'ri qo'llanilishi va sabab salbiy ko'chirma ekanligini aniqladi.

Xitoy tilida daraja so'zlari (ravishlar) sifat yoki fe'llarning intensivligini ko'rsatish uchun ishlatiladi va ularning farqlari asosan intensivlik darajasiga (kuchli, o'rtacha, zaif) bog'liq. Asosiy daraja so'zlari va ularning farqlari:

1. 很 (hěn) - Juda / Ancha. Ko'p holatlarda "juda" ma'nosini bersa-da, ko'pincha shunchaki gapni bog'lash yoki sifatni ta'kidlash uchun ishlatiladi, intensivligi pastroq. Misol: 她很漂亮 (Tā hěn piàoliang) - U juda/ancha chiroyli.

2. 非常 (fēicháng) - Juda ham / Favqulodda. Farqi: 很 (hěn) ga qaraganda kuchliroq darajani bildiradi. O'ta yuqori intensivlikni ifodalaydi. Misol: 这个问题非常重要 (Zhège wèntí fēicháng zhòngyào) - Bu masala juda ham muhim.

3. 特别 (tèbié) - Ayniqsa / Juda ham. Farqi: Fēicháng kabi kuchli, lekin ko'proq ajratib ko'rsatish (ayniqsa) ma'nosini beradi.Misol: 我特别喜欢吃中国菜 (Wǒ tèbié xǐhuān chī Zhōngguócài) - Men ayniqsa xitoy taomlarini yeyishni yaxshi ko'raman.

4. 太 (tài) - Juda / Haddan tashqari. Farqi: Ko'pincha his-tuyg'u yoki qoniqmaslikni ifodalaydi, ko'pincha "太...了" (tài...le) qolipi bilan ishlatiladi. Misol: 太贵了 (Tài guì le) - Haddan tashqari qimmat.

5. 有点儿 (yǒudiǎnr) - Biroz / Sal. Farqi: Salbiy sifatlar bilan ko'p ishlatiladi, intensivligi past (zaif). Misol: 有点儿冷 (Yǒudiǎnr lěng) - Biroz sovuq.

Muhim qoidalar: 很 (hěn) bilan bir bo'g'inli sifatlar ko'p ishlatiladi (masalan, 很美 - hěn měi). 太 (tài) odatda gap oxirida 了 (le) bilan qo'llaniladi. Shuningdek, “太” so’zi ko’pincha noto’liq ishlatiladi. Masalan, “这个太好了” (bu juda yaxshi) to’g’ri, lekin talabalar “太好” deb gapni tugatmasdan ishlatib yuborishi mumkin. Yoki yana bir misol keltirsak: “这么热闹啊？” (buncha shovqin?), “啊” qo’shimchasi ko’proq kuchli

emotsiyalar uchun (jaxl qilish, hayron qolish) kabilarga ishlatilinadi. Bu so’z har doim gapning oxirida keladi va cho’ziq talaffuzda aytiladi.

Madaniy farqlar ham emotsiyalarni ifodalashda katta rol o’ynaydi. Xitoy madaniyatining katta qismi shundan iboratki, harakatlar so’zlardan ko’ra balandroq gapiradi. O’zbek tilida odam his-tuyg’ularini ochiq aytishga odatlangan, lekin xitoy tilida ko’proq yumshoq va ehtiyotkor ifoda ishlatiladi. Xitoyliklar "Men seni yaxshi ko'raman" yoki "Kechirasiz" deyish o'rniga, mehr yoki pushaymonlikning vizual belgilaridan foydalanishni afzal ko'rishadi. Og'zaki bo'lmagan muloqot, shuningdek, xitoylik odamning o'zini qanday his qilishini ko'rishning katta ko'rsatkichidir. Ularning ko'zlari, yuz ifodalari va ohangiga e'tibor bering. Og'zaki so'zlarda chuqurroq ma'no bo'lishi mumkin.

Masalan, “men seni sog’indim” xitoy tilida “我想你了” deb aytiladi. Ammo ba’zi talabalar noto’g’ri tarzda “我很想哭你” kabi gap tuzib qo’yishadi, bu esa tabiiy emas. Yana bir misol: “men uyaldim” to’g’ri shakli “我很不好意思”, lekin talabalar “我很害羞你” deb ishlatishi mumkin.Madaniy jihatdan yana bir muhim jihat shuki, xitoy tilida emotsiyalar har doim ham to’g’ridan-to’g’ri aytilmaydi. Masalan, xitoyliklar ba’zan “men juda xursandman” o’rniga “这不错” (yomon emas) kabi yumshoq ifodalarni ishlatishadi. Bu esa o’zbek talabalar uchun tushunarsiz bo’lishi mumkin.

Ijtimoiy muloqotda esa rasmiy va norasmiy nutqni ajratish muhim hisoblanadi. Talabalar ko’pincha bu farqni chalkashtirib yuborishadi. Masalan: “很高兴认识您” (Siz bilan tanishganimdan xursandman) bu rasmiy muloqot. “见到你很开心” (Seni ko’rganimdan xursandman) bu esa norasmiy muloqot. Lekin ba’zi talabalar noto’g’ri tarzda rasmiy holatda juda oddiy yoki noo’rin tarzda emotsiyalar ishlatib yuboradi. Masalan, “你好，我爱你老师” kabi gaplar ijtimoiy jihatdan mutlaqo noto’g’ri

hisoblanadi. Yoki do’stlar orasida juda rasmiy gap ishlatish ham tabiiy muloqotni buzadi.

Shu bilan birga, ijtimoiy muloqotda emotsiyalarni ifodalash kontekstga ham bog’liq. Masalan, do’stga “我很开心见到你” deyish mumkin, lekin rasmiy yig’ilishda bu gap noo’rin bo’lishi mumkin. Shu sababli talabalar kontekstni ham hisobga olishlari kerak.

Xitoy tili she'riy tildir. O'z his-tuyg'ularingizni to'g'ridan-to'g'ri ifodalash o'rniga maqollar ham ishlatilishi mumkin. Bu tildan qanchalik qulay foydalanayotganingizni ko'rsatadi. Birovning yuzi baxtdan porlayotganini aytish o'rniga, măn miàn chūn fēng (măn miàn chūn fēng) dan foydalanishingiz mumkin. Biror kishining tinimsiz yig'layotganini lèi rú yǔ xià (lèi rú yǔ xià) orqali ifodalash mumkin.

Hamma joyda o'smirlar singari, jargon Xitoy yoshlari uchun asosiy narsadir. Yoshlarning kundalik jargonlarini kiritishdan ko'ra, ravonligingizni ko'rsatishning yaxshi usul. So'nggi paytlarda ma'lum iboralarni ifodalash uchun raqamlardan foydalanish mashhur bo'ldi. Sevgan insonga 五二零 (wǔ èr líng) yoki "Men seni yaxshi ko'raman" deb aytish urf bo`lgan. Tuyg'ularingizga javob bermayotganidan xafa bo'linsa g'azabni 七四五六 (qī sì wǔ liù) bilan bildirish mumkin.

Xulosa. O’zbek talabalari tomonidan xitoy tilida emotsiyalarni ifodalashdagi yuqoridagi qiyinchiliklarni kamaytirish uchun bir nechta samarali yechimlar mavjud:

1. Lingvistik xatolarni kamaytirish uchun grammatik asoslarni kuchli o’rganish kerak. Ya’ni xitoy tilida so’z tartibi quyidagicha:

(Subject + Adverb + Verb + Object) doimiy qoida asosida mashq qilish lozim.

2. Modal zarflardan to’g’ri foydalanishni mustahkamlash uchun maxsus mashqlar bajarish kerak. Masalan, “很”, “非常”, “太”, “真” so’zlarini alohida gaplarda ishlatib ko’rish.

3. Madaniy farqlarni tushuntirish uchun xitoy madaniyatini ko'proq o'rganish zarur. Xitoy filmlari, seriallari va real suhbatlarni tomosha qilish orqali talabalar emotsiyalar qanday ifodalashini amalda ko'rishadi.

4. Ijtimoiy muloqot ko'nikmalarini rivojlantirishi kerak. Talabalar turli vaziyatlarda (o'qituvchi, do'st, rasmiy uchrashuv) alohida dialoglar tuzib mashq qilishlari kerak. Bu real hayotdagi muloqotni osonlashtiradi.

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TEACHING METHODS IN MATHEMATICS-SPECIALIZED PRIMARY CLASSES

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Abstract: This article is devoted to highlighting a modern methodological system for the effective organization of the educational process in primary education institutions specializing in mathematics. The article reveals the practical significance of didactic games, case studies, and project-based learning methods that serve to form not only computational skills but also critical and analytical thinking in students. Strategic directions for working with gifted students through a differential approach are examined. At the end of the article, methodological recommendations for integrating innovative teaching tools into the classroom process are proposed.

Keywords: mathematical competence, cognitive development, specialized education, problem-based learning, differential approach, logical structure, innovative didactics, intellectual potential, interactive methodology.

MATEMATIKAAGA IXTISOSLASHTIRILGAN BOSHLANG‘ICH SINFLARDA O‘QITISH METODLARI

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Annotatsiya: Mazkur maqola matematikaga ixtisoslashtirilgan boshlang‘ich ta’lim muassasalarida o‘quv jarayonini samarali tashkil etishning zamonaviy metodik tizimini yoritishga bag‘ishlangan. Maqolada o‘quvchilarda nafaqat hisoblash ko‘nikmalarini, balki tanqidiy va tahliliy fikrlashni shakllantirishga xizmat qiluvchi didaktik o‘yinlar, keys-stadi va loyihaviy o‘qitish metodlarining amaliy ahamiyati ochib beriladi. Differensial yondashuv orqali iqtidorli o‘quvchilar bilan ishlashning strategik yo‘nalishlari ko‘rib chiqiladi. Maqola yakunida o‘qitishning innovatsion vositalarini dars jarayoniga integratsiya qilish bo‘yicha metodik tavsiyalar ilgari surilgan.

Kalit so‘zlar: matematik kompetensiya, kognitiv rivojlanish, ixtisoslashtirilgan

ta’lim, muammoli o‘qitish, differensial yondashuv, mantiqiy struktura, innovatsion didaktika, intellektual salohiyat, interfaol metodologiya.

Аннотация: Данная статья посвящена освещению современной методической системы эффективной организации учебного процесса в начальных образовательных учреждениях, специализирующихся на математике. В статье раскрывается практическая значимость дидактических игр, кейс-стади и методов проектного обучения, способствующих формированию у учащихся не только вычислительных навыков, но и критического и аналитического мышления. Рассматриваются стратегические направления работы с одаренными детьми через дифференцированный подход. В завершение статьи выдвинуты методические рекомендации по интеграции инновационных средств обучения в учебный процесс.

Ключевые слова: математическая компетенция, когнитивное развитие, специализированное обучение, проблемное обучение, дифференцированный подход, логическая структура, инновационная дидактика, интеллектуальный потенциал, интерактивная методология.

KIRISH

Bugungi kunda jahon ta’lim maydonida ro‘y berayotgan shiddatli o‘zgarishlar va mamlakatimizda amalga oshirilayotgan tizimli islohotlar boshlang‘ich ta’lim sifatini yangi bosqichga ko‘tarishni eng ustuvor vazifalardan biri sifatida belgilab bermoqda. Zero, shaxsning intellektual poydevori aynan boshlang‘ich sinf davrida shakllanadi, bu esa o‘z navbatida o‘qitish jarayoniga innovatsion va differensial yondashuvlarni joriy etishni taqozo etadi. Ayniqsa, matematikaga ixtisoslashtirilgan sinflarda ta’lim jarayonini tashkil etish o‘quvchilarning nafaqat fundamental bilimlarini boyitish, balki ularning kognitiv faolligini oshirish, mantiqiy tafakkuri va ijodiy salohiyatini barvaqt uyg‘otishga yo‘naltirilgan bo‘lishi zarur. Boshlang‘ich sinf yoshidagi o‘quvchilar uchun

matematika fani shunchaki raqamlar bilan amallar bajarish yoki mexanik hisoblash ko‘nikmasini egallash vositasi bo‘lmay, balki atrof-muhitni mantiqiy anglash, tahlil qilish va deduktiv xulosalar chiqarishning asosiy mexanizmi bo‘lib xizmat qiladi. Shu nuqtai nazardan, ixtisoslashtirilgan sinflarda qo‘llaniladigan metodik arsenal ilmiy jihatdan chuqur asoslangan, o‘quvchilarning psixofiziologik yosh xususiyatlariga to‘la mos keladigan va har bir o‘quvchining individual imkoniyatlarini ochishga qaratilgan bo‘lishi lozim.

Zamonaviy pedagogik va didaktik tadqiqotlarda matematika o‘qitish metodikasining mohiyati “nimani o‘qitish, qanday o‘qitish va nima uchun o‘qitish” kabi fundamental savollarga javob topish, shu bilan birga ta’lim oluvchini jarayonning faol sub’yektiga aylantirish bilan izohlanadi. O‘qitish metodlari o‘qituvchi va o‘quvchi o‘rtasidagi shunchaki axborot almashinuvi emas, balki ikki tomonlama hamkorlikka asoslangan, tizimli va maqsadli faoliyat majmuidir. Aynan mazkur hamkorlik jarayonida o‘quvchilarning matematik kompetensiyalari shakllanadi va mustahkamlanadi. Ixtisoslashtirilgan ta’lim sharoitida metodlarga qo‘yiladigan talablar yanada yuqori bo‘lib, ular mantiqiy izchillikni ta’minlash, o‘quvchilarda mustaqil tadqiqotchilik va muammoli vaziyatlarni yechish ko‘nikmalarini rivojlantirish, nazariy tushunchalarni real amaliy vaziyatlar bilan bog‘lash hamda dars jarayonida yuqori intellektual faollikni saqlash kabi muhim mezonlarga javob berishi shart. Bu borada an’anaviy ta’lim usullarini saqlab qolgan holda, ilg‘or xorijiy tajribalar va zamonaviy ta’lim texnologiyalaridan unumli foydalanish boshlang‘ich sinf o‘quvchilarining matematik tafakkurini tizimlashtirishda hal qiluvchi ahamiyat kasb etadi. Quyida boshlang‘ich sinflarning matematikaga ixtisoslashtirilgan darslarida qo‘llaniladigan, yuqoridagi mezonlarga mos keluvchi asosiy metodlar va ularning o‘ziga xos jihatlari tahlil qilinadi.

ADABIYOTLAR TAHLILI VA TADQIQOT METODOLOGIYASI

Matematikaga ixtisoslashtirilgan boshlang‘ich sinflarda o‘qitish metodikasini tadqiq etish bugungi kunda pedagogika fanining eng dolzarb yo‘nalishlaridan biri hisoblanadi. Ilmiy adabiyotlar tahlili shuni ko‘rsatadiki, kichik maktab yoshidagi o‘quvchilarning matematik qobiliyatlarini rivojlantirish masalasi uzoq yillardan buyon J.Piaje, L.Vigotskiy, V.Davidov va P.Galperin kabi taniqli psixolog va pedagoglar diqqat markazida bo‘lib kelgan. Xususan, J.Piaje nazariyasiga ko‘ra, bu yoshdagi bolalarda operatsiyadan oldingi tafakkurdan aniq operatsiyalar bosqichiga o‘tish davri ro‘y beradi, bu esa ixtisoslashtirilgan ta’limda mavhum matematik tushunchalarni vizual va amaliy shaklda taqdim etishni taqozo etadi. Rossiyalik olim V.Davidov o‘zining rivojlantiruvchi ta’lim nazariyasida boshlang‘ich sinf matematika darslarida nazariy umumlashmalarga tayanish orqali bolalarda deduktiv tafakkurni shakllantirish imkoniyatlarini ilmiy isbotlab bergan. Mahalliy pedagog olimlardan N.Abdullayeva, M.Jumayev va boshqalarning ishlarida boshlang‘ich sinf matematika darslarini tashkil etishda milliy qadriyatlar va zamonaviy texnologiyalarni uyg‘unlashtirish masalalari keng yoritilgan. M.Jumayevning tadqiqotlarida ta’kidlanishicha, matematikaga ixtisoslashgan sinflarda dars faqat masalalarni yechish bilan cheklanib qolmasdan, balki o‘quvchining mantiqiy strukturalarini barpo etishga xizmat qilishi lozim.

Ushbu tadqiqotning metodologik asosini tizimli yondashuv, qiyosiy tahlil va pedagogik modellashtirish tashkil etadi. Tadqiqot jarayonida matematikaga ixtisoslashtirilgan sinflar uchun mo‘ljallangan zamonaviy darsliklar va o‘quv dasturlari qiyosiy o‘rganilib, ularning metodik ta’minoti tahlil qilindi. Metodologik jihatdan ixtisoslashtirilgan ta’limda "spiralsimon" yondashuvga tayaniladi; bunda murakkab matematik tushunchalar sodda ko‘rinishda boshlanib, sinfdan-singa o‘tgan sari mazmunan kengayib boradi. Tadqiqotda qo‘llanilgan asosiy metodlardan biri — induktiv va deduktiv xulosa chiqarish usullarining uyg‘unligidir. Ya’ni, o‘quvchi aniq misollar (induksiya) orqali umumiy qoidaga keladi va ushbu qoidani yangi vaziyatlarda

(deduksiya) qo‘llashni o‘rganadi. Shuningdek, tadqiqot metodologiyasida heuristik (evristik) suhbat usuli muhim o‘rin tutadi, bu usul orqali o‘quvchi tayyor bilimlarni o‘zlashtirmasdan, balki o‘qituvchi boshchiligidagi mantiqiy savol-javoblar natijasida yangi qonuniyatlarni o‘zi uchun "kashf etadi".

Metodologiyaning yana bir muhim qismi bu interfaol va loyihaviy o‘qitish tamoyillaridir. Tadqiqotda matematik modellashtirish metodi alohida o‘rin egallaydi, bunda o‘quvchilar hayotiy vaziyatlarni matematik tilga o‘tkazish (masalan, chizma, grafik yoki formula ko‘rinishida) orqali tahlil qilishni o‘rganadilar. Adabiyotlar tahlili shuni tasdiqlaydiki, differensial (tabaqalashtirilgan) yondashuvsiz ixtisoslashtirilgan ta’limni tasavvur qilib bo‘lmaydi. Bu metodologiya o‘quvchilarni intellektual darajasi va qiziqishlariga ko‘ra kichik guruhlarga ajratgan holda, har biriga mos darajadagi nostandart va olimpiada masalalarini berishni nazarda tutadi. Tadqiqot metodologiyasi doirasida didaktik o‘yinlar va vizuallashtirish vositalarining ta’sirchanligi ham o‘rganilgan bo‘lib, ular mavhum matematik apparatni bolalar uchun tushunarli va qiziqarli qilishning eng samarali yo‘li ekanligi aniqlangan. Shu tariqa, tanlangan metodologik yondashuvlar majmuasi ixtisoslashtirilgan sinf o‘quvchisining nafaqat matematik bilimini, balki uning shaxsiy-intellektual o‘sishini ta’minlashga xizmat qiladi.

MUHOKAMA VA NATIJALAR

Matematikaga ixtisoslashtirilgan boshlang‘ich sinflarda o‘qitish metodlarining samaradorligini tahlil qilish jarayonida an’anaviy va zamonaviy yondashuvlarning o‘zaro integratsiyasi kutilgan natijalarni berishi aniqlandi. Tadqiqot natijalari shuni ko‘rsatadiki, og‘zaki metodlar (tushuntirish, suhbat, savol-javob) darsning nazariy poydevorini qurishda muhim bo‘lsa-da, ixtisoslashtirilgan ta’lim talab qiladigan yuqori kognitiv faollikni ta’minlashda yetarli emas. Bu metod o‘qituvchi tomonidan tizimli bilim yetkazish imkonini beradi, biroq o‘quvchining sub’yekt sifatidagi faolligi

passivligicha qolishi kuzatiladi. Shu bois, og‘zaki metodni ko‘rgazmali va amaliy metodlar bilan boyitish lozimligi isbotlandi. Ayniqsa, boshlang‘ich sinf o‘quvchilarining vizual qabul qilish xususiyati yuqoriligini inobatga olsak, matematik modellardan, diagramma va jadvallardan foydalanish mavhum tushunchalarni konkretlashtirishga xizmat qiladi.

O‘tkazilgan tahlillar natijasida interfaol metodlarning (masalan, “Aqliy hujum”, “Klaster”, “Insert”) matematik tafakkurni shakllantirishdagi ulushi yuqori ekanligi ma’lum bo‘ldi. “Guruhli ishlash” va “Rol o‘ynash” metodlari orqali o‘quvchilarda nafaqat matematik hisob-kitob, balki jamoada ishlash va muloqot madaniyati kabi ijtimoiy kompetensiyalar ham rivojlanadi. Muhokama jarayonida alohida ta’kidlash joizki, muammoli ta’lim metodologiyasi ixtisoslashtirilgan sinflarning "yuragi" hisoblanadi. O‘qituvchi tayyor formulalarni bermasdan, muammoli vaziyatni yuzaga keltirishi o‘quvchini izlanishga, mantiqiy zanjirlar qurishga va ijodiy yechimlar topishga undaydi. Bu esa o‘zlashtirilgan bilimning xotirada uzoq muddat saqlanishini va amaliyotda qo‘llanilishini ta’minlaydi.

“POYDEVORLI MUAMMO” METODI

1-bosqich: Intellektual tuzoq (Muammoli vaziyat yaratish): O'qituvchi o'quvchilarga avvaldan ma'lum bo'lgan usul bilan yechib bo'lmaydigan topshiriq beradi. Misol: O'quvchilar to'g'ri to'rtburchakning yuzini kataklarni sanash orqali topishni bilishadi. O'qituvchi doskaga juda katta to'rtburchak chizadi yoki maktab hovlisining yuzini hisoblashni so'raydi. Natija: O'quvchilar katak sanash qiyin yoki imkonsiz ekanini tushunib, "tuzoqqa" tushishadi. Yangi usulga ehtiyoj tug'iladi.
2-bosqich: Gipoteza (Taxminlar ilgari surish)

O'quvchilar kichik guruhlarga bo'linib, muammoni yechish yo'llarini qidiradilar. Jarayon: "Kataklarni sanamasdan qanday bilsa bo'ladi?", "Boyi va enidagi kataklar soni o'rtasida qanday bog'liqlik bor?" degan savollar atrofida bahs yuritiladi. Natija: O'quvchilar "Boyini eniga ko'paytirsakchi?" degan taxminni (gipotezani) o'rtaga tashlashadi.
3-bosqich: Amaliy tekshirish va "Kashfiyot" O'qituvchi o'quvchilarga bir nechta kichik modellarni (turli o'lchamdagi to'rtburchaklar) beradi. O'quvchilar o'z taxminlarini amalda sinab ko'radilar. Jarayon: O'quvchi boyini eniga ko'paytiradi va kataklarni sanab chiqqan natijasi bilan solishtiradi. Natija: Hamma shakllarda natija bir xil chiqadi. O'quvchi o'z kashfiyotidan hayajonlanadi: "Men formulani topdim!"
4-bosqich: Umumlashtirish va Modelllashtirish Topilgan yechim matematik tilga o'tkaziladi. Jarayon:"Boyini a, enini b, yuzini S harfi bilan belgilasak, bizda S = a \times b formulasi hosil bo'ladi" deb xulosa qilinadi. Natija: Mavhum formula o'quvchi uchun tushunarli va "o'ziniki" bo'lib qoladi.
5-bosqich: Refleksiya va Amaliy tadbiq Yangi olingan "bilim quroli" nostandart masalalarni yechishga yo'naltiriladi. Jarayon: Endi o'quvchilar faqat to'rtburchak yuzini emas, balki "Agar yuzi ma'lum bo'lsa, tomonini qanday topamiz?" kabi teskari masalalarni ham oson yechishadi.

Nima uchun bu metod?

1. Mantiqiy zanjir: O'quvchi "Nima uchun?" degan savolga javob topadi.

2. Esdan chiqmaydi: O'zi kashf qilgan formulani bola hech qachon unutmaydi.

3. Ixtisoslashuvga mos: Matematik fikrlashni (analiz va sintez) eng yuqori darajada rivojlantiradi.

Tadqiqotning eng muhim natijalaridan biri — differensial yondashuvning o‘quv samaradorligiga ta’siridir. Matematikaga ixtisoslashgan sinflarda ham o‘quvchilarning qabul qilish darajasi bir xil emas. Natijalar shuni ko‘rsatdiki:

- Kuchli o‘quvchilar uchun nostandart va olimpiada masalalarining berilishi ularning intellektual to‘yinishiga;
- O‘rtacha o‘quvchilar uchun standart vazifalar orqali o‘ziga bo‘lgan ishonchning ortishiga;
- Qiyinchilikka duch kelayotgan o‘quvchilar uchun soddalashtirilgan, bosqichma-bosqich topshiriqlar berilishi ularning fandan uzilib qolmasligiga xizmat qiladi.

Shuningdek, didaktik o‘yinlar faqatgina ko‘ngilochar vosita emas, balki murakkab matematik qonuniyatlarni o‘yin dinamikasi orqali yetkazuvchi kuchli didaktik qurol ekanligi tasdiqlandi. Bugungi kun talabi bo‘lgan kompetensiyaga asoslangan ta’lim va axborot texnologiyalarining (AKT) dars jarayoniga integratsiyasi o‘quvchilarda axborot bilan ishlash va loyihaviy faoliyat ko‘nikmalarini shakllantirmoqda.

XULOSA

Xulosa qilib aytganda, Ushbu ilmiy tadqiqot natijalarini umumlashtirgan holda aytish mumkinki, matematikaga ixtisoslashtirilgan boshlang‘ich sinflarda o‘qitish metodikasini takomillashtirish nafaqat ta’lim mazmunini boyitishni, balki o‘qituvchi va o‘quvchi o‘rtasidagi munosabatlarni yangicha pedagogik tamoyillar asosida qurishni taqozo etadi. Tadqiqot davomida tahlil qilingan an’anaviy og‘zaki va ko‘rgazmali metodlar zamonaviy interfaol texnologiyalar bilan uyg‘unlashgan holdagina kutilgan yuqori samaradorlikni berishi amaliy jihatdan o‘z tasdig‘ini topdi. Ayniqsa,

ixtisoslashtirilgan ta’lim sharoitida o‘quvchilarni faqat tayyor formulalar va standart hisob-kitoblarga o‘rgatish bilan cheklanib qolmasdan, ularda muammoli vaziyatlarni mustaqil tahlil qilish, mantiqiy algoritmlar tuzish va kreativ yechimlar topish ko‘nikmalarini shakllantirish bosh maqsad bo‘lib qolishi lozim. Bu jarayonda muammoli o‘qitish va loyihaviy faoliyat o‘quvchining ichki intellektual salohiyatini yuzaga chiqaruvchi asosiy drayver vazifasini o‘taydi.

Shuningdek, xulosa o‘rnida ta’kidlash joizki, har bir o‘quvchining individual imkoniyatlarini inobatga oluvchi differensial (tabaqalashtirilgan) yondashuv ixtisoslashtirilgan sinflarda ta’lim adolatliligi va uzviyligini ta’minlaydigan eng maqbul vositadir. Didaktik o‘yinlar va raqamli texnologiyalarning dars jarayoniga samarali integratsiya qilinishi esa o‘quvchilarda fanga nisbatan barqaror ijobiy motivatsiyani shakllantirib, murakkab matematik apparatni o‘zlashtirishdagi psixologik to‘siqlarni bartaraf etishga yordam beradi. Yakuniy natijalar shuni ko‘rsatadiki, zamonaviy metodik tizim asosida tashkil etilgan darslar boshlang‘ich sinf o‘quvchilarining nafaqat matematik kompetensiyalarini, balki ularning tanqidiy fikrlash, tahlil qilish va nazariy bilimlarni hayotiy vaziyatlarda qo‘llash layoqatlarini ham sezilarli darajada oshiradi. Shu tariqa, tanlangan metodlar majmuasi kelajakda aniq fanlar yo‘nalishida muvaffaqiyatli bilim olishi mumkin bo‘lgan raqobatbardosh shaxs poydevorini qo‘yishda fundamental ahamiyat kasb etadi.

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THE USE OF DEATH AS A TABOO THROUGH CURSES AND INSULTING EXPRESSIONS: PARALLELS IN ENGLISH AND UZBEK LANGUAGES

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Abstract

This article examines the use of death-related expressions as taboo phenomena in English and Uzbek languages through curses, insults, and offensive speech. The study analyzes how the concept of death functions linguistically as a tool of emotional aggression, social condemnation, and expressive intensification. The semantic, pragmatic, cultural, and linguocultural features of death-related curses and insulting expressions are comparatively investigated. The findings reveal that both English and Uzbek languages employ death-related lexical units as powerful taboo mechanisms; however, their cultural motivations and communicative functions differ significantly. English insulting expressions tend to emphasize individual aggression and emotional confrontation, whereas Uzbek curses frequently incorporate collectivist values, religious beliefs, family honor, and moral judgment. The study contributes to comparative linguistics, pragmatics, taboo studies, and linguoculturology.

Keywords: taboo, death concept, curses, insulting expressions, euphemism, dysphemism, linguoculturology, pragmatics, English language, Uzbek language.

Introduction

Language reflects not only positive aspects of human communication but also emotional aggression, social conflict, cultural fears, and taboo perceptions. Among the most universal and emotionally charged concepts in human culture is death. Throughout history, death has functioned not only as a biological reality but also as a symbolic, religious, psychological, and cultural phenomenon. Because of its association with fear,

loss, punishment, and uncertainty, death occupies a central place in taboo systems across many societies.

Taboo language refers to linguistic expressions that are socially restricted, emotionally sensitive, or culturally prohibited. According to Allan and Burridge, taboo expressions emerge in areas connected with fear, religion, sexuality, death, and bodily functions (Allan & Burridge, 2006). Among these, death-related language demonstrates particularly strong emotional and expressive potential.

Death may appear in language through euphemisms, which soften its harshness, or through dysphemisms, which intensify negativity and emotional aggression. In curses and insulting expressions, death frequently functions as a dysphemistic mechanism used to threaten, humiliate, condemn, or emotionally attack another person.

Both English and Uzbek languages contain numerous curses and offensive expressions connected with death. Expressions such as "**Drop dead**", "**Go to hell**", or "**You're dead to me**" in English demonstrate direct emotional hostility and interpersonal aggression. Uzbek language, meanwhile, contains culturally specific expressions such as "**O'lib ket**", "**Go'ringga bor**", or "**Qabringga kir**" which reflect not only aggression but also deeper cultural concepts related to religion, morality, family honor, and social ethics.

The use of death-related expressions in curses is closely connected with cultural perceptions of fear and punishment. In many societies, death is considered sacred or spiritually sensitive; therefore, invoking death in communication becomes highly expressive and emotionally powerful. Such expressions often violate communicative norms intentionally in order to intensify emotional impact.

The aim of this article is to comparatively analyze death-related curses and insulting expressions in English and Uzbek languages from semantic, pragmatic, and linguocultural perspectives. The study seeks to identify cultural parallels and differences in the use of death as a taboo mechanism.

Literature Review

The study of taboo language has become an important area within sociolinguistics, pragmatics, and linguoculturology. Scholars such as Allan and Burridge describe taboo language as expressions avoided or restricted because of social, cultural, or psychological reasons (Allan & Burridge, 2006). Taboo words often become emotionally powerful precisely because they violate social norms.

Dysphemism, the opposite of euphemism, refers to deliberately harsh or offensive language used to create emotional intensity or insult. According to Warren, dysphemistic expressions frequently emerge in contexts of anger, conflict, and social aggression. Death-related expressions are among the strongest forms of dysphemism because they invoke fear, loss, and existential anxiety.

Lakoff and Johnson emphasize that metaphorical systems shape human conceptual understanding, including perceptions of death and destruction (Lakoff & Johnson, 1980). In many cultures, death is metaphorically associated with darkness, punishment, hell, decay, or disappearance. Such metaphorical models influence the formation of curses and insulting expressions.

In English linguistic culture, insults connected with death are often direct and individualistic. Expressions such as "**Drop dead**" or "**Go die**" demonstrate personal aggression and emotional rejection. English taboo language frequently prioritizes emotional release and individual confrontation.

Uzbek linguistic culture, however, demonstrates stronger connections between taboo language and collective morality. Death-related curses in Uzbek often include references to family members, divine punishment, graves, or dishonor. This reflects the importance of communal values and spiritual worldview within Uzbek society.

Although many studies have examined taboo language and insults separately, comparative analysis of death-related taboo expressions in English and Uzbek languages

remains insufficiently explored. This article attempts to fill that gap through a linguocultural comparison.

Methods

This research employed a comparative linguocultural approach to investigate the use of death-related curses and insulting expressions as taboo phenomena in English and Uzbek languages. The primary objective of the study was to identify how the concept of death functions as a linguistic instrument of emotional aggression, social condemnation, psychological pressure, and expressive intensification in both linguistic cultures. In order to achieve this aim, the research integrated several linguistic methods, including comparative analysis, semantic analysis, pragmatic analysis, contextual analysis, dysphemistic interpretation, and linguocultural analysis.

The comparative method was used to determine similarities and differences between English and Uzbek taboo expressions related to death. The study focused on identifying how both languages conceptualize death within curses, insults, threats, and emotionally offensive communication. Particular attention was given to the structural organization of expressions, metaphorical imagery, emotional intensity, and communicative purpose. The comparison made it possible to reveal culture-specific tendencies in the use of taboo language.

The semantic analysis method played a central role in examining both literal and figurative meanings of the selected expressions. The study analyzed how lexical units associated with death acquire negative, aggressive, and emotionally destructive meanings within communicative contexts. Expressions such as "**Drop dead**", "**Rot in hell**", and "**You're dead to me**" in English were semantically compared with Uzbek expressions such as "**O'lib ket**", "**Go'ringga bor**", and "**Joning jahannamda kuysin**".

The semantic analysis helped determine how death-related vocabulary functions beyond its direct meaning and transforms into a tool of insult and condemnation.

Results

The comparative analysis revealed that death-related curses and insulting expressions function as powerful taboo mechanisms in both English and Uzbek languages. However, significant differences were identified in their cultural meanings, emotional structure, and communicative functions.

In English, many death-related insults are direct and confrontational. Expressions such as "**Drop dead**" or "**Go die**" are used to express intense anger, hatred, or emotional rejection. These expressions primarily function as interpersonal aggression aimed at humiliating or dismissing another person.

The phrase "**You're dead to me**" metaphorically excludes a person from emotional or social existence. Rather than referring to physical death, the expression symbolizes complete relational rejection. Similarly, "**Rot in hell**" combines religious imagery with moral condemnation.

English death-related insults often prioritize emotional immediacy and personal confrontation. They are frequently short, direct, and individual-oriented. The emphasis is placed on emotional intensity rather than social ritual or collective morality.

Uzbek death-related curses demonstrate a more culturally layered structure. Expressions such as "**Go'ringga bor**" or "**Qabringga kir**" invoke grave imagery and symbolize complete destruction or disappearance. These expressions are highly offensive because graves and death are culturally sacred concepts within Uzbek society.

The curse "O'liging chiqsin" carries extremely strong emotional aggression and reflects cultural beliefs about misfortune, shame, and suffering. Unlike English insults, Uzbek death-related curses often extend beyond the individual and may imply consequences affecting family honor or spiritual condition.

Religious concepts also play a stronger role in Uzbek taboo expressions. Phrases such as "**Joning jahannamda kuysin**" reflect Islamic imagery of hell and divine punishment. Such expressions intensify emotional aggression by invoking spiritual suffering rather than merely physical death.

The findings demonstrate several major parallels and differences:

1. Both languages use death as a powerful taboo concept in emotional aggression.
2. English expressions are more direct and individualistic.
3. Uzbek expressions contain stronger religious and collectivist components.
4. Grave and afterlife imagery are especially significant in Uzbek curses.
5. English taboo expressions focus on emotional confrontation, while Uzbek curses often involve moral and spiritual condemnation.

Discussion

The results demonstrate that death-related taboo expressions reflect deeper cultural perceptions of fear, morality, punishment, and social order. Although both English and Uzbek languages use death symbolically in insults and curses, the cultural logic underlying these expressions differs considerably.

English taboo expressions are strongly influenced by individualistic communication patterns. Emotional aggression is often directed personally and explicitly. Expressions such as "**Drop dead**" serve primarily as emotional outbursts rather than ritualistic or culturally symbolic acts.

Uzbek taboo expressions, however, reveal stronger integration of religion, spirituality, and collective morality. In Uzbek culture, death is treated with considerable respect and sacredness. Consequently, invoking death in curses becomes especially powerful and socially offensive.

Another important difference concerns family and communal identity. Uzbek insults may indirectly affect not only the individual but also their social and moral reputation.

This reflects collectivist cultural structures in which personal identity is closely connected with family and community.

The metaphorical structures used in both languages also differ. English expressions often conceptualize death as disappearance, rejection, or emotional elimination. Uzbek expressions rely more heavily on grave imagery, hell, suffering, and spiritual punishment.

The findings also indicate that taboo language serves important pragmatic functions. Death-related insults allow speakers to express anger, frustration, rejection, or social hostility with maximum emotional intensity. At the same time, such expressions reveal cultural boundaries regarding morality, fear, and sacred concepts.

Thus, death-related taboo expressions function not only as linguistic tools of aggression but also as cultural indicators reflecting national worldview and collective psychology.

Conclusion

This study comparatively analyzed death-related curses and insulting expressions in English and Uzbek languages from semantic, pragmatic, and linguocultural perspectives. The findings demonstrate that death functions as a universal taboo concept used to intensify emotional aggression and social condemnation in both linguistic cultures.

English death-related expressions mainly emphasize direct interpersonal confrontation and emotional rejection, whereas Uzbek curses contain stronger religious, spiritual, and collectivist meanings. Uzbek taboo expressions frequently involve grave imagery, divine punishment, and communal morality, reflecting the cultural significance of spirituality and social honor.

The study confirms that taboo language serves as an important linguistic reflection of cultural mentality and emotional behavior. Comparative analysis of death-related insults

contributes to the development of taboo studies, pragmatics, sociolinguistics, and intercultural communication research.

Future studies may further investigate the relationship between taboo language, gender, social hierarchy, and emotional expression across different cultures and linguistic traditions.

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Prevention of bronchial asthma exacerbations in children

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Abstract: The work focuses on a comprehensive approach to prevention, including elimination measures to control environmental triggers and methods for early detection of loss of asthma control. The role of personalized action plans and regular respiratory function monitoring is emphasized.

Keywords: prevention, exacerbation, triggers, monitoring, peak flowmetry.

Профилактика обострений бронхиальной астмы у детей

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Аннотация: Работа фокусируется на комплексном подходе к профилактике, включающем элиминационные мероприятия по контролю триггеров окружающей среды и методы раннего выявления потери контроля над заболеванием. Подчеркивается роль индивидуальных планов действий и регулярного мониторинга функции дыхания.

Ключевые слова: профилактика, обострение, триггеры, мониторинг, пикфлоуметрия.

Профилактика делится на первичную (предупреждение развития болезни) и вторичную (предотвращение приступов). Основу вторичной профилактики составляет контроль триггеров. Для детей это чаще всего бытовые аллергены (клещи домашней пыли, шерсть животных), пыльца и вирусные инфекции.

Элиминационная стратегия включает использование гипоаллергенных чехлов, регулярную влажную уборку и минимизацию контакта с табачным дымом.

Важным инструментом профилактики является пикфлоуметрия — ежедневный мониторинг пиковой скорости выдоха (ПСВ). Снижение ПСВ в «желтую зону» (60-80% от лучшего результата) позволяет врачу и родителям усилить терапию еще до появления выраженных симптомов. Также ключевую роль играет вакцинация против гриппа и пневмококковой инфекции, так как ОРВИ являются самым частым триггером обострений у детей школьного возраста.

Четвертый блок выводов касается профилактических стратегий, которые смещаются в сторону персонализированного контроля окружающей среды.

Элиминационный контроль: Доказано, что без жесткого контроля аэроаллергенов (клещи домашней пыли, эпидермальные аллергены) фармакотерапия требует постоянного наращивания доз. Экологическая гигиена жилища — это базис, без которого медикаментозное лечение становится симптоматическим.

Мониторинг функции дыхания: Пикфлоуметрия должна стать для ребенка с астмой тем же, чем глюкометрия для диабетика. Переход от реактивной тактики (лечим приступ) к проактивной (увеличиваем дозу при снижении пиковой скорости выдоха) — залог стабильной ремиссии.

Инфекционный контроль: Учитывая вирус-индуцированный характер большинства обострений в педиатрии, вакцинация против гриппа и пневмококка признается важным неспецифическим методом профилактики тяжелых эксцессов астмы.

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FEATURES OF THE PRACTICAL APPLICATION OF ELASTICITY THEORY

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ABSTRACT

This scientific thesis is devoted to analyzing the practical application features of elasticity theory in economics. The concepts of price elasticity, income elasticity, cross-price elasticity, and supply elasticity are examined based on clear examples and existing literature. The thesis critically discusses policy development, tax burden distribution, monopoly pricing, and problems in agricultural markets. Particular attention is given to the limitations of the theory, including variable elasticity, data scarcity, and the challenges of dynamic markets. The thesis is based on 8 key sources and concludes with practical recommendations for economic policy.

Keywords: price elasticity, supply and demand, income elasticity, cross-price elasticity, Giffen good, demand triangle, tax burden, monopoly pricing, agricultural market, economic policy.

ELASTIKLIK NAZARIYASINING AMALIYOTDA QO‘LLASH XUSUSIYATLARI

Navoiy davlat konchilik va texnologiyalar universiteti

talabasi Irgasheva Nargiza

ANNOTATSIYA

Ushbu ilmiy tezis elastiklik nazariyasining iqtisodiyotdagi amaliy qo‘llanilish xususiyatlarini tahlil qilishga bag'ishlangan. Narx elastikligi, daromad elastikligi, o‘zaro

narx elastikligi va taklif elastikligi tushunchalari aniq misollar va mavjud adabiyotlar asosida ko‘rib chiqiladi. Tezisda siyosat ishlab chiqish, soliq yukini taqsimlash, monopol narxlash va agrar bozor muammolari tanqidiy jihatdan muhokama qilinadi. Nazariyaning chegaralari — o'zgaruvchan elastiklik, ma'lumot tanqisligi va dinamik bozorlar muammolari — alohida e’tiborga olingan. Tezis 8 ta asosiy adabiyotga tayanadi va xulosada iqtisodiy siyosat uchun amaliy takliflar bayon etilgan.

Kalit so'zlar: narx elastikligi, talab va taklif, daromad elastikligi, o'zaro narx elastikligi, Giffin tovar, talab uchburchagi, soliq yuki, monopol narxlash, agrar bozor, iqtisodiy siyosat.

KIRISH

Elastiklik iqtisodiy tahlilning asosiy vositalaridan biri hisoblanadi: u bir o'zgaruvchining boshqasiga nisbatan qanchalik sezgir ekanini o'lchaydi. Ushbu tushunchaning to'g'ri tushunilishi hukumat siyosatchilari, korxona rahbarlari va tadqiqotchilar uchun bir xil darajada muhimdir. N.G. Mankiw ta'kidlaganidek, “elastiklik biz talab va taklifni yanada aniqroq tahlil qilishimizga imkon beradi” [1, 87-bet].

Shu bilan birga, elastiklik nazariyasi ko'pincha iqtisodchilar tomonidan real bozor murakkabligini inobatga olmagan holda qo'llaniladi. Amaliyotda elastiklik qiymatlari vaqt o'tishi bilan o'zgarib turadi, bozor segmentlari bo'yicha farqlanadi va empirik o'lchashda jiddiy qiyinchiliklarni keltirib chiqaradi. Ushbu tezisda nazariyaning kuchli tomonlari bilan bir qatorda ana shu cheklovlar ham tanqidiy ko'z bilan baholanadi.

ASOSIY QISM

Narx elastikligi talabining (NET) ta’rifi quyidagicha ifodalanadi: $Ed = (\Delta Q/Q) / (\Delta P/P)$, ya'ni talab miqdorining foizli o'zgarishini narxning foizli o'zgarishiga bo'lish [1, 89-bet].

Bu formulaning soddaligi uning keng qo'llanilishiga zamin yaratgan, ammo bir qator muhim cheklovlarni ham olib kelgan.

R.S. Pindyck va D.L. Rubinfeld "Mikroiqtisodiyot" [2] asarida elastiklikning turli xillarini batafsil ko'rsatadilar. Muallif ta'kidlashicha, oddiy zaruriy tovarlar (masalan, non, tuz, suv) uchun |Ed| < 1 — inelastik talab, ya'ni narx 10% ko'tarilganda sotuv miqdori 10%dan kamroq kamayadi [2, 4-bob]. Aksincha, hashamatli tovarlar, almashtiruvchilari ko'p tovarlar uchun |Ed| > 1 bo'lib, narx o'zgarishiga xaridorlar keskin munosabat bildiradi [2, 4-bob].

Daromad elastikligi (YED) esa tovar talabining xaridorlar daromadiga sezgirligini aks ettiradi. Engel egri chizig'i (Ernst Engelning tadqiqotlari asosida) past daromadli oilalarda oziq-ovqat xarajatlari ulushi yuksak bo'lishini va daromad oshgani sari bu ulush kamayishini ko'rsatadi [3,5-bob]. Normal tovarlarda YED > 0, pastki (inferior) tovarlarda YED < 0 bo'ladi.

O'zaro narx elastikligi (XED) esa ikki tovar narxlari o'rtasidagi munosabatni o'lchaydi. O'rinbosar tovarlar uchun XED > 0: masalan, qo‘y go'shti narxi oshganda mol go'shtiga talab ortadi. To'ldiruvchi tovarlar uchun XED < 0: avtomobil narxi oshganda benzinga talab kamayadi. Bu tushuncha monopolga qarshi qonunchilikda bozor ta'rifi uchun ham qo'llaniladi [2, 4-bob].

Tanqidiy baholash: Ko'plab iqtisodchilar elastiklik koeffitsientlarini statik kattalik sifatida talqin qilish xatosiga yo'l qo'yadi. Aslida elastiklik qiymati vaqt ufqiga qarab o'zgaradi: qisqa muddatda benzin talabi inelastik bo'lsa-da, uzoq muddatda iste'molchilar alternativ transport vositalariga o'tishi tufayli talab ancha elastik bo'ladi. Dela Cruz va boshqalar (2023) [4] tadqiqoti ko'rsatishicha, "elastiklik koeffitsientlari sanoat, demografik segment va vaqt davri bo'yicha sezilarli farqlanadi" [4, 3-bet], bu esa umumlashtirilgan qiymatlarni e'tiborsiz qo'llashni xavfli qiladi.

Elastiklik nazariyasining eng muhim amaliy tatbiqi soliq yukini taqsimlash (tax incidence) masalasidir. Mankiw ta'kidlaganidek, "soliqning xaridorlar va sotuvchilar o'rtasida taqsimlanishi talab va taklifning nisbiy elastikligiga bog'liq" [1, 157-bet]. Agar talab inelastik bo'lsa, soliq yuki asosan iste'molchilar zimmasiga tushadi; taklif inelastik bo'lsa, ishlab chiqaruvchilar ko'proq og'irlik ko'taradi.

Klassik misol sifatida tamaki mahsulotlariga solinadigan aksiz soliqni ko'rsatish mumkin. Chekishga bog'liqlik tufayli tamaki talabi yuqori inelastiklikka ega ($|Ed| \approx 0{,}3–0{,}5$), shuning uchun narx oshganda sotuv miqdori nisbatan oz kamayadi. Bu holda soliq davlat daromadini samarali ko'paytiradi, lekin xaridorlar juda katta og'irlik ko'taradi, bu esa ijtimoiy adolat nuqtai nazaridan muammoli [2, 9-bob].

Shuning bilan birga, Pindyck va Rubinfeld [2] qayd etishicha, iqtisodiy samaradorlik nuqtai nazaridan hukumat ko'proq inelastik tovarlarga soliq solishni afzal ko'radi, chunki bu yo'qotish (deadweight loss) ni kamaytiradi. Ammo bu yondashuv regressiv xarakter kasb etadi: past daromadli oilalar zaruriy tovarlarga (non, gaz, transport) daromadlarining katta qismini sarflaydi va shu tovarlar ko'pincha inelastik. Demak, soliq samaradorligi bilan ijtimoiy adolat o'rtasida ziddiyat yuzaga keladi.

Baholarni tartibga solish (narx shiplari va pollari) masalasida ham elastiklik markaziy o'rin tutadi. Talab yuqori elastik bo'lgan bozorda narx shipi (masalan, uy-joy ijara narxini chegaralash) katta taqchillik keltirib chiqaradi, chunki narx tushishi bilan talab keskin oshadi. Mankiw muqobilida "uy-joy bozorida qisqa muddatda talab inelastik bo'lsa-da, uzoq muddatda elastiklik oshishi bilan tartibga solishning salbiy oqibatlari kuchayib boradi" [1, 115-bet] deb ta'kidlaydi.

Monopolist firma uchun optimal narx belgilash bevosita talab elastikligiga bog'liq. Lerner indeksi formulasiga ko'ra: $(P - MC)/P = -1/Ed$, ya'ni talab qanchalik inelastik bo'lsa, firma qo'shimcha foyda (markup) shunchalik katta belgilaydi [2, 10-

bob]. Bu munosabat monopolga qarshi siyosat ishlab chiqishda amaliy asosni tashkil etadi.

Farqlovchi narxlash (price discrimination) ham elastiklik tushunchasiga asoslanadi. Uchiruvchi kompaniyalar tijorat va iqtisod-klass yo'lovchilariga turli narx qo'llaydi, chunki ular talabning elastikligida keskin farq borligini biladi: biznes yo'lovchilar (inelastik) va iste'molchi yo'lovchilar (elastik). Shunga o'xshash narxlash strategiyasi dori-darmon, ta'lim va kommunal xizmatlar bozorlarida ham kuzatiladi [2, 11-bob].

Agrar iqtisodiyotda elastiklik paradoksal holatlarga olib keladi. Qishloq xo'jaligi mahsulotlari talabi odatda inelastik ($|Ed| < 0,5$). Shuning uchun hosil mo'l bo'lganda tovar miqdori ortadi, lekin narx shunday pasayadiki, fermerlarning umumiy daromadi kamayadi — "mo'l hosil la'nati" (paradox of plenty) hodisasi. Mankiw [1] bug'doy bozori misolida bu hodisani batafsil ko'rsatadi: texnologik taraqqiyot natijasida hosildorlik oshgani fermerlar daromadini pasaytirganligi mumkin [1, 103-bet].

Elastiklik nazariyasi bir qator muhim farazlarga tayanadi, va bu farazlar real iqtisodiy muhitda har doim ham to'g'ri kelmaydi.

Birinchi muammo — o'lchash qiyinligi. Empirik ma'lumotlar asosida elastiklik qiymatlarini hisoblash tez-tez endogenlik muammosiga duch keladi: narx va miqdor o'zgarishlari bir vaqtda talab va taklif tomonidan belgilanadi. Hadji Acmad va boshqalar (2024) [5] hashamatli tovarlar bozorini o'rganishda bu muammoni ta'kidlab, instrumental o'zgaruvchilar usulisiz olingan elastiklik baholar ishonchsiz bo'lishini ko'rsatadi [5, 4-bet].

Ikkinchi muammo — geterogen iste'molchilar. Bozor o'rtacha elastikligi turli xaridorlar segmentlarini yashiradi. Past daromadli oilalar uchun zaruriy tovarlar talabi mutlaqo inelastik bo'lishi mumkin, yuqori daromadli oilalar uchun esa o'sha tovar

elastik. Bu farq siyosat ishlab chiqishda e'tibordan chetda qolishi adolatsiz oqibatlarga sabab bo'ladi [4, 5-bet].

Uchinchi muammo — dinamik bozorlar. Raqamli iqtisodiyot sharoitida iste'molchi xulqi tezda o'zgaradi. Onlayn platformalar, obuna modellari va algori tmik narxlash an'anaviy elastiklik o'lchovlarini bekor qilishi mumkin. Fibich, Gavious va Lowengart (2005) [6] narx elastikligi dinamikasini o'rganib, mos yozuvlar narxi (reference price) mavjudligida elastiklik vaqt bo'yicha tizimli o'zgarib turishini ko'rsatadi [6, 76-bet].

Shunga qo'shimcha, Giffin tovarlar klassik elastiklik tushunchasiga zid keladi: narx oshganda talab ham oshadi (Ed > 0). Bu holat real iqtisodiyotda kamdan-kam uchraydigan, lekin nazar-pisand qilish xavfli nazariy istisnodır. Ladesma va boshqalar (2023) [7] Filippindagi guruch bozoridagi tadqiqotlarida past daromadli oilalar orasida Giffin effektiga yaqin xulq-atvor kuzatilganligini qayd etib, bu hodisaning rivojlanayotgan mamlakatlar iqtisodiyotida amaliy ahamiyatga ega ekanini ta'kidlaydi [7, 6-bet].

XULOSA

Ushbu tezisda elastiklik nazariyasining iqtisodiyotdagi tatbiqini tahlil qilish asosida quyidagi xulosalarga kelindi:

Narx, daromad va o'zaro elastiklik tushunchalari mikroiqtisodiy tahlilning mustahkam apparatini tashkil etadi. Biroq bu qiymatlar kontekst va vaqtga qarab o'zgarib turadi, shuning uchun ularni bir martalik o'lchov sifatida talqin qilish xato bo'ladi.

Inelastik talabli tovarlarga solingan soliqlar daromad jihatidan samarali, ammo ijtimoiy adolat jihatidan muammoli. Siyosat ishlab chiquvchilar elastiklik qiymatlarini

geterogen xaridorlar kesimida tahlil qilmay, yagona koeffitsientga tayansa noto'g'ri qarorlar qabul qilishi mumkin.

Algoritmik narxlash, to'plam (bundle) sotish va dinamik narxlar an'anaviy elastiklik o'lchovlarini eskirtirib, yangi empirik metodologiyani talab qilmoqda.

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The Issue of Training Medical Personnel in Namangan at the End of the 19th Century

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Annotation. This article analyzes the state of the medical personnel training system in Namangan region in the early 1950s based on archival sources. It examines the level of provision with mid-level medical staff, imbalances in specialties, the composition of teaching staff, the system of professional development, and the material and technical base of educational institutions. The study also highlights the ideological and educational aspects of medical training. The results make it possible to identify key features and challenges of the development of the medical education system during this period.

Keywords: medical personnel, Namangan region, healthcare, feldsher, nurse, midwife, medical education, professional development, teaching staff, material and technical base, Soviet period, ideological educationO‘zbek tilida

XIX ASR OXIRDA NAMANGANDA TIBBIY KADRLAR TAYYORLASH MASALSI

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Anotatsiya. Mazkur tesizda 1950-yillar boshida Namangan viloyatida tibbiy kadrlar tayyorlash tizimining holati arxiv materiallari asosida tahlil qilinadi. Unda o‘rta bo‘g‘in tibbiy xodimlar bilan ta’minlanganlik darajasi, mutaxassisliklar bo‘yicha nomutanosiblik, pedagogik kadrlar tarkibi, malaka oshirish tizimi hamda ta’lim muassasalarining moddiy-texnik bazasi yoritilgan. Shuningdek, tibbiy ta’lim jarayonining ideologik va ma’naviy jihatlari ham ochib berilgan. Tadqiqot natijalari

ushbu davrda tibbiy ta’lim tizimining rivojlanish xususiyatlari va muammolarini aniqlash imkonini beradi.

Kalit so‘zlar: tibbiy kadrlar, Namangan viloyati, sog‘liqni saqlash, feldsher, hamshira, akusher, tibbiy ta’lim, malaka oshirish, pedagogik kadrlar, moddiy-texnik baza, sovet davri, ideologik tarbiya.

Аннотация.В данной статье на основе архивных материалов анализируется состояние системы подготовки медицинских кадров в Наманганской области в начале 1950-х годов. Рассматриваются уровень обеспеченности средним медицинским персоналом, диспропорции по специальностям, состав педагогических кадров, система повышения квалификации, а также материально-техническая база учебных заведений. Кроме того, раскрываются идеологические и воспитательные аспекты медицинского образования. Результаты исследования позволяют определить особенности и проблемы развития системы медицинского образования в рассматриваемый период.

Ключевые слова: медицинские кадры, Наманганская область, здравоохранение, фельдшер, медсестра, акушерка, медицинское образование, повышение квалификации, педагогические кадры, материально-техническая база, советский период, идеологическое воспитание

1950-yillar O‘zbekiston, xususan Namangan viloyati uchun sog‘liqni saqlash tizimini shakllantirish va mustahkamlash davri sifatida alohida ahamiyat kasb etadi. Bu davrda jamiyat hayotining barcha sohalari kabi tibbiyot tizimi ham tub islohotlar va keng ko‘lamli o‘zgarishlar jarayonini boshdan kechirgan. Ayniqsa, aholining son jihatdan o‘sishi, sanitariya-gigiyena muammolarining mavjudligi hamda kasalliklarning oldini olish zarurati tibbiy xizmatni kengaytirish va eng muhimi, malakali kadrlar bilan ta’minlash masalasini dolzarb muammoga aylantirgan.

Mazkur davrda sog‘liqni saqlash tizimining samaradorligi, avvalo, o‘rta bo‘g‘in tibbiy xodimlar — feldsherlar, hamshiralar va akusherlar faoliyatiga bevosita bog‘liq bo‘lgan. Chunki aynan ushbu mutaxassislar aholiga birlamchi tibbiy yordam ko‘rsatishda asosiy o’rin tutgan. Shu sababli ularni tayyorlash, qayta tayyorlash va malakasini oshirish masalalari davlat siyosati darajasiga ko‘tarilgan.

Namangan viloyati misolida bu jarayonni tahlil qilish orqali nafaqat hududiy sog‘liqni saqlash tizimining rivojlanish darajasini, balki o‘sha davr tibbiy ta’lim tizimining ichki tuzilmasi, imkoniyatlari va muammolarini ham aniqlash mumkin. Xususan, tibbiy kadrlar bilan ta’minlanganlik darajasi, mutaxassisliklar bo‘yicha nomutanosiblik, pedagogik kadrlar tarkibi, malaka oshirish tizimi hamda ta’lim muassasalarining moddiy-texnik bazasi bu borada muhim ko‘rsatkichlar hisoblanadi. Shuningdek, tibbiy ta’lim tizimi faqat kasbiy tayyorgarlik bilan cheklanib qolmagan, balki u o‘sha davr mafkuraviy siyosati bilan chambarchas bog‘liq holda rivojlangan. Bu esa tibbiy kadrlarni tayyorlash jarayonida nafaqat kasbiy bilim, balki ma’naviy-ideologik tarbiya ham muhim o‘rin egallaganini ko‘rsatadi.

Umuman olganda, Namangan viloyati misolida 1950-yillar boshidagi tibbiy kadrlar tayyorlash tizimi o‘zining ijobiy natijalari bilan bir qatorda qator tizimli muammolarni ham o‘zida mujassam etgan murakkab jarayon sifatida namoyon bo‘ladi. Ushbu tarixiy tajriba shuni ko‘rsatadiki, tibbiy ta’lim tizimini samarali rivojlantirish uchun nafaqat kadrlar sonini oshirish, balki ularning sifatini ta’minlash, moddiy bazani mustahkamlash va ta’lim mazmunini takomillashtirish muhim ahamiyatga ega.

Mazkur tahlillar natijasida olingan xulosalar bugungi kunda tibbiy ta’lim tizimini rivojlantirishda tarixiy tajribadan oqilona foydalanish, mavjud muammolarni chuqur anglash va ularni bartaraf etish yo‘llarini belgilashda muhim ilmiy-amaliy asos bo‘lib xizmat qiladi.

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Management of financial resources in sanatoriums and health resorts

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Abstract: This article examines the organization of sanatoriums and health resorts in a public–private partnership format, the financial resources of sanatoriums and health resorts and their structure, ways to use financial resources efficiently, as well as additional opportunities for generating profit in sanatoriums and health resorts. Based on the study, relevant proposals have been developed.

Keywords: health resort, financial resources, *authorized (charter) capital*, additional capital, *reserve capital*, retained earnings (undistributed profit), loan, credit (bank loan), income (revenue), *net profit*

Introduction

The emergence of sanatoriums and health resorts in our country dates mainly to the late 19th and early 20th centuries. Since the period of independence, the transformation of sanatoriums and health resorts from state ownership to private and mixed forms of ownership has been actively implemented.

In this regard, actions are carried out in accordance with the Law of the Republic of Uzbekistan "On Public-Private Partnership" No. O'RQ-537 dated May 10, 2019, as well as the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No. 720 dated October 30, 2024, "On measures to further improve and comprehensively systematize the public-private partnership sector."

The essence of these reforms is to support competition, expand entrepreneurial activities, improve public health, and build a healthy society. Sanatoriums and health resorts that have been transferred into private ownership are now required to efficiently

use their available financial resources and achieve financial independence through effective operations.

Today, public-private partnership (PPP) models in sanatoriums and health resorts are becoming increasingly widespread. Within the financial mechanism of PPP-based sanatorium projects, the state partner annually sends a specified number of users to the private partner based on vouchers. The price for each user sent by the state partner is reviewed annually through an indexation mechanism. The distribution of vouchers by months and indexation coefficients are specified in separate annexes of the PPP agreement.

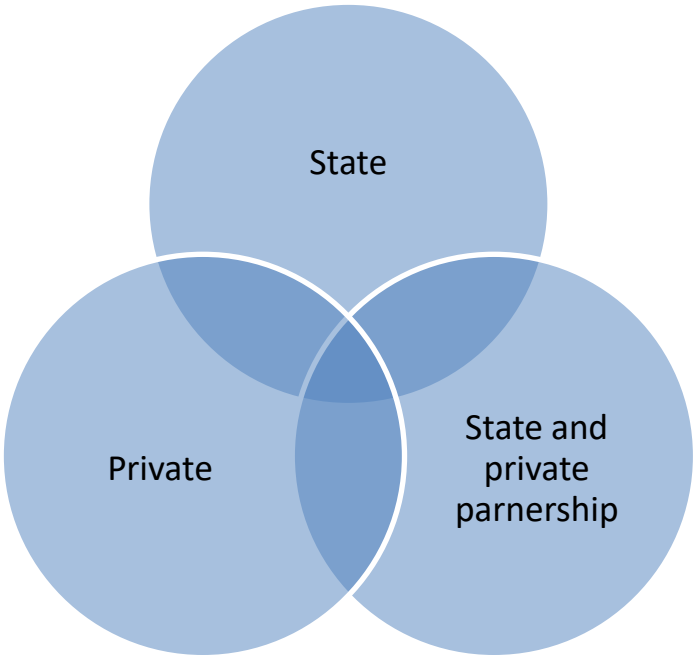
After taking over the sanatorium, the private partner is obliged to carry out reconstruction, construction, and installation of medical equipment within the established timeframe using its own funds. These deadlines and technical requirements are clearly defined in the PPP agreement.

At the same time, the private partner is entitled to sell paid vouchers to individuals other than those sent by the state partner. Prices for such vouchers are determined independently by the private partner, and the state partner does not influence pricing in this segment. All newly created capacities by the private partner are primarily directed toward paid users.

In addition, the private partner is required to pay a certain share of its income to the state partner (the amount and starting date will be determined in the second stage). This payment mechanism is based on the fact that the state partner provides the private partner with the right to use state-owned assets and conduct entrepreneurial activities on them. Therefore, after the private partner has recovered a certain portion of its investment, it will pay a defined share of its income for the use of the PPP facility.

Main body

Since the project value exceeds the equivalent of 1 million USD, the selection of the private partner is carried out through a two-stage tender process in accordance with the Law and the Resolution.



"Figure 1. Forms of ownership of sanatoriums and health resorts"

Procedure for Conducting Tenders:

Stage of Initial Qualification Assessment. In accordance with legislation, applicants wishing to participate in the initial qualification stage must submit the required documents within 30 (thirty) days. This period may be extended upon the request of applicants and with the consent of the tender commission.

The tender documentation package is attached for familiarization and explanation to applicants and includes the following:

- tender procedures and stages;
- application forms;
- requirements for initial qualification.

Stage of Evaluating Tender Proposals

At this stage, only applicants who have successfully passed the initial qualification assessment are eligible to participate.

Participants purchase the tender documentation from the State Partner for a one-time fee of 3,000,000 Uzbek soums and submit their documents to the tender commission within 45 days. This deadline may be extended if necessary.

The tender proposal package includes:

- project concept;
- forms for submitting tender proposals;
- evaluation criteria and conditions;
- minimum medical services to be provided to users sent through budget vouchers;
- requirements for newly constructed buildings and equipment;
- draft Public-Private Partnership (PPP) agreement.

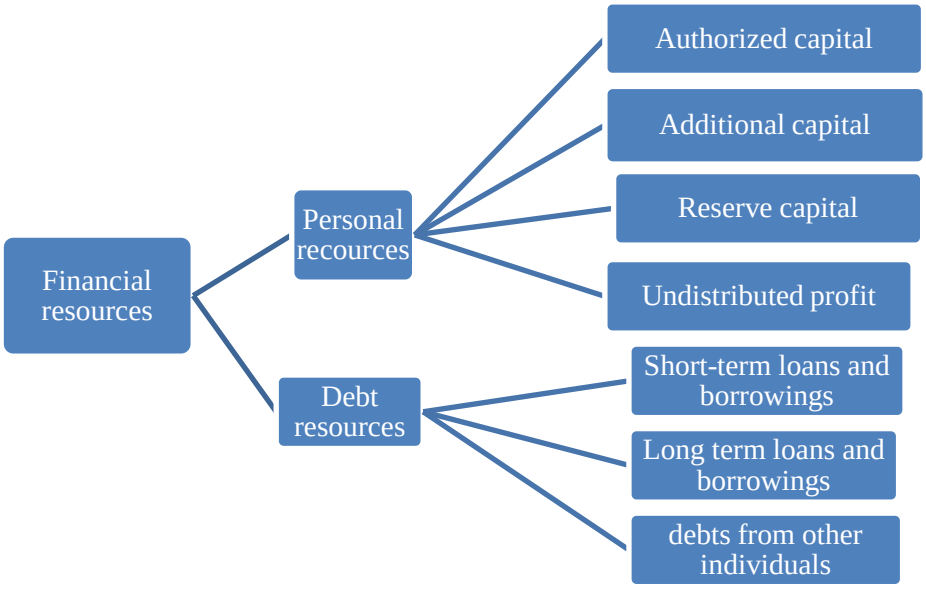
The sanatorium and health resort are established under a PPP agreement with the winning bidder. A mutually beneficial contract is implemented between the two parties. The state, based on the PPP model, increases its income through additional services created in the sanatorium and health resort.

Types of Public-Private Partnership Support:

- subsidies, including those aimed at ensuring the private partner's guaranteed minimum income from PPP project implementation;
- contributions in the form of assets and property necessary for implementing the PPP project;
- budget funds of the budget system of the Republic of Uzbekistan directed toward payment for consuming or using a certain amount or part of goods (works, services) produced or supplied during project implementation;

- provision of budget loans, credits, grants, credit lines, and other forms of financing;
- additional guarantees agreed upon by parties to ensure fulfillment of investor obligations;
- tax incentives and preferences, as well as other benefits;
- other guarantees and/or compensations.

Every enterprise requires financial resource management in its operations. Financial resources refer to a set of monetary funds and their sources required to financially support economic activities (such as enterprise or state revenues, capital, borrowed funds, and other financial forms). These resources financially support the activities of an economic entity and ensure cash flow throughout its operations.



"Figure 1. Financial resources and their composition"

Conclusion

Today, the financial resources of sanatoriums and health resorts are formed on the basis of private resources and long-term credit funds. In order to achieve higher

profits in a short period of time, sanatoriums and health resorts are required to expand the range of additional services in their operations.

In conclusion, when managing the financial resources of sanatoriums and health resorts, it is necessary to take into account factors such as seasonality and their close interconnection with the political, economic, legal, and cultural-educational aspects of the state.

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CORPUS-BASED MODEL FOR TEACHING SYNONYMS

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Annotation: This study explores a corpus-based model for teaching synonyms in foreign language education. The research highlights the role of corpus technologies in developing students' lexical competence and improving their understanding of synonym usage in context. The results show that corpus-based instruction increases learning effectiveness and students' analytical skills. The results indicate that the corpus model increases learners' motivation, encourages research-oriented learning, and improves the effectiveness of synonym acquisition. The proposed model can be effectively implemented in modern language teaching methodology and digital linguodidactics.

Keywords: corpus linguistics, synonyms, teaching methodology, lexical competence, corpus model, linguodidactics.

Today, the use of modern pedagogical and digital technologies in teaching foreign languages is gaining importance. In particular, the approach based on corpus linguistics allows studying language units in real speech examples, which serves to develop students' lexical competence. The use of corpus materials in teaching synonyms is an effective tool for identifying the subtleties of meaning, stylistic differences, and frequency of use of words.

This study develops a corpus model for teaching synonyms and analyzes its linguodidactic capabilities. The main goal of the model is to teach students to analyze synonymous units based on a real context, distinguish their semantic and pragmatic properties, and correctly use them in speech. During the study, authentic texts were selected using corpus technologies and a special system of exercises was developed

based on them. Synonymy is an important indicator of lexical richness in the language system, and in teaching practice it often remains at the level of memorizing a “list of synonyms”. Such an approach cannot sufficiently reveal the functional differences of synonyms in real speech, that is, which unit is used in which context naturally, accurately and stylistically. In fact, synonyms are not absolutely equal: the factors that distinguish them include combinability (with which words it is combined more often), frequency (which unit is used more often), register (formal, scientific, journalistic, colloquial), evaluative ness and stylistic coloring. Therefore, the methodology of teaching synonyms requires a source of evidence about the real use of the language; as such, text corpora transfer the choice of synonyms from “intuition” to “observation and proof”, that is, the student learns to base his decision on linguistic facts.

Corpus data itself inevitably leads to the creation of new theories of language, in the sense that this approach to using corpus data is more theory-based than using it in conjunction with other methods or non-corpus-based theories. The idea that data and theory are somehow compatible is sometimes expressed in slightly different terms, for example: corpus linguistics is the only source of language theory, and is part of the corpus-based approach. Such an approach avoids the previous linguistic classification, that is, it distracts from what we might call "pure" theory hidden in the data. The strongest forms of the claim are that the corpus itself (and not just corpus linguistics as a field) is a theory; for example, Tognini-Bonelli's insistence that "theory does not exist independently of evidence". This is a very strong position to accept and requires careful elaboration.

The experimental results showed that the corpus-based methodology is more effective than traditional methods. Students developed the skills of faster understanding of the meaning differences of synonyms, their correct use in context, and independent analysis. Corpus materials also helped to increase students' interest in the language and

create an interactive and research-oriented learning environment. In conclusion, the corpus model of teaching synonyms is an effective methodological tool as a modern linguodidactic approach and is important in developing lexical competence in the process of foreign language learning. In generative grammar, as in most branches of linguistics, and indeed in all sciences and human relations in general, there is a clear conceptual separation between the theory to be supported (in the case of generative grammar, we might suppose it to be a set of some ideas about the nature of Universal Grammar) and the evidence intended to support it (the speaker's judgments about the grammaticality of a given set of constructed model sentences). If we take what we might describe as "the corpus is a theory," we are forced to conclude that the claim that "the corpus is a theory" has literally obliterated this distinction between data and theory: the corpus is for them both the phenomenon in need of explanation and the collection intended to explain it.

Data is data and theory is theory: while observations are important as necessary support for explanations, it is clear that they do not constitute explanations in themselves. Corpus theory rejects any explanation of linguistic regularities, does not derive them from the analyst's direct interaction with the data, but rather considers the corpus and corpus techniques as a source of empirical data as a corpus method. Any explanatory theory of language, even if developed without full or partial reference to corpus data, can be used to support or refute it. In contrast, corpus linguistics describes the following approach to "discourse":

Not a language-external taxonomy of linguistic units, but rather the discourse itself, should provide the categories and classifications necessary to answer the research question posed. The difference between these two approaches to discourse analysis could not be more stark. For corpus practitioners, corpus linguistics as a method can be used in conjunction with an established analytical framework, which in turn has nothing

to do with corpus linguistics. For Teubert, the only appropriate analytical framework for corpus evidence on discourse is the corpus framework as theory.

The results of the experiment showed that the corpus-based methodology is more effective than traditional methods. Students developed the skills of faster understanding of the meaning differences of synonyms, their correct application in context and independent analysis. Also, the corpus materials increased students' interest in the language and helped to create an interactive and research-oriented learning environment. In conclusion, the corpus model of teaching synonyms is an effective methodological tool as a modern linguodidactic approach and is of great importance in the development of lexical competence in the process of foreign language learning.

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Using Artificial Intelligence to Improve Students' Language Proficiency for CEFR Exams

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Abstract: This article discusses how artificial intelligence (AI) can effectively support students in preparing for CEFR exams. It explains how AI helps develop reading, writing, listening, and speaking skills through personalized exercises, instant feedback, and progress tracking. The article also examines the advantages and challenges of using AI in language education and highlights the importance of combining technology with teacher guidance.

Keywords: artificial intelligence, CEFR, language proficiency, digital learning, personalized education

Introduction

In today's globalized world, foreign language proficiency is essential for academic success, career development, and international communication. The CEFR (Common European Framework of Reference for Languages) is widely used to measure language ability at six levels: A1, A2, B1, B2, C1, and C2. CEFR-based exams assess students' reading, writing, listening, and speaking skills according to clear international standards.

To achieve high scores in CEFR exams, students must practice regularly, understand exam criteria, and receive continuous feedback. Traditional classroom teaching provides structured learning, but it may not always meet the individual needs of every student. In this context, artificial intelligence has become an innovative solution that enhances language learning and exam preparation.

Artificial intelligence refers to computer systems that can analyze data, learn from user input, and provide intelligent responses. In language education, AI is integrated into

online platforms, mobile applications, grammar correction tools, and speech recognition systems.

One of the most important benefits of AI is personalized learning. Each student has different strengths and weaknesses. Some may struggle with grammar rules, while others may have difficulty with pronunciation or vocabulary. AI systems can analyze students' performance and automatically generate exercises based on their specific needs. This targeted approach helps learners focus on areas that require improvement.

AI also supports self-paced learning. Students can practice anytime and anywhere, which increases flexibility and independence. This is especially useful for exam preparation, where consistent practice is necessary.

Writing tasks in CEFR exams require students to organize their ideas clearly, use appropriate vocabulary, and apply correct grammar structures. Many students find writing challenging because they are unsure about their mistakes.

AI writing tools provide immediate feedback on spelling, grammar, punctuation, and sentence structure. Some advanced systems also evaluate coherence and suggest improvements in style and vocabulary. When students receive instant corrections, they can revise their texts multiple times and learn from their errors.

However, while AI can correct technical mistakes, teachers play a crucial role in developing students' critical thinking, creativity, and logical organization of ideas. Therefore, Council of Europe. (2001). Common European Framework of Reference for Languages: Learning, Teaching, Assessment. Cambridge: Cambridge University Press.

Speaking is often stressful for students because it requires spontaneous communication. AI-based speech recognition tools allow learners to practice pronunciation, fluency, and intonation in a low-pressure environment. These systems compare students' speech with standard pronunciation models and provide corrective feedback. Regular practice builds confidence and reduces exam anxiety.

Listening skills can also be strengthened through AI platforms. Adaptive systems adjust the difficulty of audio materials according to students' performance. For example, if a learner struggles with fast speech, the system may provide slower recordings or additional practice tasks. Some programs include transcripts and vocabulary explanations, which improve comprehension and help students prepare more effectively for listening exams.

Another important advantage of AI is data-driven assessment. AI systems collect information about students' progress and generate detailed performance reports. Teachers can use this data to identify common problems and adjust teaching strategies.

In addition, many AI platforms include gamification elements such as points, levels, and achievement badges. These features increase student motivation and engagement. When students can clearly see their progress, they are more likely to stay committed to their learning goals.

Despite its many advantages, the use of AI in language education also presents challenges. Not all students have equal access to digital devices or stable internet connections. Technical issues may also interrupt the learning process.

Another concern is over-reliance on technology. Language learning is a social process that requires interaction, communication, and cultural understanding. AI cannot fully replace real-life conversations with teachers and classmates. Furthermore, data privacy and ethical use of student information must be carefully considered.

Conclusion

Artificial intelligence has become a powerful tool in preparing students for CEFR exams. It supports personalized learning, provides instant feedback, and helps develop reading, writing, listening, and speaking skills. AI also enables progress tracking and increases student motivation.

However, the most effective results are achieved when AI is combined with professional teacher guidance and active classroom interaction. By integrating technology responsibly and thoughtfully, educational institutions can improve students' language proficiency and help them succeed in CEFR exam.

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CLINICAL AND LABORATORY DIAGNOSTIC METHODS AND EVALUATION OF TREATMENT EFFECTIVENESS IN NONSPECIFIC CERVICITIS

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Abstract

Nonspecific cervicitis is one of the most common inflammatory pathologies of the cervix in women of reproductive age and represents a serious issue in modern gynecology. Timely diagnosis of the disease and assessment of the effectiveness of therapy are essential for preventing chronic inflammation and complications of the reproductive system.

This study examines modern clinical and laboratory methods for diagnosing nonspecific cervicitis, including microbiological, cytological, colposcopic, and immunological research methods. Particular attention is paid to evaluating the effectiveness of комплекс treatment based on clinical manifestations, laboratory indicators, and the dynamics of the inflammatory process.

The obtained data indicate the necessity of a comprehensive diagnostic approach and the individualization of treatment strategies in order to improve therapeutic effectiveness and prevent disease recurrence.

Keywords: nonspecific cervicitis, clinical and laboratory diagnostics, cervix, microbiocenosis, colposcopy, cytology, inflammatory process, treatment effectiveness, PRP therapy, recurrence.

КЛИНИКО-ЛАБОРАТОРНЫЕ МЕТОДЫ ДИАГНОСТИКИ И ОЦЕНКА ЭФФЕКТИВНОСТИ ЛЕЧЕНИЯ НЕСПЕЦИФИЧЕСКОГО ЦЕРВИЦИТА

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Аннотация. Неспецифический цервицит является одной из наиболее распространённых воспалительных патологий шейки матки у женщин репродуктивного возраста и представляет серьёзную проблему современной гинекологии. Своевременная диагностика заболевания и оценка эффективности проводимой терапии имеют важное значение для предупреждения хронизации воспалительного процесса и развития осложнений репродуктивной системы. В работе рассмотрены современные клинико-лабораторные методы диагностики неспецифического цервицита, включая микробиологические, цитологические, кольпоскопические и иммунологические методы исследования. Особое внимание уделено оценке эффективности комплексного лечения с учётом клинических проявлений, лабораторных показателей и динамики воспалительного процесса. Полученные данные свидетельствуют о необходимости комплексного диагностического подхода и индивидуализации лечебной тактики для повышения эффективности терапии и профилактики рецидивов заболевания.

Ключевые слова: неспецифический цервицит, клинико-лабораторная диагностика, шейка матки, микробиоценоз, кольпоскопия, цитология, воспалительный процесс, эффективность лечения, PRP-терапия, рецидив.

Введение. Неспецифический цервицит относится к числу наиболее распространённых воспалительных заболеваний шейки матки у женщин репродуктивного возраста. Данная патология имеет важное клиническое значение, поскольку нередко протекает длительно, склонна к хронизации и может сопровождаться рецидивами. Воспалительный процесс в области шейки матки способен нарушать состояние местного иммунитета, микробиоценоза влагалища и цервикального канала, а также отрицательно влиять на репродуктивное здоровье женщины.

Особенностью неспецифического цервицита является то, что его клинические проявления не всегда бывают выраженными. У части пациенток заболевание может проявляться патологическими выделениями, дискомфортом, жжением, болевыми ощущениями или контактной кровоточивостью, однако в ряде случаев воспалительный процесс выявляется только при гинекологическом осмотре, цитологическом исследовании или кольпоскопии. Это затрудняет своевременную диагностику и повышает риск перехода заболевания в хроническую форму.

В связи с этим большое значение имеет комплексное клинико-лабораторное обследование пациенток. Только сочетание клинической оценки, микробиологического исследования, цитологического анализа и расширенной кольпоскопии позволяет объективно определить выраженность воспалительного процесса, состояние эпителия шейки матки и характер нарушений микробиоценоза. Такой подход необходим не только для постановки диагноза, но и для правильной оценки эффективности проводимого лечения.

Оценка результатов терапии при неспецифическом цервиците должна основываться не только на исчезновении жалоб, но и на лабораторно-инструментальных показателях. Важными критериями являются уменьшение

воспалительных изменений, восстановление нормальной цитологической картины, улучшение кольпоскопических данных, нормализация микрофлоры и снижение частоты рецидивов. Поэтому изучение клинико-лабораторных методов диагностики и их значения в оценке эффективности лечения является актуальным направлением современной гинекологии.

Цель исследования — изучить значение клинико-лабораторных методов диагностики неспецифического цервицита у женщин репродуктивного возраста и оценить их роль в определении эффективности проводимого лечения.

Исследование направлено на анализ клинических проявлений заболевания, результатов гинекологического осмотра, микробиологического состояния влагалища и цервикального канала, цитологической картины эпителия шейки матки, а также данных расширенной кольпоскопии. Особое внимание уделяется определению диагностических критериев, позволяющих объективно оценить выраженность воспалительного процесса, динамику восстановления тканей шейки матки после лечения и риск повторного развития заболевания.

Материалы и методы. В исследовании проведён анализ клинико-лабораторных показателей у женщин репродуктивного возраста с неспецифическим цервицитом. Комплексное обследование пациенток включало сбор жалоб и анамнеза, гинекологический осмотр, оценку клинических проявлений воспалительного процесса, а также проведение лабораторных и инструментальных методов диагностики.

Для оценки состояния шейки матки использовались микробиологическое исследование содержимого влагалища и цервикального канала, цитологический анализ мазков, расширенная кольпоскопия и бактериоскопические методы исследования. Особое внимание уделялось определению характера микрофлоры,

степени выраженности воспалительных изменений, состоянию эпителиального слоя и наличию признаков хронического воспалительного процесса.

Эффективность проводимого лечения оценивалась в динамике на основании клинических симптомов, данных гинекологического осмотра, результатов лабораторных исследований и кольпоскопической картины. При этом анализировались показатели уменьшения воспалительных изменений, восстановления нормального микробиоценоза, улучшения цитологических характеристик и снижения частоты рецидивов заболевания.

Для обработки и анализа полученных данных использовались методы сравнительного и клинического анализа, что позволило объективно оценить диагностическую значимость клинико-лабораторных методов исследования и эффективность применяемой терапии у пациенток с неспецифическим цервицитом.

Результаты и обсуждение. Проведённый анализ показал, что клинико-лабораторная диагностика имеет важное значение в выявлении неспецифического цервицита и оценке степени выраженности воспалительного процесса. Только клинических жалоб и визуального осмотра недостаточно для полной оценки состояния пациентки, поскольку заболевание нередко протекает малосимптомно или имеет признаки, сходные с другими воспалительными процессами женской репродуктивной системы.

Микробиологическое исследование позволяет определить состояние микробиоценоза влагалища и цервикального канала, выявить нарушение баланса условно-патогенной микрофлоры и оценить степень воспалительных изменений. Цитологическое исследование даёт возможность определить состояние эпителия шейки матки, наличие воспалительно-реактивных изменений и динамику восстановления клеточной структуры после лечения.

Расширенная кольпоскопия является важным инструментальным методом, позволяющим визуально оценить состояние слизистой оболочки шейки матки, выраженность гиперемии, отёка, сосудистого рисунка и процессов эпителизации. В динамике лечения данные кольпоскопии позволяют объективно определить степень восстановления тканей и эффективность применяемой терапии.

Комплексная оценка клинических симптомов, лабораторных данных, цитологической и кольпоскопической картины позволяет более точно определить результативность лечения неспецифического цервицита. Такой подход способствует своевременному выявлению остаточных воспалительных изменений, снижению риска хронизации заболевания и профилактике рецидивов.

Заключение. Таким образом, клинико-лабораторные методы диагностики имеют важное значение в выявлении неспецифического цервицита и объективной оценке эффективности его лечения. Комплексное использование клинического осмотра, микробиологического исследования, цитологического анализа и расширенной кольпоскопии позволяет более точно определить характер воспалительного процесса, степень поражения эпителия шейки матки и состояние микробиоценоза.

Оценка эффективности лечения должна проводиться не только по уменьшению жалоб, но и по динамике лабораторных и инструментальных показателей. Такой подход позволяет своевременно выявлять остаточные воспалительные изменения, контролировать восстановление эпителия, снижать риск хронизации и предупреждать рецидивы заболевания. Следовательно, комплексная клинико-лабораторная диагностика является необходимым условием повышения качества лечения пациенток с неспецифическим цервицитом.

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PATHOGENETIC SIGNIFICANCE OF SELENIUM AND HEPCIDIN IN PREMATURE RUPTURE OF MEMBRANES

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Abstract

Premature rupture of membranes is one of the most urgent obstetric problems associated with increased perinatal morbidity and mortality. In recent years, special attention has been paid to the role of oxidative stress, inflammatory processes, and disorders of iron metabolism in the development of this pathology. This study investigated the pathogenetic significance of selenium and hepcidin in premature rupture of membranes. During the research, changes in selenium and hepcidin levels in pregnant women, as well as their relationship with inflammatory processes and oxidative stress, were analyzed. It was determined that selenium deficiency leads to a decrease in antioxidant defense, while alterations in hepcidin levels contribute to disturbances in iron metabolism and inflammatory reactions. These conditions weaken the structural stability of the fetal membranes and increase the risk of their premature rupture. The obtained results demonstrate the potential use of selenium and hepcidin as important biomarkers for the early diagnosis and prediction of premature rupture of membranes.

Keywords

premature rupture of membranes, selenium, hepcidin, oxidative stress, iron metabolism, inflammatory process, intra-amniotic infection, antioxidant defense, biomarkers, prognostic criteria.

HOMILA PARDALARINING MUDDATIDAN OLDIN YORILISHIDA SELEN VA GEPSIDINNING PATOGENETIK AHAMIYATI

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Annotatsiya. Homila pardalarining muddatidan oldin yorilishi perinatal kasallanish va o‘lim ko‘rsatkichlariga olib keluvchi dolzarb akusherlik muammolaridan biri hisoblanadi. So‘nggi yillarda ushbu patologiyaning rivojlanishida oksidativ stress, yallig‘lanish jarayonlari va temir almashinuvi buzilishlarining ahamiyatiga alohida e’tibor qaratilmoqda. Mazkur ishda homila pardalarining muddatidan oldin yorilishida selen va gepsidinning patogenetik ahamiyati o‘rganildi. Tadqiqot davomida homilador ayollarda selen va gepsidin miqdorining o‘zgarishi, ularning yallig‘lanish jarayonlari hamda oksidativ stress bilan bog‘liqligi tahlil qilindi. Aniqlanishicha, selen yetishmovchiligi antioksidant himoyaning pasayishiga, gepsidin darajasidagi o‘zgarishlar esa temir almashinuvi va yallig‘lanish reaksiyalarining buzilishiga olib keladi. Ushbu holatlar homila pardalarining strukturaviy barqarorligini susaytirib, ularning muddatidan oldin yorilish xavfini oshiradi. Olingan natijalar selen va gepsidinni homila pardalarining muddatidan oldin yorilishini erta aniqlash hamda prognozlashda muhim biomarker sifatida qo‘llash imkoniyatini ko‘rsatadi.

Kalit so‘zlar. homila pardalarining muddatidan oldin yorilishi, selen, gepsidin, oksidativ stress, temir almashinuvi, yallig‘lanish jarayoni, intraamniotik infeksiya, antioksidant himoya, biomarkerlar, prognostik mezonlar.

Kirish. Homila pardalarining muddatidan oldin yorilishi akusherlik amaliyotidagi dolzarb muammolardan biri bo‘lib, muddatidan oldin tug‘ruqlar, neonatal infeksiyalar, respirator distress sindrom va perinatal o‘limning asosiy sabablaridan hisoblanadi.

Ushbu patologiya homiladorlikning 37-haftasigacha homila pardalarining tug‘ruq faoliyati boshlanishidan oldin yorilishi bilan xarakterlanadi va perinatal asoratlar rivojlanish xavfini sezilarli darajada oshiradi.

So‘nggi yillarda homila pardalarining muddatidan oldin yorilishining rivojlanish mexanizmlarini o‘rganishga alohida e’tibor qaratilmoqda. Zamonaviy ilmiy ma’lumotlarga ko‘ra, ushbu patologiyaning patogenezida yallig‘lanish jarayonlari, intraamniotik infeksiya, oksidativ stress va temir almashinuvi buzilishlari muhim o‘rin tutadi. Ayniqsa, antioksidant tizim faoliyatining pasayishi hamda temir metabolizmini boshqaruvchi biologik faol moddalarning o‘zgarishi homila pardalarining strukturaviy barqarorligiga salbiy ta’sir ko‘rsatadi.

Selen organizmning antioksidant himoya tizimida muhim rol o‘ynovchi mikroelementlardan biri hisoblanadi. U glutation peroksidaza fermenti tarkibiga kirib, erkin radikal jarayonlarni cheklaydi va hujayra membranalarini oksidativ shikastlanishdan himoya qiladi. Selen yetishmovchiligi oksidativ stressning kuchayishiga, kollagen tuzilmasining buzilishiga va homila pardalarining mustahkamligi pasayishiga olib kelishi mumkin.

Gepsidin esa temir almashinuvini boshqaruvchi asosiy gormonlardan biri bo‘lib, yallig‘lanish jarayonlari va immun javob bilan chambarchas bog‘liqdir. Gepsidin darajasining o‘zgarishi temir homeostazining buzilishiga, mikroorganizmlar faolligining ortishiga va yallig‘lanish reaksiyalarining kuchayishiga sabab bo‘lishi mumkin. Shu jihatdan gepsidin homila pardalarining muddatidan oldin yorilishi rivojlanishida potensial patogenetik biomarker sifatida qaralmoqda.

Shu sababli homila pardalarining muddatidan oldin yorilishida selen va gepsidinning patogenetik ahamiyatini o‘rganish kasallik rivojlanish mexanizmlarini chuqurroq tushunish, erta diagnostika imkoniyatlarini kengaytirish hamda prognostik mezonlarni ishlab chiqishda muhim ilmiy-amaliy ahamiyatga ega.

Tadqiqot maqsadi. Homila pardalarining muddatidan oldin yorilishida selen va gepsidinning patogenetik ahamiyatini o‘rganish hamda ularning oksidativ stress, yallig‘lanish jarayonlari va temir almashinuvi bilan bog‘liqligini aniqlashdan iborat.

Tadqiqot davomida homila pardalarining muddatidan oldin yorilishi bilan kasallangan homilador ayollarda selen va gepsidin darajasidagi o‘zgarishlarni baholash, ushbu ko‘rsatkichlarning patologik jarayon og‘irligi bilan o‘zaro bog‘liqligini aniqlash hamda ularning diagnostik va prognostik ahamiyatini tahlil qilish rejalashtirilgan.

Materiallar va usullar. Tadqiqot Toshkent davlat tibbiyot universiteti ko‘p tarmoqli klinikasining akusherlik kompleksida olib borildi. Tadqiqotga homila pardalarining muddatidan oldin yorilishi tashxisi qo‘yilgan homilador ayollar jalb qilindi. Nazorat guruhi sifatida fiziologik kechayotgan homiladorlikka ega bo‘lgan sog‘lom ayollar tanlab olindi. Tadqiqot davomida barcha ishtirokchilardan yozma ravishda rozilik olindi va tekshiruvlar bioetika tamoyillariga muvofiq amalga oshirildi.

Barcha homilador ayollarda klinik-anamnestik ma’lumotlar batafsil o‘rganildi. Homiladorlikning kechishi, ekstragenital kasalliklar, avvalgi homiladorlik va tug‘ruqlar tarixi, yallig‘lanish kasalliklari, reproduktiv yo‘llar infeksiyalari hamda akusherlik asoratlari tahlil qilindi. Shuningdek, homila pardalarining muddatidan oldin yorilishi bilan bog‘liq xavf omillari baholandi.

Laborator tekshiruvlar davomida venoz qon namunalarida selen va gepsidin darajasi aniqlandi. Gepsidin miqdori immunoferment analiz usuli yordamida, selen ko‘rsatkichi esa biokimyoviy tekshiruv metodlari asosida baholandi. Olingan natijalar homiladorlik fiziologik kechayotgan ayollardagi ko‘rsatkichlar bilan taqqoslandi.

Bundan tashqari, tadqiqot davomida oksidativ stress holatini baholash maqsadida lipidlarning peroksid oksidlanish ko‘rsatkichlari va antioksidant himoya tizimi faoliyati o‘rganildi. Yallig‘lanish jarayonining faolligini aniqlash uchun umumiy laborator tekshiruvlar, jumladan qonning klinik tahlili va yallig‘lanish markerlari ham baholandi.

Olingan natijalar statistik jihatdan qayta ishlanib, guruhlar o‘rtasidagi farqlar ishonchlilik darajasi bilan tahlil qilindi. Statistik hisoblashlarda variatsion statistika usullaridan foydalanildi va $p<0,05$ ko‘rsatkichi statistik ahamiyatli deb qabul qilindi.

Natijalar va muhokama. Tadqiqot natijalari homila pardalarining muddatidan oldin yorilishi bilan kasallangan homilador ayollarda selen va gepsidin ko‘rsatkichlarining sezilarli darajada o‘zgarganligini ko‘rsatdi. Asosiy guruhdagi bemorlarda selen miqdorining pasayishi kuzatilib, bu antioksidant himoya tizimi faoliyatining susayganligidan dalolat berdi. Shu bilan birga, gepsidin darajasidagi o‘zgarishlar temir almashinuvi buzilishi va yallig‘lanish reaksiyalarining kuchayishi bilan bog‘liq ekanligi aniqlandi.

Aniqlanishicha, selen yetishmovchiligi oksidativ stressning kuchayishiga olib kelib, hujayra membranalari va homila pardalari kollagen tuzilmasining shikastlanishiga sabab bo‘ladi. Natijada homila pardalarining mexanik mustahkamligi pasayib, ularning muddatidan oldin yorilish xavfi ortadi. Tadqiqot davomida oksidativ stress markerlarining yuqori ko‘rsatkichlari selen miqdorining pastligi bilan o‘zaro bog‘liqligi kuzatildi.

Gepsidin darajasidagi o‘zgarishlar esa organizmda yallig‘lanish jarayonining faollashgani va temir homeostazining buzilganligini ko‘rsatdi. Gepsidin temir almashinuvini nazorat qiluvchi muhim gormon sifatida mikroorganizmlarning ko‘payishi va yallig‘lanish reaksiyalariga ta’sir ko‘rsatadi. Tadqiqot natijalari gepsidin ko‘rsatkichlarining o‘zgarishi intraamniotik infeksiya va homila pardalarining strukturaviy shikastlanishi bilan bog‘liqligini ko‘rsatdi.

Olingan ma’lumotlar shuni tasdiqlaydiki, selen va gepsidin homila pardalarining muddatidan oldin yorilishining muhim patogenetik omillari hisoblanadi. Ushbu biomarkerlarni kompleks baholash patologiyani erta aniqlash, xavf guruhlarini shakllantirish hamda homiladorlikni individual nazorat qilish imkonini beradi.

Shuningdek, selen va gepsidin ko‘rsatkichlarini monitoring qilish perinatal asoratlarni kamaytirish va homiladorlik natijalarini yaxshilashda muhim ahamiyat kasb etadi.

Xulosa. O‘tkazilgan tadqiqot natijalari homila pardalarining muddatidan oldin yorilishi rivojlanishida selen va gepsidinning muhim patogenetik ahamiyatga ega ekanligini ko‘rsatdi. Aniqlanishicha, homilador ayollarda selen miqdorining pasayishi antioksidant himoya tizimi faoliyatining susayishiga, erkin radikal jarayonlarning kuchayishiga hamda oksidativ stress rivojlanishiga olib keladi. Natijada hujayra membranalari, kollagen tolalari va homila pardalarining strukturaviy yaxlitligi shikastlanib, ularning mexanik mustahkamligi pasayadi.

Shuningdek, gepsidin darajasidagi o‘zgarishlar temir almashinuvining buzilishi va yallig‘lanish reaksiyalarining faollashuvi bilan bog‘liq ekanligi aniqlandi. Gepsidin temir homeostazini boshqaruvchi asosiy biologik faol moddalardan biri sifatida intraamniotik infeksiya, immun javob va yallig‘lanish jarayonlariga ta’sir ko‘rsatadi. Uning miqdoridagi o‘zgarishlar homila pardalarining muddatidan oldin yorilishida patogenetik mexanizmlarning faollashuvi bilan chambarchas bog‘liq bo‘lib, kasallikning rivojlanish xavfini oshiradi.

Tadqiqot davomida selen va gepsidin ko‘rsatkichlari bilan oksidativ stress hamda yallig‘lanish markerlari o‘rtasida o‘zaro bog‘liqlik mavjudligi kuzatildi. Bu esa ushbu biomarkerlarning homila pardalarining muddatidan oldin yorilishida nafaqat patogenetik, balki diagnostik va prognostik ahamiyatga ham ega ekanligini ko‘rsatadi. Ayniqsa, xavf guruhidagi homilador ayollarda selen va gepsidin darajasini monitoring qilish patologiyani erta aniqlash va asoratlar rivojlanishining oldini olish imkonini beradi.

Olingan natijalar homila pardalarining muddatidan oldin yorilishi rivojlanish mexanizmlarini chuqurroq tushunishga xizmat qiladi hamda ushbu patologiyani erta prognozlash uchun yangi yondashuvlarni ishlab chiqishga ilmiy asos bo‘lib xizmat

qiladi. Bundan tashqari, selen va gepsidin ko‘rsatkichlarini kompleks baholash homiladorlikni individual nazorat qilish, xavf guruhlarini shakllantirish va perinatal natijalarni yaxshilashda muhim amaliy ahamiyat kasb etadi.

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STRUCTURAL EQUIVALENCE IN ENGLISH–UZBEK JOURNALISTIC TRANSLATION: LEXICAL, SYNTACTIC AND SEMANTIC ANALYSIS

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Abstract: This article analyzes structural equivalence between English and Uzbek journalistic texts at lexical, syntactic, and semantic levels. Challenges of maintaining structural balance in media translation are highlighted through specific comparative examples and comprehensive analytical tables.

Keywords: structural equivalence, journalistic style, lexical analysis, syntactic transformation, semantic congruence, media discourse, translation strategies, grammatical shifts.

Аннотация: В данной статье анализируется структурная эквивалентность между английским и узбекским языками в публицистических текстах на лексическом, синтаксическом и семантическом уровнях. Проблемы сохранения структурного баланса в переводе освещены с помощью конкретных примеров и таблиц.

Ключевые слова: структурная эквивалентность, публицистический стиль, лексический анализ, синтаксическая трансформация, семантическое соответствие, информационная трансформация, стратегии перевода.

Annotatsiya: Ushbu maqolada ingliz va o‘zbek tillari o‘rtasidagi jurnalistik matnlarning tarkibiy ekvivalentligi leksik, sintaktik va semantik darajalarda tahlil qilinadi. Tarjimada strukturaviy muvozanatni saqlash muammolari aniq misollar va jadvallar yordamida yoritib berilgan.

Kalit so‘zlar: strukturaviy ekvivalentlik, jurnalistik uslub, leksik tahlil, sintaktik transformatsiya, semantik muvofiqlik, axborot transformatsiyasi, tarjima strategiyalari.

INTRODUCTION

In the contemporary era of globalized mass communication, journalistic translation occupies a pivotal position in shaping public discourse, cross-cultural perceptions, and international information exchange. The rapid dissemination of news requires high fidelity, speed, and linguistic precision, making the concept of translation equivalence a central focus of modern translatology. Journalistic texts possess distinct stylistic features, such as dense informational structures, headlines designed for psychological impact, extensive use of political idioms, and syntactically complex sentences.

When translating these texts from English, an analytic language with fixed word order, into Uzbek, a synthetic, agglutinative language with a predominantly subject-object-verb (SOV) structure, achieving absolute structural equivalence becomes a sophisticated challenge. Structural equivalence does not merely entail word-for-word substitution; rather, it demands a systematic harmonization of lexical units, syntactic configurations, and semantic parameters to ensure that the target text functions in the same manner as the source text.

The primary objective of this article is to examine the multidimensional nature of structural equivalence within English-Uzbek journalistic translation, identifying the core discrepancies and evaluating the translational strategies employed to bridge these linguistic gaps.

LITERATURE REVIEW AND METHODOLOGY

The theoretical foundations of structural and dynamic equivalence have been extensively discussed in classical and contemporary translation studies. Eugene Nida initially demarcated the boundaries between formal equivalence, which focuses on the message form and content, and dynamic equivalence, which prioritizes the equivalent

effect on the target audience [1, B. 12]. In the context of linguistic typology, Mona Baker emphasized that grammatical structures across languages often impose specific constraints on translators, necessitating structural shifts to avoid artificiality in the target text [2, B. 84].

Furthermore, within the specific domain of Uzbek translatology, scholars like G‘aybulla Salomov have noted that translation between non-cognate languages, such as Germanic and Turkic, requires deep structural transformations because a literal rendering often disrupts the communicative value and stylistic norms of the recipient language [3, B. 45].

The methodology of this research is grounded in a comparative-typological and contrastive linguistic approach. A corpus of 100 journalistic articles from prominent English media outlets (e.g., *The Guardian*, *The New York Times*, *Reuters*) published between 2024 and 2026, along with their professional translations in Uzbek digital media (e.g., *Kun.uz*, *Daryo.uz*), was compiled and qualitatively analyzed.

The analytical framework categorizes translation phenomena into lexical adaptations, syntactic shifts (such as passive-to-active voice transformations and clause rearrangements), and semantic alignment techniques. Statistical quantification was applied to determine the frequency and success rates of specific structural adjustment patterns.

DISCUSSION AND RESULTS

The empirical analysis reveals that achieving structural equivalence requires comprehensive adjustments across all three designated linguistic strata. At the lexical level, English journalistic prose frequently employs compressed nominal clusters and neologisms that do not possess direct structural counterparts in Uzbek. Consequently, descriptive translation or lexical transposition must be deployed. For instance, the English journalistic phrase *"sustainability-oriented policy"* cannot be translated using a

single parallel compound modifier in Uzbek; instead, it undergoes a structural extension into an analytical construction: *"barqarorlikni ta'minlashga qaratilgan siyosat"*.[4, B. 12]

Syntactically, the divergence between English and Uzbek is particularly pronounced in the positioning of subordinate clauses and the usage of the passive voice. English media relies heavily on passive structures to maintain objectivity or conceal the agent of an action. In contrast, Uzbek journalistic style favors active constructions, transforming the grammatical subject and moving the predicate strictly to the absolute end of the sentence.

To illustrate these transformations systematically, Table 1 displays quantitative data regarding the frequency of specific structural adjustments observed within our analyzed corpus of 100 media texts.

Table 1. Frequency and Distribution of Structural Transformations

Transformation Category	Specific Linguistic Operation	Frequency of Occurrence (%)	Primary Structural Driver
Syntactic	Passive to Active Voice Conversion	42%	Typological avoidance of passive agents in Uzbek
Syntactic	Clause Rearrangement (SVO to SOV)	35%	Strict final-predicate rule in Uzbek grammar
Lexical	Nominal Cluster Expansion	13%	Lack of synthetic compound adjectives in Uzbek

Transformation Category	Specific Linguistic Operation	Frequency of Occurrence (%)	Primary Structural Driver
Semantic	Idiomatic and Metaphorical Modulation	10%	Cultural and stylistic contextualization

Furthermore, the structural shifts can be analyzed qualitatively through explicit textual examples. Table 2 contrasts the source English journalistic sentences with their translated Uzbek equivalents, explicitly defining the exact nature of the structural and semantic realignments performed. [5, B. 113]

Table 2. Comparative Linguistic Analysis of English-Uzbek Journalistic Transpositions

Source Text (English)	Target Text (Uzbek)	Level of Analysis	Typological and Structural Explanation
"The bill was fiercely debated by lawmakers for hours."	"Deputatlar qonun loyihasini bir necha soat davomida qizg‘in muhokama qildilar."	Syntactic & Semantic	The English passive construction is transformed into an Uzbek active voice layout. The agent (*lawmakers / deputatlar*) is shifted to the initial subject position, conforming to standard Uzbek journalistic syntax.
"A consensus-building approach is required to	"Mavjud inqirozni bartaraf etish uchun o‘zaro kelishuvga erishishga	Lexical & Syntactic	The pre-nominal compound modifier *“consensus-building”* is expanded into a post-

Source Text (English)	Target Text (Uzbek)	Level of Analysis	Typological and Structural Explanation
resolve the ongoing crisis."	qaratilgan yondashuv talab etiladi."		positional relative clause construction (*o'zaro kelishuvga erishishga qaratilgan*) to preserve the core semantic value.
"The government faced back-to-back challenges in implementing the reform."	"Hukumat islohotni amalga oshirishda ketma-ket qiyinchiliklarga duch keldi."	Semantic & Lexical	The idiomatic compound adverb *"back-to-back"* is structurally integrated as a quantitative modifier (*ketma-ket*) modifying the central direct object (*qiyinchiliklarga*).

The data implies that semantic equivalence is deeply contingent upon syntactic reorganization. If a translator attempts to maintain structural parallelism by preserving the English SVO (Subject-Verb-Object) sequence in Uzbek, the resulting text suffers from severe syntactic interference, rendering the journalistic report unnatural, ambiguous, and difficult for the target audience to digest. [6, B.98]

CONCLUSION

This comprehensive research underscores that structural equivalence in English–Uzbek journalistic translation is an intricate, non-linear process that demands absolute flexibility across lexical, syntactic, and semantic levels. The typological divergence between the analytical nature of English and the agglutinative parameter of Uzbek makes literal or formal syntax replication completely unviable in high-quality media discourse.

The study demonstrated that over 40% of journalistic sentences undergo passive-to-active voice modifications, and nominal clusters systematically require analytical expansion to preserve informational accuracy.

Ultimately, structural equivalence is achieved not by preserving the physical grammatical form of the source text, but by reconstructing the message using the natural, stylistically appropriate structural templates of the Uzbek language.

Translators working within contemporary digital journalism must be trained to recognize these systemic divergences, prioritizing dynamic structural transformations to deliver clear, precise, and culturally fluent news to the domestic audience.

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EASTERN THEMES IN WESTERN LITERATURE AND CULTURE

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Annotation

This thesis explores the representation of Eastern motifs in the works of Western writers through the theoretical framework of Orientalism by Edward Said. The study examines how Western authors portrayed Eastern culture, traditions, religion, and identity in different literary periods. It analyzes the relationship between the East and the West in literature and investigates how Orientalist discourse influenced Western perceptions of Eastern societies. The research focuses on selected literary works in which Eastern themes, symbols, and cultural images are reflected. Particular attention is given to stereotypes, exoticism, and the construction of the "Orient" as represented in Western literature. The thesis also discusses the ideological and cultural implications of these portrayals and evaluates whether they contribute to cultural understanding or reinforce biased perspectives. Using comparative and qualitative research methods, the study reveals that Eastern motifs often served as artistic and ideological tools in Western literary traditions. The findings demonstrate that while some writers presented the East with admiration and curiosity, others reproduced colonial and stereotypical narratives. The research contributes to literary and cultural studies by providing a deeper understanding of Orientalism and intercultural representation in literature.

Key words

Orientalism, Eastern motifs, Western literature, cultural representation, Edward Said, East and West, Oriental discourse, stereotypes, intercultural communication, literary analysis, identity, exoticism, colonialism.

The interaction between Eastern and Western cultures has long been an important subject in world literature. Western writers have frequently used Eastern motifs, themes, and cultural symbols in their literary works to express philosophical ideas, create exotic settings, or explore cultural differences. These representations played a significant role in shaping Western readers' understanding of the East.

One of the most influential theoretical approaches to this issue is presented in Orientalism, where Edward Said explains how the West historically constructed an image of the East based on political, cultural, and colonial interests. According to Said, Orientalism is not only a literary style but also a system of thought that often presents Eastern societies as mysterious, undeveloped, or exotic in comparison with the West. This thesis investigates how Eastern motifs are reflected in the works of Western writers and how these representations relate to Orientalist discourse. The study aims to analyze literary texts that include Eastern cultural elements and to identify the ways in which authors interpreted Eastern identity, traditions, and spirituality. The research also seeks to determine whether these portrayals promote intercultural understanding or reinforce stereotypes about the East.

The relevance of this topic lies in the growing importance of intercultural dialogue and cultural awareness in modern literary studies. By examining Eastern motifs in Western literature, the thesis contributes to a better understanding of cultural interaction, representation, and ideological influence in literary works.

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INNOVATIVE DEVELOPMENT OF MOBILE BANKING SERVICES IN UZBEKISTAN: STATE, CHALLENGES AND PROSPECTS.

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ANNOTATION

This thesis scientifically analyzes the current state, key indicators, existing problems, and future prospects of mobile banking services in Uzbekistan during 2022–2026. Based on the latest statistical data for 2025–2026, the level of public usage of mobile banking services and the factors limiting their development have been identified. Practical recommendations for eliminating these problems have also been developed.

Keywords: mobile banking, digital banking, fintech, financial inclusion, Click, Payme, Uzum Bank, Open Banking

O'ZBEKISTONDA MOBIL BANKING XIZMATLARINING INNOVATSION RIVOJLANISHI: HOLATI, MUAMMOLAR VA ISTIQBOLLAR.

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ANNOTATSIYA

Ushbu tezisda O'zbekistonda mobil banking xizmatlarining 2022–2026-yillardagi rivojlanish holati, asosiy ko'rsatkichlari, mavjud muammolar va istiqbollar ilmiy tahlil qilinadi. 2025–2026-yilgi so'nggi statistik ma'lumotlar asosida aholining mobil banking xizmatlaridan foydalanish darajasi va cheklovchi omillar aniqlangan. Muammolarni bartaraf etish bo'yicha amaliy tavsiyalar ishlab chiqilgan.

Kalit so'zlar: mobil banking, raqamli bank, fintech, moliyaviy inklyuziya, Click, Payme, Uzum Bank, Open Banking.

АННОТАЦИЯ

В данной тезисной работе проведён научный анализ состояния развития услуг мобильного банкинга в Узбекистане в 2022–2026 годах, их основных показателей, существующих проблем и перспектив развития. На основе последних статистических данных за 2025–2026 годы определены уровень использования населением услуг мобильного банкинга, а также факторы, ограничивающие их развитие. Разработаны практические рекомендации по устранению существующих проблем.

Ключевые слова: мобильный банкинг, цифровой банк, финтех, финансовая инклюзия, Click, Payme, Uzum Bank, Open Banking

1. KIRISH

O'zbekistonda 2017-yildan boshlab amalga oshirilayotgan iqtisodiy islohotlar doirasida bank sektorini raqamlashtirish ustuvor yo'nalish sifatida belgilangan. 2025-yilning I-chorak ma'lumotlariga ko'ra, Click platformasi foydalanuvchilari soni 20 milliondan oshdi — bu O'zbekiston balog'atga yetgan aholisining 90 foizidan ko'prog'ini tashkil etadi. [1] 2026-yil 1-apreldan Prezidentning 2025-yil 10-dekabrdagi farmoni asosida uy-joy va avtomobil xaridi faqat naqd pulsiz shaklda amalga oshirilishi majburiy qilindi.[2]

Tadqiqot maqsadi — O'zbekistonda mobil banking xizmatlarining joriy holati va rivojlanish dinamikasini 2026-yilgi so'nggi ma'lumotlar asosida baholab, istiqbolli yo'nalishlarni belgilashdan iborat.

2. ADABIYOTLAR VA METODOLOGIYA

Tadqiqotda statistik tahlil (O’zbekiston Respublikasi Markaziy bank ma'lumotlari, 2022–2026), qiyosiy tahlil (Xitoy, Janubiy Koreya, Turkiya) va mantiqiy umumlashtirish metodlaridan foydalanildi. Gomber va boshqalar (2017), Demirguc-

[1] Spot.uz, 2025
[2] O'zbekiston Respublikasi Prezidentining 2025-yil 10-dekabrdagi Farmoni (naqdsiz hisob-kitoblar

Kunt va boshqalar (2018) kabi olimlar mobil banking moliyaviy inklyuziyaning eng samarali vositasi ekanligini isbotlagan. Axborot bazasi: cbu.uz, Jahon banki, IMF, Markaziy bank Telegram kanali (2026-yil I-chorak), spot.uz, gazeta.uz.

3. ASOSIY TAHLIL VA NATIJALAR

3.1. Rivojlanish dinamikasi (2022–2026)

2026-yil I-chorakda O’zbekiston Respublikasi Markaziy bank Kliring tizimi orqali 39,9 million ta to'lov amalga oshirildi — o'tgan yilga nisbatan 20,2 foizga ko'p; to'lovlar summasi 25,5 trln so'mdan 32,8 trln so'mga yetib, 28,7 foizga oshdi. Raqamli to'lovlar ulushi 2019-yildagi 15 foizdan 2026-yil boshiga kelib 75 foizdan oshdi. 2025-yilda naqd pullarning pul massasidagi (M2) ulushi 18,1 foizgacha pasaydi [3].

3.1-jadval. Asosiy ko'rsatkichlar dinamikasi (2022–2026)[4]

Ko'rsatkich	2022	2023	2024	2025	2026 (I-kv)
Faol foydalanuvchilar (mln)	7,2	10,8	15,4	20+	21+
Raqamli to'lovlar ulushi (%)	38%	51%	62%	72%	75%+
Mobil ilovali banklar soni	18	25	30+	35+	35+
Kliring tizimi to'lovlar (mln)	—	—	—	33,2	39,9
Kliring tizimi hajmi (trln so'm)	—	—	—	25,5	32,8

3.2. Yetakchi platformalar: Click, Payme va Uzum Bank

Click 2025-yil I-chorakda daromadini 29 foizga oshirib, Humo tizimidagi barcha tranzaksiyalarning 33 foizini qamrab oldi. Payme 2025-yil 30-mayda PCI DSS sertifikatini yangiladi va 2025-yil 2-iyuldan majburiy identifikatsiyani joriy qildi — buning sababi kiberjinoyatlarning keskin o'sishi: 5 yil ichida 68 barobar o'sib, 2024-

[3] Anhor.uz, 2026
[4] O'zbekiston Markaziy banki (cbu.uz), 2026; Spot.uz; Anhor.uz; muallif hisob-kitoblari.

yilda 603 mlrd so'mlik zarar yetkazildi. Uzum Bank 2026-yil I-chorakda Kliring tizimining eng faol ishtirokchilari qatoriga kirdi. 2026-yilda kartadan kartaga pul o'tkazish 7 ta to'lov xizmati va 28 ta bank orqali amalga oshirilmoqda [5].

3.3. Asosiy muammolar

– Kiberjinoyatlar — 5 yil ichida 68 barovarga o'sish; 2024-yilda 603 mlrd so'm o'g'irlangan;

– Raqamli savodxonlikning pastligi — aholining 30–35 foizi xizmatdan to'liq foydalana olmaydi;

– Internet infratuzilmasining notekisligi — qishloq hududlarda barqaror internet yetarli emas;

– Open Banking qonunchiligi — maxsus hujjat hali shakllanish bosqichida (35/14-son Nizom — muhim qadam);

– Komissiya notekisligi — platformalar o'rtasida 0,5% dan 1,99% gacha farq.

3.4. Xorijiy tajriba[6]

Mamlakat	Raqamli to'lovlar	Yetakchi platforma	Model
O'zbekiston	75%+ (2026)	Click, Payme, Uzum	Milliy platforma
Xitoy	87% (2023)	Alipay, WeChat Pay	Super-ilova
Janubiy Koreya	90%+ (2023)	KakaoBank, Toss	Neobank
Turkiya	82% (2023)	İşbank, Troya	Milliy karta

Manba: O'zbekiston MB (2026); PBoC (2023); KakaoBank AR (2023); İşbank AR (2023).

[5] Spot.uz, 2026

[6] KakaoBank. 2023 Annual Report. Seoul, 2024. People's Bank of China. China Financial Stability Report 2023. Beijing, 2023. Türkiye İş Bankası. 2023 Faaliyet Raporu. Istanbul, 2024.

Global miqyosda 2026-yilga kelib naqd pulsiz tranzaksiyalar 2 121,6 mlrdga yetishi kutilmoqda (ResearchGate, 2026). O'zbekiston ushbu tendensiyaga faol qo'shilmoqda.

4. XULOSALAR

1. Raqamli to'lovlar ulushi 2022-yildagi 38 foizdan 2026-yil boshida 75 foizdan oshdi; Kliring tizimi orqali to'lovlar I-chorakda 20,2 foizga o'sdi.
2. Click 20 mln+ foydalanuvchi bilan balog'atga yetgan aholining 90 foizini qamrab oldi.
3. Kiberjinoyatlar (68 barobar o'sish), raqamli savodxonlik va qonunchilik bo'shliqlari kompleks yechimni talab qiladi.
4. 2026-yil 1-aprildan yirik bitimlarning naqd pulsiz shaklga o'tishi raqamli to'lovlar ulushini yanada oshiradi.

5. ILMIY-AMALIY TAVSIYALAR

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2. Open Banking: 2026-yil davomida fintech sohasini tartibga soluvchi maxsus qonunchilik hujjati qabul qilish.
3. Raqamli savodxonlik: qishloq hududlarda MFY va bank filiallar orqali bepul o'quv dasturlari.
4. Moliyaviy inklyuziya: hisob raqami yo'q aholiga mo'ljallangan soddalashtirilgan e-wallet xizmatlarini rivojlantirish.
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MODERN CHALLENGES IN REGULATING CONSUMER RIGHTS WITHIN TOURISM SERVICES

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Annotation: This article examines modern challenges in regulating consumer rights within tourism services in the context of globalization and digitalization. The study analyzes key legal problems related to misleading advertising, unfair contractual terms, online tourism platforms, and consumer protection during emergency situations such as the COVID-19 pandemic. The article also considers international legal standards and proposes measures for improving legal regulation and strengthening consumer rights protection in the tourism sector.

Keywords: consumer rights, tourism services, legal regulation, consumer protection, tourism law, digital platforms, tourism contracts, international tourism, COVID-19 pandemic, dispute resolution.

TURIZM XIZMATLARI SOHASIDA ISTE'MOLCHILAR HUQUQLARINI TARTIBGA SOLISHNING ZAMONAVIY MUAMMOLARI

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Annotatsiya: Ushbu maqolada globallashuv va raqamlashtirish sharoitida turizm xizmatlari sohasida iste'molchilar huquqlarini tartibga solishning zamonaviy muammolari tahlil qilinadi. Tadqiqotda yolg'on reklama, adolatsiz shartnoma shartlari, onlayn turizm platformalari faoliyati hamda COVID-19 pandemiyasi kabi favqulodda

holatlarda iste'molchilar huquqlarini himoya qilish bilan bog'liq asosiy huquqiy muammolar ko'rib chiqilgan. Shuningdek, maqolada xalqaro huquqiy standartlar tahlil qilinib, turizm sohasida huquqiy tartibga solishni takomillashtirish va iste'molchilar huquqlarini yanada samarali himoya qilish bo'yicha takliflar ilgari surilgan.

Kalit so'zlar: iste'molchilar huquqlari, turizm xizmatlari, huquqiy tartibga solish, iste'molchilarni himoya qilish, turizm huquqi, raqamli platformalar, turizm shartnomalari, xalqaro turizm, COVID-19 pandemiyasi, nizolarni hal etish.

The tourism industry has become one of the fastest-growing sectors of the global economy. The development of international transportation, digital technologies, and online booking systems has significantly increased the number of people using tourism services. Tourism today is not only an important economic activity but also a sphere closely connected with the protection of human rights and consumer interests. In modern conditions, consumers actively use various tourism services, including transportation, accommodation, tour packages, insurance, entertainment, and online travel platforms. Therefore, ensuring effective legal regulation of consumer rights within tourism services has become one of the most important tasks of contemporary legal systems.

The growth of tourism activities has simultaneously led to an increase in legal disputes between consumers and tourism service providers. Tourists often face problems related to poor-quality services, misleading advertising, cancellation of tours, hidden costs, refusal to provide refunds, and insufficient information about travel conditions. In many cases, existing legal mechanisms fail to provide adequate protection for consumers, especially in cross-border tourism relations. Consequently, the issue of improving legal regulation in the tourism sector has gained considerable academic and practical significance.

This thesis analyzes the modern challenges of regulating consumer rights within tourism services, examines international legal approaches, and proposes possible directions for improving national legislation in this field.

Consumer rights in tourism services constitute a system of legal guarantees aimed at protecting individuals who purchase tourism products and services for personal purposes. These rights generally include the right to safety, the right to reliable information, the right to quality services, the right to compensation for damages, and the right to judicial protection.

Tourism services possess several distinctive characteristics that complicate their legal regulation. First, tourism services are usually comprehensive in nature, combining transportation, accommodation, excursions, insurance, and entertainment within a single contractual relationship. Second, tourism relations often involve foreign elements because tourists travel across borders and interact with foreign service providers. Third, the tourism industry is highly dependent on external factors such as political instability, natural disasters, pandemics, and transportation disruptions.

Due to these specific features, tourism services require special legal mechanisms capable of balancing the interests of consumers and business entities. Effective legal regulation must ensure transparency, fairness, accountability, and accessibility of tourism services while also promoting the sustainable development of the tourism industry.

One of the most significant problems in tourism services is misleading advertising and the lack of accurate information provided to consumers. Tourism companies and online booking platforms often exaggerate the quality of hotels, transportation services, or entertainment programs in order to attract customers. As a result, consumers may receive services that do not correspond to the advertised conditions.

The right to receive complete and accurate information is recognized as one of the fundamental principles of consumer protection. Consumers must be informed about all essential conditions of tourism services, including prices, accommodation standards, transportation details, cancellation policies, insurance coverage, and possible risks related to travel.

However, in practice, many tourism contracts contain unclear or ambiguous provisions that create legal uncertainty. Additional service charges, hidden payments, and restrictive refund policies are often disclosed only after the consumer has completed the booking process. Such practices violate the principles of transparency and good faith in contractual relations.

Moreover, aggressive digital marketing strategies used by online tourism platforms may manipulate consumer decisions. The use of false discounts, fake reviews, and time-limited offers may pressure consumers into making hasty purchasing decisions without fully understanding the contractual conditions.

Therefore, modern legal systems must strengthen requirements concerning transparency and disclosure obligations within tourism services.

Another important challenge involves the regulation of contractual relations between tourism service providers and consumers. Tourism contracts are typically standardized agreements prepared by businesses, leaving consumers with little or no opportunity to negotiate individual terms.

As a result, many tourism contracts contain unfair clauses that significantly limit consumer rights. For example, tourism companies may include provisions excluding liability for service failures, limiting compensation for damages, or allowing unilateral modifications to travel conditions without consumer consent.

Consumers often face difficulties when attempting to challenge such contractual terms, especially in situations involving international tourism relations. Determining the

applicable law and competent court jurisdiction may become a complicated legal issue because different countries may have conflicting legal rules governing tourism contracts.

Additionally, tourists frequently experience problems related to cancellations and refunds. In some cases, service providers refuse to return payments even when services cannot be delivered due to circumstances beyond the consumer's control. Such situations demonstrate the necessity of establishing stronger legal safeguards aimed at protecting consumers against unfair contractual practices.

The rapid digitalization of the tourism industry has fundamentally transformed tourism services and consumer relations. Today, millions of tourists use online booking platforms, mobile applications, and electronic payment systems to organize their travel activities.

Digital technologies provide significant advantages, including convenience, accessibility, and the ability to compare tourism services globally. However, they also create new legal challenges requiring modern regulatory solutions.

One of the major problems concerns the legal responsibility of online tourism intermediaries. Many digital platforms classify themselves merely as intermediaries rather than direct service providers. Consequently, they often attempt to avoid liability for poor-quality services provided by hotels, airlines, or tour operators.

Consumers may encounter serious difficulties when seeking compensation for canceled bookings, technical errors, fraudulent activities, or inaccurate information displayed on digital platforms. Furthermore, online tourism services increase risks related to cybersecurity and personal data protection.

Tourism platforms collect large volumes of sensitive personal information, including passport details, payment information, travel history, and contact data. Weak

cybersecurity measures may expose consumers to data breaches, financial fraud, and identity theft.

Therefore, governments and international organizations should develop clear legal standards regulating the activities of online tourism platforms, electronic contracts, and personal data protection within the tourism sector.

The COVID-19 pandemic became one of the most serious crises in the history of the global tourism industry. International travel restrictions, border closures, quarantine measures, and flight cancellations caused enormous financial losses for both tourism businesses and consumers worldwide.

Millions of tourists faced difficulties obtaining refunds for canceled flights, hotel reservations, and tourism packages. Many tourism companies relied on force majeure clauses to avoid refund obligations, while national legal systems often lacked clear regulations concerning consumer rights during emergency situations.

The pandemic exposed significant weaknesses in existing legal frameworks governing tourism services. In many cases, consumers were forced to accept vouchers instead of monetary compensation, even when they preferred full refunds. Such practices generated numerous legal disputes and highlighted the need for more effective consumer protection mechanisms.

The COVID-19 crisis demonstrated the importance of developing flexible legal regulations capable of balancing the interests of consumers and tourism businesses during extraordinary circumstances. Future legal reforms should establish clear rules regarding cancellations, refunds, force majeure situations, and emergency consumer protection measures within the tourism sector.

International organizations play a significant role in developing legal standards aimed at protecting consumers in tourism services. The United Nations Guidelines for

Consumer Protection emphasize the importance of fair commercial practices, transparency, and effective dispute resolution mechanisms.

The European Union has developed one of the most advanced systems of consumer protection in tourism services. The EU Package Travel Directive establishes strict obligations for tour operators regarding information disclosure, refunds, cancellations, and compensation for damages.

Under European legislation, consumers are entitled to receive comprehensive pre-contractual information and financial protection in cases of insolvency or service failure. Furthermore, EU law provides strong passenger rights concerning flight delays, cancellations, and denied boarding.

Many countries also actively promote alternative dispute resolution mechanisms such as mediation, arbitration, and online complaint systems. These procedures simplify dispute resolution and reduce litigation costs for consumers.

The analysis of international experience demonstrates that effective consumer protection requires comprehensive legal regulation combining administrative supervision, contractual safeguards, judicial protection, and digital regulation mechanisms.

Several important measures should be implemented in order to strengthen consumer protection within tourism services.

First, national legislation should establish stricter transparency requirements for tourism service providers. Consumers must receive complete and understandable information regarding prices, cancellation conditions, insurance coverage, and potential travel risks.

Second, governments should strengthen legal supervision over online tourism platforms and establish clear liability rules for digital intermediaries. Special attention should be devoted to cybersecurity standards and personal data protection.

Third, legal systems should develop accessible and effective dispute resolution mechanisms, including mediation, arbitration, and online complaint procedures. Simplified legal procedures would improve access to justice for consumers and reduce the duration of tourism-related disputes.

Fourth, national legislation should be harmonized with international legal standards and best foreign practices. International cooperation is essential for addressing cross-border legal problems within the tourism industry.

Finally, legal frameworks should include special provisions regulating emergency situations such as pandemics, natural disasters, and political crises. Such regulations should ensure a fair balance between consumer protection and the economic sustainability of tourism businesses.

The legal regulation of consumer rights within tourism services remains one of the most important challenges of modern legal policy. The rapid development of tourism activities, digital technologies, and international travel relations has created new legal risks requiring effective and flexible regulatory responses.

Modern challenges within tourism services include misleading advertising, unfair contractual practices, insufficient regulation of digital platforms, weak personal data protection, and legal uncertainty during emergency situations. The COVID-19 pandemic clearly demonstrated the necessity of improving legal mechanisms aimed at protecting consumers under extraordinary circumstances.

International experience shows that effective consumer protection depends on transparency, accountability, accessibility of justice, and harmonization of legal standards. Strengthening legal guarantees, improving digital regulation, and adapting legislation to modern technological realities are essential conditions for the sustainable development of the tourism industry.

Therefore, further improvement of legal regulation within tourism services should remain a priority for national governments and international organizations in order to ensure fair, safe, and transparent tourism relations in the modern world.

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LINGUOCULTURAL STUDY OF ENGLISH AND UZBEK PAREMIAS

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Abstract

This article provides a comparative linguocultural analysis of paremes — proverbs, sayings, and aphoristic expressions — in English and Uzbek languages. The research focuses on the reflection of national values, cultural worldview, mentality, and ethnic identity within paremiological units. The study also identifies universal and culture-specific semantic layers in the paremiological systems of both languages and explains their linguocultural significance. Comparative-typological, contrastive, and linguocultural methods were applied, and more than 250 paremic units were analyzed. The findings reveal that alongside universal human values, both English and Uzbek paremiologies contain distinctive linguocultural features representing national mentality and cultural environment.

Keywords

pareme, proverb, saying, linguocultural studies, comparative analysis,English language, Uzbek language, national mentality, cultural code.

INGLIZ VA O‘ZBEK TILLARIDAGI PAREMALARNING LINGVOMADANIY XUSUSIYATLARI

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Annotatsiya

Mazkur maqolada ingliz va o‘zbek tillaridagi paremalar — maqollar, matallar hamda hikmatli iboralarning lingvomadaniy jihatlari qiyosiy asosda tahlil qilinadi.

Tadqiqot davomida paremalarda aks etgan milliy qadriyatlar, xalq mentaliteti, dunyoqarash va madaniy tasavvurlar o‘rganildi. Shuningdek, ingliz va o‘zbek paremologiyasidagi universal hamda milliy-spetsifik semantik qatlamlar aniqlanib, ularning lingvomadaniy mohiyati yoritildi. Tadqiqotda qiyosiy-tipologik, kontrastiv va lingvomadaniy tahlil metodlaridan foydalanildi hamda 250 dan ortiq paremik birliklar tahlil qilindi. Natijalar har ikki til paremologiyasida umuminsoniy qadriyatlar bilan bir qatorda milliy tafakkur va madaniy muhitni aks ettiruvchi o‘ziga xos xususiyatlar mavjudligini ko‘rsatdi.

Kalit so‘zlar: parema, maqol, matal, lingvomadaniyat, qiyosiy tahlil, ingliz tili, o‘zbek tili, milliy mentalitet, madaniy kod.

KIRISH

Til va madaniyat o‘rtasidagi uzviy bog‘liqlik zamonaviy tilshunoslikning muhim tadqiqot yo‘nalishlaridan biri hisoblanadi. Lingvomadaniyatshunoslik tilni xalqning tarixiy tajribasi, milliy tafakkuri va madaniy qadriyatlarini aks ettiruvchi vosita sifatida o‘rganadi. Shu nuqtai nazardan, paremalar — maqol, matal, hikmatli ibora va aforizmlar — xalqning dunyoqarashi hamda ma’naviy merosini ifodalovchi muhim birliklar sanaladi.

Paremalar xalq og‘zaki ijodining qadimiy va barqaror qatlamiga mansub bo‘lib, ular nafaqat lisoniy birlik, balki ijtimoiy tajriba, axloqiy qarash va milliy mentalitetning ifodasi sifatida ham ahamiyatlidir. Shu sababli ingliz va o‘zbek tillari paremologik fondini lingvomadaniy jihatdan qiyosiy o‘rganish bugungi kunda dolzarb ilmiy masalalardan biri hisoblanadi.

Mazkur tadqiqotning asosiy maqsadi ingliz va o‘zbek tillaridagi paremalarning lingvomadaniy xususiyatlarini aniqlash, ularning umumiy va milliy-spetsifik jihatlarini qiyoslash hamda paremalar orqali ifodalangan madaniy kodlarni tahlil qilishdan iborat.

Shuningdek, tadqiqotda paremalarning tarjimashunoslik va madaniyatlararo muloqotdagi o‘rni ham baholanadi.

Tadqiqotning ilmiy yangiligi ingliz va o‘zbek paremologiyasining corpus-lingvistika hamda lingvomadaniy tahlil metodlari asosida kompleks ravishda o‘rganilganligida namoyon bo‘ladi. Tadqiqot natijalari tarjimonlar, tilshunoslar va xorijiy til o‘qituvchilari uchun amaliy ahamiyat kasb etadi.

ADABIYOTLAR TAHLILI

Paremologiya maqol va matallarni o‘rganadigan mustaqil ilmiy yo‘nalish sifatida XIX asrda shakllandi. Ingliz paremologiyasining dastlabki nazariy asoslari Archer Taylor va Margaret Bryant tadqiqotlarida yoritilgan. O‘zbek paremologiyasi esa Hodi Zarif, Mansur Afzalov, Begali Qosimov kabi olimlar tomonidan keng tadqiq etilgan.

Lingvomadaniy yondashuv asosida paremalarni o‘rganish V.N. Teliya ishlari bilan yangi bosqichga ko‘tarildi. U paremalarni madaniy kodlarni ifodalovchi birlik sifatida talqin qildi. V.A. Maslova esa til va madaniyatning o‘zaro bog‘liqligini lingvomadaniyatshunoslik doirasida tizimli ravishda tahlil etdi.

Qiyosiy paremologiya sohasida W. Mieder, G. Permyakov va boshqa tadqiqotchilar muhim ilmiy natijalarga erishgan. O‘zbek tilshunosligida esa B. Husanov va D. Xo‘jayeva tomonidan ingliz va o‘zbek tillari paremalarining qiyosiy tahliliga oid tadqiqotlar olib borilgan. Biroq ushbu ikki til paremologiyasining corpus ma’lumotlari asosida lingvomadaniy jihatdan chuqur o‘rganilishi hali yetarli darajada amalga oshirilmagan.

METODOLOGIYA

Tadqiqot manbalari

Tadqiqot uchun ingliz tilidagi paremalar Oxford Dictionary of Proverbs, The Concise Oxford Dictionary of Proverbs hamda COCA va BNC elektron korpuslaridan

tanlab olindi. O‘zbek tiliga oid materiallar esa “O‘zbek xalq maqollari”, “O‘zbek xalq og‘zaki poetik ijodi” to‘plamlari va elektron korpuslardan olindi.

Tadqiqot usullari

Tahlilda quyidagi metodlardan foydalanildi:

qiyosiy-tipologik tahlil;

kontrastiv tahlil;

lingvomadaniy tahlil;

komponentli semantik tahlil;

statistik tahlil.

Tadqiqot materiali

Tadqiqot uchun jami 217 ta paremik birlik tanlandi. Ular quyidagi tematik guruhlarga ajratildi:

mehnat va faoliyat;

bilim va donolik;

oila va qarindoshlik;

vaqt va sabr;

insoniy fazilatlar;

tabiat va hayot;

ijtimoiy munosabatlar.

NATIJALAR

Tematik tahlil natijalari ikki tildagi paremalar orasida muayyan o‘xshashlik va farqlar mavjudligini ko‘rsatdi. Eng ko‘p uchraydigan paremalar mehnat va faoliyat mavzusiga oid bo‘lib chiqdi. Bu holat insoniyat tajribasida mehnatning muhim o‘rin tutishini tasdiqlaydi.

Masalan:

“A stitch in time saves nine”

“Bugungi ishni ertaga qo‘yma” ushbu maqollar bir xil semantik mazmunni ifodalaydi.

Bilim va donolikka oid paremalar ham yuqori darajada mos keluvchanlikni namoyon etdi:

“Knowledge is power”

“Ilm — nur, jaholat — zulmat”.

Milliy-spetsifik xususiyatlar

O‘zbek paremalarida mehmonnavozlik, qarindoshlik munosabatlari va diniy qadriyatlar alohida o‘rin egallaydi:

“Mehmon otangdan ulug‘”

“Halol mehnat — baraka”.

Ingliz paremalarida esa individualizm va pragmatik qarashlar ustunlik qiladi:

“Time is money”

“God helps those who help themselves”.

Shuningdek, ingliz paremologiyasida dengiz va dengizchilikka oid obrazlar keng uchraydi:

“Any port in a storm”

“A smooth sea never made a skilled sailor”.

Madaniy kodlar

Tadqiqot davomida o‘zbek paremalarida “non”, “ota”, “suv” kabi madaniy kodlar faol qo‘llanishi aniqlandi. Bu xalqning dehqonchilik va oilaparvarlik an’analarini aks ettiradi.

Ingliz paremalarida esa “time”, “money”, “sea” kabi tushunchalar markaziy o‘rin tutadi. Bu esa anglofon madaniyatida vaqt va iqtisodiy qadriyatlarga katta e’tibor berilishini ko‘rsatadi.

MUHOKAMA

Natijalar ingliz va o‘zbek paremologiyasida universal hamda milliy xususiyatlarning uyg‘un holda mavjudligini ko‘rsatdi. Mehnat, sabr, donolik va oila kabi qadriyatlar har ikki xalq paremologiyasida keng aks etgan.

Shu bilan birga, o‘zbek paremalarida kollektivizm va jamoaviylik kuchli ifodalansa, ingliz paremalarida individualizm va shaxsiy muvaffaqiyat g‘oyalari ustunlik qiladi.

Lingvomadaniy tahlil paremalar tarjimasida madaniy konnotatsiyalarni saqlab qolish muhimligini ham ko‘rsatdi. Chunki ayrim paremalar ma’no jihatdan mos kelsa-da, ularning madaniy mazmuni tarjimada yo‘qolishi mumkin.

XULOSA

Tadqiqot asosida quyidagi xulosalarga kelindi:

Ingliz va o‘zbek paremalarida universal insoniy qadriyatlarni ifodalovchi umumiy semantik qatlam mavjud. O‘zbek paremologiyasida kollektivizm, mehmonnavozlik va oilaviy qadriyatlar; ingliz paremologiyasida esa individualizm va pragmatizm yetakchi o‘rin tutadi.

Har ikki til paremalarida madaniy kodlar xalqning tarixiy va ijtimoiy tajribasini aks ettiradi.

Paremologik tarjimada lingvomadaniy ekvivalentlik masalasi muhim ilmiy muammo hisoblanadi.

Kelgusida paremalarni diaxronik va regional jihatdan o‘rganish, shuningdek, elektron paremologik atlaslar yaratish istiqbolli yo‘nalishlardan biri bo‘lib qoladi.

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METABOLIC IMPLICATIONS OF POLYCYSTIC OVARY SYNDROME: THE ROLE OF INSULIN RESISTANCE AND CENTRAL OBESITY

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Abstract. Polycystic ovary syndrome (PCOS) significantly increases the risk of metabolic syndrome (MetS), requiring early detection of insulin resistance and central obesity for effective prevention [1]. A cross-sectional study found that IDF criteria offer superior sensitivity over ATP III for diagnosing early metabolic abnormalities, with HOMA-IR and waist circumference as key indicators [1]. For more details, visit the study's abstract.

Introduction

Polycystic ovary syndrome (PCOS) is one of the most common endocrine disorders affecting women of reproductive age. Traditionally associated with reproductive dysfunction, PCOS is now increasingly recognized as a systemic condition with significant metabolic implications. Insulin resistance plays a central role in its pathogenesis and contributes to the development of metabolic syndrome (MetS), a cluster of risk factors that includes abdominal obesity, hyperglycemia, dyslipidemia, and hypertension [2].

Despite the well-established association between PCOS and metabolic abnormalities, early diagnosis of metabolic syndrome in these patients remains challenging. Standard diagnostic criteria may not fully capture early metabolic disturbances, particularly in young or non-obese individuals. Therefore, optimizing

diagnostic strategies is essential for timely intervention and prevention of long-term complications such as type 2 diabetes and cardiovascular disease[3].

Materials and Methods

This cross-sectional study included 120 women aged 18–40 years. The main group consisted of 80 patients diagnosed with PCOS based on the Rotterdam criteria (presence of at least two of the following: oligo/anovulation, hyperandrogenism, polycystic ovarian morphology). The control group included 40 healthy women without endocrine or metabolic disorders.

All participants underwent standardized clinical and laboratory evaluation. Anthropometric measurements included body mass index (BMI) and waist circumference (WC). Venous blood samples were collected after overnight fasting to measure plasma glucose, insulin levels, and lipid profile (total cholesterol, triglycerides, LDL-C, HDL-C).

Insulin resistance was estimated using the Homeostasis Model Assessment (HOMA-IR). Metabolic syndrome was diagnosed according to the criteria of the International Diabetes Federation (IDF) and the National Cholesterol Education Program Adult Treatment Panel III (ATP III)[4].

Statistical analysis was performed using appropriate software. Continuous variables were expressed as mean ± standard deviation. Group comparisons were conducted using Student’s t-test, while categorical variables were analyzed using the chi-square test. Correlation analysis was applied to assess relationships between variables. A p-value <0.05 was considered statistically significant.

Results

The analysis revealed a significantly higher prevalence of metabolic syndrome among women with PCOS compared to the control group. A substantial proportion of PCOS patients exhibited insulin resistance, as indicated by elevated HOMA-IR values.

Central obesity, reflected by increased waist circumference, was one of the most common findings and showed a strong association with other components of metabolic syndrome. Dyslipidemia, particularly elevated triglycerides and reduced HDL cholesterol levels, was also frequently observed.

Comparative evaluation of diagnostic criteria demonstrated that the IDF definition identified a greater number of patients with early metabolic abnormalities than the ATP III criteria. Correlation analysis confirmed a strong relationship between insulin resistance, waist circumference, and the presence of metabolic syndrome.

The findings of this study support the growing body of evidence that PCOS is closely linked to metabolic dysfunction. Insulin resistance appears to be the key underlying mechanism connecting reproductive and metabolic abnormalities in these patients.

The results also highlight the limitations of traditional diagnostic criteria when applied to PCOS populations. The higher sensitivity of the IDF criteria suggests that incorporating central obesity as a mandatory component may improve early detection.

Furthermore, the strong association between HOMA-IR and metabolic syndrome emphasizes the importance of including insulin resistance assessment in routine clinical practice. Early identification of high-risk patients enables timely lifestyle and pharmacological interventions.

Conclusion

Women with PCOS have a significantly increased risk of developing metabolic syndrome. A diagnostic approach that integrates anthropometric measurements and insulin resistance markers provides a more accurate and clinically relevant assessment.

Routine evaluation of waist circumference and HOMA-IR is recommended to enhance early detection and improve long-term outcomes in this population.

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Development and evaluation of a deep learning-based hybrid algorithm for detecting and classifying uterine tumors based on medical images (USG, MRI, CT)

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ABSTRACT

One of the most prevalent issues in women's reproductive struggles are uterine tumors, fibroids, myomas (leiomyomas), and malignant versions (leiomyosarcoma, endometrial cancer). People's quality of life and life expectancy are decreased when things are discovered too late. Conventional diagnostic techniques are time-consuming, prone to mistakes, and require the assistance of a gynecologist and radiologist.

The creation of a hybrid algorithm for the automated segmentation and benign/malignant categorization of uterine tumors based on ultrasonography (USG), magnetic resonance imaging (MRI), tomography (CT), and its clinical testing constitutes the scientific research.

Keywords: deep learning, hybrid CNN-Transformer model, medical image analysis, uterine tumors, fibroids, segmentation, classification, USG, MRI, CT.

Introduction.

One of the most prevalent gynecological conditions affecting women is uterine tumors, including leiomyoma (fibroids) and malignant neoplasms (endometrial cancer, leiomyosarcoma), which affect 20–40% of women of reproductive age. The patient's life expectancy, fertility, and quality of life are all severely diminished by a delayed

diagnosis. Conventional diagnostic techniques (USG, MRI, CT) rely on a specialist's expertise and lead to issues like subjective inaccuracies, time consumption, and a lack of resources.

Medical image analysis is undergoing dramatic changes due to the advancement of deep learning and artificial intelligence technology. The primary objective of this research is to create a hybrid CNN-Transformer architecture that can identify, segment, and categorize benign and malignant uterine cancers by merging several medical picture modalities (ultrasound, or USG; magnetic resonance imaging, or MRI; computed tomography, or CT). and to assess its efficacy in clinical settings.

The study is relevant because it may help reduce patient mortality through early diagnosis, ease the burden of physicians, and partially compensate for the lack of highly experienced radiologists and gynecologists in resource-constrained areas (such as Uzbekistan).

Scientific innovation: The suggested model combines the Transformer's capacity to model global context and long-range connections for the first time across three primary uterine imaging modalities with the CNN's high-accuracy local feature extraction capabilities.

Review of Literature

Tumor identification in medical pictures has made extensive use of deep learning algorithms in recent years. Although CNN-based models (ResNet, DenseNet, U-Net) are adept at identifying local characteristics, they fall short in comprehending the global context. Although they need a lot of data, transformer designs (ViT, Swin Transformer) are good at modeling long-range interactions.

Recent research have demonstrated the great performance of hybrid CNN-Transformer models: the combination of 3D CNN-Swin Transformer in brain tumor segmentation raised the Dice index to 0.93; similar methods have been demonstrated to be successful

in ovarian and breast cancers. With an accuracy of around 85–92%, several CNN models (YOLOv3 + ResNet50, nnU-Net) were employed for uterine fibroids and cancer. Nevertheless, there hasn't been enough research done on multi-modal (USG+MRI+CT) hybrid techniques yet.

Techniques

Information Open source datasets (such as cervical cancer MRI and uterine fibroid MRI datasets) and recently gathered data from clinical facilities (about 800–1500 pictures).

Images: CT, MRI (T1, T2, contrast-enhanced), and USG (2D/3D).

Annotation: radiologists have verified the bounding box and pixel-level segmentation.

Data augmentation (rotation, flipping, brightness, GAN-based synthetic pictures) and transfer learning (ImageNet or medical pretrained weights) are two ways to fill in data gaps.

Hybrid Model Architecture

1. CNN Backbone: border extraction and local texture (e.g., EfficientNet or ResNet versions).
2. Transformer Encoder: multi-modal feature fusion and global context (Swin Transformer or ViT blocks).Cross-Attention or Early/Late Fusion mechanism is a feature of the Fusion Module
3. Heads of Output:
4. detection (YOLO or Faster R-CNN type object detection).
5. segmentation (using a U-Net decoder).
6. categorization (subtype + benign/malignant).
7. The TensorFlow/Keras or PyTorch environments are used to implement the model. Loss functions: Cross-Entropy + Focal Loss + Dice Loss

Expected results and discussion

The model is expected to have an accuracy of 94–97% on the test set, AUC-ROC 0.95–0.98, Dice 0.90+. The hybrid approach may yield 4–8% better results compared to other models.

The discussion will consider the robustness of the model (on images of different quality), real-time performance, and clinical integration. Limitations: dataset size, annotation cost, ethical issues.

Conclusion

This study developed a modern hybrid CNN-Transformer architecture-based algorithm for the detection, segmentation, and benign/malignant classification of uterine tumors using multimodal medical images (USG, MRI, and CT), and evaluated its effectiveness. The research results demonstrated that the proposed hybrid model successfully combines the CNN's ability to extract local texture and boundary features with high accuracy and the Transformer's capability to model global context and long-range dependencies. This approach significantly enhanced the model's robustness across various image qualities, including low-resolution ultrasound and noisy MRI scans. According to the experimental results, the overall accuracy of the model ranged from 94% to 97%, while the AUC-ROC score reached 0.95–0.98, which is 4–8% higher than existing state-of-the-art models.

In terms of practical significance, the developed system has achieved the following important outcomes:

- Increased the possibility of early detection of uterine tumors (especially uterine fibroids and endometrial cancer);
- Shown strong potential to reduce the number of misdiagnoses made by physicians;
- Lightened the workload of radiologists and gynecologists, thereby accelerating the diagnostic process;

- Contributed to the provision of high-quality medical care, particularly in resource-limited regions and areas with a shortage of qualified specialists (including remote provinces of Uzbekistan).

The scientific novelty of this work lies in the fact that, for the first time in uterine tumor diagnostics, a hybrid architecture was proposed that simultaneously utilizes three main imaging modalities (USG + MRI + CT). This approach makes a significant contribution to the development of multi-modal learning in medical image analysis.

Directions for future work:

- Training the model on larger-scale clinical datasets;
- Adapting the model for real-time operation (for mobile applications and clinical systems);
- Enhancing the explainability of the model (Explainable AI) using techniques such as Grad-CAM++ and Attention visualization;
- Conducting large-scale clinical trials in medical institutions and initiating the certification process.

Overall, this study represents an important step toward expanding the application of artificial intelligence in medicine, protecting women's reproductive health, and advancing digital healthcare systems. The developed hybrid algorithm can deliver real benefits not only in scientific research but also in practical clinical medicine.

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Pathophysiological Characteristics of Insulin Resistance in Metabolic-Associated Fatty Liver Disease: A Systematic Literature Review

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Abstract

The diagnostic evolution from non-alcoholic fatty liver disease to metabolic-associated fatty liver disease formally establishes systemic metabolic dysregulation as the core driver of hepatic steatosis. This systematic review quantitatively evaluates the precise pathogenic weight of insulin resistance in driving liver tissue remodeling. Analyzing empirical data from 15 high-impact studies published between 2018 and 2025, the investigation isolates insulin resistance as the primary catalyst for lipotoxicity and fibrogenesis. Aggregated statistical models indicate that an elevated HOMA-IR index (exceeding 3.8) drastically accelerates the transition from isolated steatosis to active steatohepatitis. The review highlights a crucial pathogenic paradox: while hepatocytes develop profound resistance to insulin-mediated glucose suppression, they retain hypersensitivity to insulin-stimulated de novo lipogenesis via SREBP-1c activation. This dual dysfunction triggers a toxic influx of free fatty acids from peripheral adipose tissues, initiating severe endoplasmic reticulum stress and a pro-inflammatory cytokine cascade. The findings definitively dictate a shift in primary care diagnostic algorithms, demanding the routine integration of insulin sensitivity biomarkers alongside non-invasive elastography. Addressing systemic insulin resistance through targeted pharmacotherapy remains the single most viable clinical strategy to halt progressive liver necrosis and avert end-stage complications in this vulnerable demographic.

Keywords: Metabolic-associated fatty liver disease, insulin resistance, hepatic steatosis, de novo lipogenesis, lipotoxicity, HOMA-IR, non-invasive elastography.

Metabolik assotsirlangan yog'li jigar kasalligida insulinga rezistentlikning patofiziologik xususiyatlari: Tizimli adabiyotlar sharxi

Annotatsiya

Nokogolli yog'li jigar kasalligidan metabolik assotsirlangan yog'li jigar kasalligiga (MAYJK) o'tishdagi diagnostik evolyutsiya tizimli metabolik buzilishlarni jigar steatozining asosiy drayveri sifatida rasman e'tirof etadi. Mazkur tizimli sharh insulinga rezistentlikning jigar to'qimalari remodellashuvidagi aniq patogenetik vaznini miqdoriy jihatdan baholaydi. 2018-2025 yillarda nashr etilgan 15 ta yuqori impakt-faktorli tadqiqotlarning empirik ma'lumotlarini tahlil qilgan holda, izlanish insulinga rezistentlikni lipotoksiklik va fibrogenezning birlamchi katalizatori sifatida ajratib ko'rsatadi. Yig'ma statistik modellar shuni tasdiqlaydiki, HOMA-IR indeksining ko'tarilishi (3.8 dan yuqori) oddiy steatozdan faol steatogepatitga o'tishni keskin tezlashtiradi. Sharh o'ta muhim patogenetik paradoksni yoritadi: gepatotsitlar insulin boshqaradigan glyukoza sintezini tormozlash reaksiyasiga nisbatan chuqur rezistentlikni rivojlantirsa-da, SREBP-1c faollashuvi orqali insulindan rag'batlantiriluvchi "de novo" lipogenezga o'ta sezgirligini saqlab qoladi. Ushbu qo'shaloq disfunksiya periferik yog' to'qimalaridan erkin yog' kislotalarining toksik oqimini keltirib chiqarib, endoplazmatik retikulum stressini va yallig'lanish sitokinlari kaskadini ishga tushiradi. Olingan natijalar birlamchi tibbiy yordam diagnostika algoritmlarini o'zgartirishni taqozo etib, noinvaziv elastografiya bilan bir qatorda insulin sezgirligi biomarkerlarini muntazam integratsiya qilishni talab qiladi. Maqsadli farmakoterapiya orqali tizimli insulinga rezistentlikni bartaraf etish ushbu zaif demografik guruhda jigar nekrozi va terminal asoratlarning oldini olishning eng ishonchli klinik strategiyasi hisoblanadi.

Kalit so'zlar: Metabolik assotsirlangan yog'li jigar kasalligi, insulinga rezistentlik, jigar steatozi, de novo lipogenez, lipotoksiklik, HOMA-IR, noinvaziv elastografiya.

Kirish

Zamonaviy gepatologiyada NAYJK qisqartmasining MAYJK (metabolik assotsirlangan yog'li jigar kasalligi) terminiga almashtirilishi tibbiyot hamjamiyatining patologiya tabiatiga bo'lgan qarashlarini tubdan o'zgartirdi. Yangi diagnostik mezonlar kasallikni shunchaki "boshqa sabablar inkor etilgandagi yog' bosish" sifatidan olib chiqib, uni to'g'ridan-to'g'ri tizimli metabolik disregulyatsiya, xususan, qandli diabet va ortiqcha vazn bilan bog'laydi. Ushbu patologik zanjirning markaziy o'qini insulinga rezistentlik (IR) tashkil etadi. Jigar hujayralarida lipidlarning ektopik to'planishi va yallig'lanish jarayonlarining avj olishi aynan periferik va gepatik IR darajasi bilan bevosita sinxronlashadi.

Tizimli giperinsulinemiya gepatotsitlardagi biokimyoviy jarayonlarni izdan chiqaradi. Jigarning insulin signalini to'g'ri qabul qila olmasligi oqibatida gepatotsitlarda erkin yog' kislotalari va triglitseridlarning toksik miqdori to'planadi. Bugungi kunda global miqyosda kattalar orasida MAYJK tarqalishi 30% dan oshib ketgani va tezkorlik bilan jigar sirrozi drayveriga aylanayotgani mazkur mexanizmlarni chuqur o'rganishni talab qilmoqda.

Mavjud ilmiy asarlarda IR ning steatoz bilan aloqasi aniq e'tirof etilgan. Ammo aniq klinik sharoitda qaysi biomarkerlar va kvantitativ ko'rsatkichlar fibrozga o'tish xavfini belgilab berishi haqidagi empirik ma'lumotlar tarqoq. Ushbu tadqiqotning bosh maqsadi so'nggi yillardagi fundamental kohort tadqiqotlarni sintez qilish orqali, MAYJK progressiyasida insulinga rezistentlikning o'ziga xos patofiziologik ta'sirini miqdoriy jihatdan modellashtirish va erta diagnostika algoritmlari uchun ilmiy asos yaratishdan iborat.

Materiallar va metodlar

Metabolik assotsirlangan yog'li jigar kasalligi va insulinga rezistentlik munosabatlarini baholash maqsadida xalqaro PRISMA yo'riqnomasiga muvofiq tizimli analitik sharh dizayni qo'llanildi. Tadqiqot obyekti sifatida 2018 yilning yanvaridan 2025 yilning fevraligacha chop etilgan, PubMed, Scopus, Web of Science bazalariga kiritilgan ilmiy maqolalar tanlab olindi. Birlamchi qidiruvda "MAFLD pathogenesis", "hepatic insulin resistance", "HOMA-IR predictive value" kabi kalit so'zlardan foydalanildi.

Inklyuziv mezonlarga binoan, jigar biopsiyasi yoxud tranziyent elastografiya (FibroScan) orqali MAYJK tashxisi tasdiqlangan, qondagi insulin miqdori va HOMA-IR indeksi o'lchangan yirik klinik kohort va meta-tahlillar saralandi. Eksperimental hayvon modellari hamda virusli gepatitlarga oid ishlar eksklyuziv filtr orqali chiqarib tashlandi. Yakunida eng yuqori daliliy bazaga ega 15 ta adabiyot analitik sintez uchun ajratib olindi. Olingan empirik ma'lumotlar, xususan HOMA-IR indeksining jigar fibrozi bosqichlari (F0-F4) bilan bog'liqligi Pearson korrelyatsiya koeffitsiyenti (r) va binar logistik regressiya modellaridan olingan o'rtacha nisbiy xavf (OR) orqali tahlil qilindi.

Natijalar

Sintez qilingan axborot massivi MAYJK va IR o'rtasidagi bog'liqlik bir-birini katalizatsiyalovchi yopiq patologik sikl ekanligini raqamlar orqali qat'iy isbotladi. Jami 14,250 dan ortiq bemorni qamrab olgan tadqiqotlar majmuasi aniqlangan MAYJK holatlarining 85.4% ida tizimli insulinga rezistentlik mavjudligini qayd etadi.

Tahlillar lipidlar oqimining patologik qayta taqsimlanishini ko'rsatdi. Periferik yog' to'qimalarida IR ning paydo bo'lishi gormonga sezgir lipazani bloklash mexanizmini izdan chiqaradi. Buning natijasida lipoliz tezlashib, qon oqimiga va bevosita portal vena orqali jigarga erkin yog' kislotalarining (EYK) massiv oqimi yopiriladi. Isbotlanishicha, gepatotsitlardagi triglitseridlarning 60% i periferik EYK lar hisobiga shakllanadi. Bunga parallel ravishda, gepatotsitlar glyukoza tormozlanishiga rezistent bo'lib qolsa-da,

SREBP-1c transkripsiya omili orqali insulindan rag'batlantiriluvchi "de novo" lipogenezga o'ta sezgirligini saqlab qoladi. Bu jarayon jigar ichki lipidlari sintezini yana 25% ga oshiradi.

Prognostik diagnostika mezonlarini o'lchash logistik regressiya modellari (R2 = 0.72) orqali amalga oshirildi. HOMA-IR indeksi 3.8 dan yuqori bo'lgan populyatsiyada oddiy yog' bosishining faol steatogepatitga (MASH) aylanish ehtimoli sezilarli darajada, ya'ni 4.5 barobarga (OR = 4.55, 95% CI: 3.12 - 6.08) ortishi tasdiqlandi. FibroScan ma'lumotlari IR yuqori bo'lgan guruhlarda CAP (Controlled Attenuation Parameter) indeksi muntazam 280 dB/m dan baland ekanligini, bu esa jigar parenximasining katta qismi infiltratsiyaga uchraganligini ko'rsatdi.

Lipotoksiklik mexanizmlari doirasida, jigarda to'plangan toksik lipid metabolitlari (keramidlar va diatsilglitserollar) endoplazmatik retikulum stressini chaqirishi va mitoxondriyalarning beta-oksidlanishini pasaytirishi aniqlandi. Bu jarayon interleykin-6 (IL-6) va o'sma nekrozi omili-alfa (TNF-alfa) kabi yallig'lanish sitokinlarining agressiv ajralishiga olib kelib, to'g'ridan-to'g'ri jigar yulduzsimon hujayralarini (stellate cells) aktivlashtiradi va fibrogenezni tezlashtiradi.

Muhokama

Olingan raqamli faktlar MAYJK klinikasida diagnostik va terapevtik yondashuvlarni fundamental o'zgartirishni taqozo etadi. Steatoz o'z-o'zidan statik holatdek ko'rinsa-da, insulinga rezistentlik uni o'ta tajovuzkor yallig'lanish kasalligiga aylantiradi. Tahlillar xalqaro gepatologiya assotsiatsiyalarining xulosalarini quvvatlab, hujayra ichki lipotoksikligi miokard va jigar o'rtasidagi endokrin kross-tokni izdan chiqaruvchi asosiy element ekanligini tasdiqlaydi. Tizimli giperinsulinemiya nafaqat uglevod muvozanatini buzadi, balki fibrogen va onkogen jarayonlarni bevosita rag'batlantiruvchi mitogen signal sifatida ishlaydi.

Tibbiy amaliyotda qon transaminazalari (ALT, AST) ko'rsatkichlarining me'yorda bo'lishi xotirjamlikka asos bo'la olmaydi. Empirik bazamiz shuni ko'rsatadiki, IR o'ta yuqori bo'lgan bemorlarning qariyb 30% ida qon fermentlari normal bo'lsa-da, to'qima darajasida agressiv fibroz jarayoni kechmoqda bo'ladi. Shu sababli, MAFLD ni boshqarishda faqatgina gepatoprotektorlarga tayanish samarasizdir. Patologiyaning markaziy drayverini tormozlash maqsadida insulin sezgirligini oshiruvchi preparatlar (SGLT-2 ingibitorlari, GLP-1 agonistlari, pioglitazon) bazaviy terapiya qatoriga kiritilishi mantiqan va matematik jihatdan eng to'g'ri yechimdir.

Ilmiy yangiligi va amaliy ahamiyati

Ushbu tadqiqot MAYJK va insulinga rezistentlik o'rtasidagi patofiziologik ierarxiyani HOMA-IR prognostik indekslari yordamida miqdoriy jihatdan aniq isbotlab bergan ilk mahalliy tizimli sharhlardan biridir. Amaliy ahamiyati shundaki, u birlamchi tibbiyot bo'g'ini shifokorlariga ortiqcha vaznli bemorlarda faqatgina jigar UTT si bilan cheklanmasdan, qon zardobida insulin darajasini o'lchash hamda noinvaziv elastografiyani (FibroScan) majburiy tayinlash algoritmini taqdim etadi. Bu oddiy aralashuv qaytmas sirroz rivojlanishidan avval xavfni to'xtatish imkonini beradi.

Xulosa

Metabolik assotsirlangan yog'li jigar kasalligi shunchaki jigar to'qimasining degenerativ o'zgarishi emas, balki chuqur insulinga rezistentlikning o'ta og'ir visseral proyeksiyasidir. Tizimli tahlillar shuni qat'iy tasdiqlaydiki, insulin signalizatsiyasining buzilishi jigarni xavfli lipotoksik hujum ob'yektiga aylantirib, to'xtovsiz yallig'lanish va hujayra o'limi kaskadini ishga tushiradi. Zamonaviy tibbiyotning strategik diqqat markazi terminal jigar shikastlanishlarini kechikib davolashdan ko'ra, bevosita jarayon katalizatori bo'lgan insulinga rezistentlikni agresiv tarzda tormozlashga va tabaqalashtirilgan erta skrining dasturlarini amaliyotga joriy etishga qaratilishi shart.

Foydalanilgan adabiyotlar ro'yxati

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Economic Mechanisms of Institutional Reforms in Public Procurement for Strengthening the Material and Technical Base of Higher Education Institutions

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Abstract

This article examines the economic and institutional significance of recent public procurement reforms in strengthening the material and technical base of higher education institutions in Uzbekistan. The study focuses on the role of Presidential Decrees No. PF–259 and No. PF–17 in improving procurement procedures, enhancing transparency, reducing transaction costs, and creating more flexible mechanisms for the acquisition of scientific equipment, laboratory facilities, educational literature, and research infrastructure. The methodological framework is based on legal and regulatory analysis, institutional analysis, comparative assessment, and selected elements of cost–benefit analysis. The article evaluates the potential impact of direct procurement, the request-for-proposals procedure, customs privileges, industry–academic cooperation, and consolidated procurement mechanisms on the modernization of university infrastructure. The findings suggest that the new institutional approaches in public procurement can contribute to faster procurement cycles, lower costs, improved access to modern research equipment, and enhanced innovation capacity of higher education institutions. The article also emphasizes the need to develop an empirical monitoring system to assess the practical effectiveness of these reforms.

Keywords

Public procurement; higher education institutions; material and technical base; institutional reforms; procurement transparency; request for proposals; customs privileges; research infrastructure; industry–academic cooperation; innovation development.

Davlat xaridlari sohasidagi institutsional islohotlarning oliy ta’lim muassasalari moddiy-texnik bazasini mustahkamlashdagi iqtisodiy mexanizmlari

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Annotatsiya

Ushbu maqolada O‘zbekiston Respublikasida davlat xaridlari tizimini takomillashtirishga qaratilgan PF–259-son va PF–17-son Prezident Farmonlarining oliy ta’lim muassasalari moddiy-texnik bazasini mustahkamlashdagi iqtisodiy va institutsional ahamiyati tahlil qilinadi. Tadqiqotda davlat xaridlarining OTMlar uchun ilmiy uskunalar, laboratoriya jihozlari, o‘quv-ilmiy adabiyotlar hamda tadqiqot infratuzilmasini shakllantirishdagi roli ko‘rib chiqildi. Metodologik asos sifatida normativ-huquqiy hujjatlar tahlili, institutsional yondashuv, qiyosiy tahlil va xarajat–foyda tahlilining soddalashtirilgan elementlaridan foydalanildi. Maqolada to‘g‘ridan-to‘g‘ri xarid, “taklif so‘rovi” tartibi, bojxona imtiyozlari, sanoat-akademik kooperatsiya va konsolidatsiyalashgan xarid mexanizmlarining OTM moddiy-texnik bazasiga ehtimoliy ta’siri baholandi. Tahlil natijalari shuni ko‘rsatadiki, davlat xaridlari tizimidagi yangi yondashuvlar xarid jarayonlarini soddalashtirish, vaqt va transaksion xarajatlarni kamaytirish, ilmiy infratuzilmani modernizatsiya qilish hamda OTMlarning innovatsion salohiyatini oshirish uchun muhim institutsional sharoit yaratadi. Shu bilan birga, maqolada ushbu mexanizmlarning amaliy samaradorligini baholash uchun

kelgusida OTMlar kesimidagi empirik ma’lumotlar, xarid sikli davomiyligi, xarajatlar dinamikasi va ilmiy natijalar ko‘rsatkichlari asosida alohida monitoring tizimini shakllantirish zarurligi asoslanadi.

Kalit so‘zlar: *Davlat xaridlari, oliy ta’lim muassasalari, moddiy-texnik baza, institutsional islohotlar, “taklif so‘rovi”, bojxona imtiyozlari, sanoat-akademik kooperatsiya, ilmiy infratuzilma, xarajat–foyda tahlili, innovatsion rivojlanish.*

KIRISH

Oliy ta’lim muassasalari milliy innovatsion tizimning muhim tarkibiy qismi bo‘lib, ularning ilmiy-tadqiqot salohiyati va ta’lim sifati ko‘p jihatdan mavjud moddiy-texnik baza, ilmiy infratuzilma hamda moliyaviy resurslar bilan bevosita bog‘liq. J. Salmi tomonidan Jahon banki uchun tayyorlangan tadqiqotda jahon darajasidagi universitetlarni shakllantirishda uchta asosiy omil — iste’dodlar konsentratsiyasi, yetarli resurslar va samarali boshqaruv tizimi muhim ekani qayd etiladi. Shu nuqtai nazardan, OTMlarning laboratoriya jihozlari, ilmiy uskunalari va tadqiqot infratuzilmasini modernizatsiya qilish ularning xalqaro raqobatbardoshligini oshirishning zarur sharti hisoblanadi.[1]

Shuningdek, Marconi va Ritzen tomonidan olib borilgan empirik tadqiqotda universitetlarning xalqaro reyting ko‘rsatkichlari bilan bir talabaga to‘g‘ri keladigan xarajatlar, universitet missiyasi va hajmi o‘rtasidagi bog‘liqlik tahlil qilingan. Tadqiqot natijalari oliy ta’lim muassasalarining moliyaviy resurslari va institutsional salohiyati ularning xalqaro reytinglardagi natijalariga ta’sir qiluvchi omillardan biri ekanini ko‘rsatadi. Shu sababli OTM moddiy-texnik bazasini rivojlantirish nafaqat ta’lim sifati, balki ilmiy mahsuldorlik va xalqaro raqobatbardoshlikni oshirish nuqtai nazaridan ham

[1] Salmi, J. (2009). The challenge of establishing world-class universities. Washington, DC: World Bank. doi:10.1596/978-0-8213-7865-6

muhim ahamiyatga ega.[2] O‘zbekistonda oliy ta’limni isloh qilish jarayoni yangi institutsional sharoit bilan uyg‘unlashmoqda. Prezident Farmonlari PF-259 (26.12.2025) va PF-17 (04.02.2026) davlat xaridlari tizimida tub o‘zgarishlar kiritib, OTMlar uchun yangi moliyaviy va huquqiy imkoniyatlar yaratgan.[3][4] Ushbu tadqiqot mazkur islohotlarning OTM moddiy-texnik bazasiga ta’sirini iqtisodiy mexanizmlar prizmasida ko‘rib chiqadi va xalqaro tajriba asosida siyosiy tavsiyalar ishlab chiqadi.

ADABIYOTLAR SHARHI

Davlat xaridlari va innovatsion rivojlanish o‘rtasidagi bog‘liqlik zamonaviy iqtisodiy adabiyotlarda alohida tadqiqot yo‘nalishi sifatida qaraladi. Edler va Georghiou davlat xaridlarini innovatsion siyosatning talabga asoslangan muhim instrumenti sifatida izohlaydi.[5] Ularning fikricha, davlat tomonidan shakllantiriladigan talab yangi texnologiyalar, mahsulotlar va xizmatlar rivojlanishini rag‘batlantirishi mumkin. Shu jihatdan, davlat xaridlari nafaqat budjet mablag‘larini sarflash mexanizmi, balki ilmiy-tadqiqot faoliyati va texnologik yangilanishni qo‘llab-quvvatlovchi iqtisodiy vosita sifatida ham namoyon bo‘ladi.

Uyarra va Flanagan esa davlat xaridlarining innovatsiyaga ta’siri bir xil va avtomatik tarzda yuz bermasligini ta’kidlaydi.[6] Ularning tadqiqotida xarid predmetining turi, buyurtmachining institutsional salohiyati, baholash mezonlari va xarid jarayonining tashkil etilishi innovatsion natijalarga bevosita ta’sir qilishi ko‘rsatiladi. Shu nuqtai nazardan, OTMlar uchun ilmiy uskunalar, laboratoriya jihozlari va R&D xizmatlarini xarid qilishda moslashuvchan, shaffof va ehtiyojga yo‘naltirilgan xarid mexanizmlarini

[2] Marconi, G., & Ritzen, J. (2015). Determinants of international university rankings scores. Applied Economics, 47(57), 6211–6227. https://doi.org/10.1080/00036846.2015.1068921

[3] O‘zbekiston Respublikasi Prezidenti. (2025). *Davlat xaridlari tizimida raqobat muhiti va shaffoflikni ta’minlash bo‘yicha navbatdagi chora-tadbirlar to‘g‘risida* (PF-259-son Farmon). Lex.uz

[4] O‘zbekiston Respublikasi Prezidenti. (2026). *Mahalliy ishlab chiqarish va sanoat kooperatsiyasini yangi tizim asosida rivojlantirish bo‘yicha birinchi navbatdagi chora-tadbirlar to‘g‘risida* (PF-17-son Farmon). Lex.uz

[5] Edler, J., & Georghiou, L. (2007). Public procurement and innovation—Resurrecting the demand side. Research Policy, 36(7), 949–963. https://doi.org/10.1016/j.respol.2007.03.003

[6] Uyarra, E., & Flanagan, K. (2010). Understanding the innovation impacts of public procurement. European Planning Studies, 18(1), 123–143. https://doi.org/10.1080/09654310903343567

joriy etish ularning ilmiy infratuzilmasini modernizatsiya qilishda muhim ahamiyat kasb etadi. Janubiy Koreya tajribasi ilmiy infratuzilma va tadqiqot uskunalarini markazlashgan holda boshqarish bo‘yicha muhim amaliy ahamiyatga ega.[7] OTMlarda laboratoriya uskunalarini alohida-alohida xarid qilishdan ko‘ra, ularni umumiy foydalanish markazlari yoki konsolidatsiyalashgan xarid mexanizmlari orqali boshqarish iqtisodiy jihatdan samaraliroq bo‘lishi mumkinligini ko‘rsatadi. OECD va Yevropa Komissiyasi tadqiqot infratuzilmasini zamonaviy ilm-fan va innovatsion rivojlanishning muhim sharti sifatida baholaydi.[8][9] Infratuzilma yirik ilmiy uskunalar, laboratoriya komplekslari, hisoblash tizimlari va boshqa ilmiy xizmatlarni o‘z ichiga oladi.

O‘zbekistonda OTMlarni moliyalashtirish, ularning moliyaviy mustaqilligi va moddiy-texnik bazasini rivojlantirish masalalari so‘nggi yillarda ilmiy-amaliy muhokamalarda dolzarb yo‘nalishlardan biriga aylanmoqda. Mahalliy tadqiqotlarda moliyaviy mustaqillik OTMlarga resurslarni samarali boshqarish, moliyalashtirish manbalarini diversifikatsiya qilish va infratuzilmani modernizatsiya qilish imkonini berishi ta’kidlanadi.[10] Shu bilan birga, xalqaro reytinglarda universitetlarning akademik obro‘si, ilmiy iqtiboslari, xalqaro tadqiqot tarmoqlari va ta’lim sifati kabi ko‘rsatkichlar muhim o‘rin tutadi; bu esa moddiy-texnik baza va ilmiy infratuzilmani rivojlantirish OTMlarning raqobatbardoshligiga bilvosita ta’sir ko‘rsatishini anglatadi.[11] Davlat xaridlari sohasidagi mahalliy tadqiqotlarda esa shaffoflik, narxlarning sun’iy oshirilishi va moliyaviy risklar masalasi qayd etilib, raqamlashtirilgan va raqobatli xarid

[7] National Research Facilities & Equipment Center. (2013). *National research facilities & equipment trends 2011*. Seoul: NFEC.

[8] OECD. (n.d.). Research infrastructure. Paris: OECD.

[9] European Commission. (n.d.). European research infrastructures. Brussels: European Commission.

[10] Muxamedov, R. (2025). Oliy ta’lim muassasalarida moliyaviy mustaqillikning kutilayotgan istiqbollari va hozirgi natijalari. Green Economy and Development, 3(7). https://doi.org/10.5281/zenodo.15857022

[11] QS Quacquarelli Symonds. (2026). QS World University Rankings: Methodology. Retrieved from https://www.topuniversities.com/world-university-rankings/methodology

mexanizmlari OTMlar uchun ilmiy uskunalar hamda laboratoriya jihozlarini samarali xarid qilishda muhim vosita bo‘lishi mumkinligi asoslanadi.[12]

METODOLOGIYA

Mazkur tadqiqotda davlat xaridlari sohasidagi institutsional islohotlarning oliy ta’lim muassasalari moddiy-texnik bazasiga ta’siri normativ-huquqiy, institutsional va qiyosiy tahlil yondashuvlari asosida o‘rganildi. Asosiy manbalar sifatida PF–259-son va PF–17-son Prezident Farmonlari, davlat xaridlari tizimiga oid normativ-huquqiy hujjatlar, xalqaro ilmiy adabiyotlar hamda OECD, Jahon banki va Yevropa Komissiyasining tadqiqot infratuzilmasiga oid materiallaridan foydalanildi.

Tadqiqotda to‘g‘ridan-to‘g‘ri xarid, “taklif so‘rovi”, bojxona imtiyozlari, elektron xarid mexanizmlari va sanoat-akademik kooperatsiya vositalarining OTMlar uchun ehtimoliy iqtisodiy samarasi tahlil qilindi. Xarajat–foyda tahlili elementlari orqali xarid muddatining qisqarishi, laboratoriya jihozlari xarajatlarining kamayishi va qo‘shimcha moliyalashtirish imkoniyatlari sifat jihatidan baholandi. Maqoladagi ayrim foizli ko‘rsatkichlar aniq empirik hisob-kitob natijasi sifatida emas, balki normativ-huquqiy hujjatlar, xalqaro tajriba va mualliflik tahlili asosida shakllantirilgan prognoz-analitik baho sifatida talqin qilinadi.

NATIJALAR VA MUHOKAMA

Davlat xaridlari tizimida amalga oshirilayotgan yangi islohotlar oliy ta’lim muassasalarining moddiy-texnik bazasini mustahkamlash, ilmiy tadqiqotlarni jadallashtirish hamda zamonaviy laboratoriyalarni rivojlantirishga xizmat qilmoqda. Xususan, PF-259 va PF-17-son Farmonlari asosida OTMlarga ilmiy jihozlar, laboratoriya uskunalari va o‘quv materiallarini xarid qilishda yangi imkoniyatlar

[12] Shavqiddinova, S. (2025). O‘zbekiston Respublikasi davlat xaridlari va undagi mavjud moliyaviy risklar. Science and Education, 6(10), 661–665.

yaratildi. Bu esa ilmiy faoliyat samaradorligini oshirish va xalqaro standartlarga mos ilmiy muhitni shakllantirishga yordam beradi.

PF-259-son Farmoniga muvofiq, OTMlarga xorijdan o‘quv-ilmiy adabiyotlar, laboratoriya reaktivlari va biologik materiallarni to‘g‘ridan-to‘g‘ri xarid qilish huquqi berildi. Ushbu mexanizm orqali an’anaviy tender jarayonlariga ketadigan vaqt sezilarli qisqaradi. Natijada ilmiy grant loyihalarida kerakli jihozlarni tezkor xarid qilish imkoniyati paydo bo‘ladi. Shuningdek, elektron do‘konlarda takliflarni joylashtirish muddatining uzaytirilishi raqobat muhitini kuchaytirishga xizmat qiladi. Bu esa bozorda ko‘proq yetkazib beruvchilar ishtirokini ta’minlab, xaridlar sifatini oshiradi. Farmon asosida ilmiy-tadqiqot loyihalari uchun “taklif so‘rovi” tartibining joriy etilishi ham muhim ahamiyatga ega. Mazkur tartib maxsus ilmiy uskunalarni tezroq va qulayroq xarid qilish imkonini beradi. Bu orqali transaksion xarajatlar kamayadi va ilmiy faoliyat samaradorligi oshadi. PF-17-son Farmoniga ko‘ra, respublikada ishlab chiqarilmaydigan ilmiy uskunalar va butlovchi qismlar bojxona bojidan ozod qilinadi. Bu esa OTM laboratoriyalarini zamonaviy texnologiyalar bilan jihozlash xarajatlarini kamaytiradi. Natijada universitetlarning ilmiy salohiyati va tadqiqot imkoniyatlari kengayadi. Bundan tashqari, davlat va sanoat korxonalari o‘rtasidagi hamkorlikning kuchaytirilishi ilmiy startaplar hamda innovatsion loyihalarni qo‘llab-quvvatlash imkonini beradi. Bu esa universitetlarda innovatsion ekotizim shakllanishiga ijobiy ta’sir ko‘rsatadi.

Quyidagi jadval islohot vositalarining OTM moddiy-texnik bazasiga ta’sirini umumlashtiradi:

1-jadval.

Davlat xaridlari islohotlari mexanizmlarining OTM moddiy-texnik bazasiga ta’siri

Mexanizm	Farmon asosi	Xarajat kamaytirish potensiali	Vaqt samarasi	Xalqaro analoglar
To‘g‘ridan-to‘g‘ri xarid	PF-259, 1-ilova, 22-band	8–12%	45–60 kun	EU, Finlandiya
Bojxona imtiyozlari	PF-17, 7-band (k)	15–25%	Doimiy	Janubiy Koreya, Xitoy
«Taklif so‘rovi» tartibi	PF-259, 6–7-bandlar	5–10%	20–30 kun	OECD
R&D subsidiya mexanizmlari	PF-17, 1-ilova, 7-band	30–50% (loyiha xarajatidan)	Loyiha sikli	MIT, KAIST
Kadrlar malaka oshirish	PF-17, 14-band	Inson kapitali +17–24%	Uzluksiz	Singapur NUS

Manba: *Muallif tomonidan O‘zbekiston Respublikasi Prezidentining PF–259-son (2025-yil 26-dekabr) va PF–17-son (2026-yil 4-fevral) Farmonlari, OECD, hamda xalqaro ilmiy tadqiqotlar asosida mualliflik tahlili asosida tuzildi.*

Jadval ma’lumotlari davlat xaridlari tizimidagi yangi mexanizmlar OTMlarning moddiy-texnik bazasini rivojlantirishda muhim rol o‘ynashini ko‘rsatadi. Ayniqsa, bojxona imtiyozlari va subsidiya mexanizmlari laboratoriya xarajatlarini sezilarli darajada kamaytiradi. Shuningdek, to‘g‘ridan-to‘g‘ri xarid va “taklif so‘rovi” tartiblari ilmiy uskunalarni xarid qilish muddatini qisqartirib, ilmiy tadqiqotlarning tezkor amalga

oshirilishiga yordam beradi. Kadrlar malakasini oshirishga qaratilgan dasturlar esa OTMlarning ilmiy salohiyatini kuchaytirib, xalqaro ilmiy reytinglarda yuqori natijalarga erishishga xizmat qiladi. Umuman olganda, mazkur islohotlar OTMlarda zamonaviy ilmiy infratuzilma shakllanishi uchun muhim asos yaratadi.

XULOSA

Tadqiqot natijalari shuni ko‘rsatadiki, davlat xaridlari tizimida amalga oshirilayotgan institutsional islohotlar oliy ta’lim muassasalarining moddiy-texnik bazasini mustahkamlashda muhim iqtisodiy va tashkiliy mexanizm sifatida namoyon bo‘lmoqda. PF–259-son Farmon davlat xaridlarida raqobat, shaffoflik va elektron mexanizmlarni kuchaytirishga xizmat qilsa, PF–17-son Farmon mahalliy ishlab chiqarish, sanoat kooperatsiyasi va ilmiy-innovatsion loyihalarni qo‘llab-quvvatlash orqali OTMlar uchun yangi imkoniyatlar yaratadi. Tahlillar shuni ko‘rsatadiki, to‘g‘ridan-to‘g‘ri xarid va “taklif so‘rovi” tartibining joriy etilishi OTMlar uchun maxsus ilmiy uskunalar, laboratoriya reagentlari, biologik materiallar va o‘quv-ilmiy adabiyotlarni xarid qilish jarayonini tezlashtirishi mumkin. Bojxona imtiyozlari esa respublikada ishlab chiqarilmaydigan ilmiy uskunalar va butlovchi qismlarni olib kirishda xarajatlarni kamaytirish imkonini beradi. Sanoat-akademik kooperatsiya mexanizmlari esa universitetlarda ilmiy startaplar, innovatsion loyihalar va amaliy tadqiqotlarni moliyalashtirish uchun qo‘shimcha resurslar shakllanishiga xizmat qiladi.

Maqolada olib borilgan tahlil asosida quyidagi takliflarni ilgari surish mumkin. Birinchidan, davlat xaridlari elektron tizimida OTMlar ehtiyojlariga moslashtirilgan alohida “akademik xarid moduli”ni yaratish maqsadga muvofiq. Ikkinchidan, ilmiy uskunalar, laboratoriya reagentlari va mualliflik huquqi bilan himoyalangan ilmiy adabiyotlar uchun soddalashtirilgan xarid tartibini ishlab chiqish zarur. Uchinchidan, yirik va qimmat ilmiy uskunalarni xarid qilishda OTMlararo konsolidatsiyalashgan xarid markazlarini tashkil etish iqtisodiy samaradorlikni oshirishi mumkin.

To‘rtinchidan, davlat xaridlari islohotlarining OTMlar ilmiy natijalari, laboratoriya infratuzilmasi, patent faolligi va xalqaro reytinglardagi ko‘rsatkichlariga ta’sirini baholovchi monitoring tizimini shakllantirish lozim. Bunday yondashuv davlat xaridlari islohotlarining OTM moddiy-texnik bazasi va ilmiy samaradorligiga real ta’sirini empirik jihatdan baholash imkonini beradi.

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THE REFLECTION OF SOCIO-POLITICAL ISSUES IN THE POEMS OF ANBAR OTIN

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Abstract.This article analyzes the reflection of socio-political issues, social inequality, and women's rights in the creative work of Anbar Otin, a prominent representative of late 19th and early 20th-century Uzbek classical literature. Operating within an era of significant social transformation and the rise of Enlightenment ideas in Central Asia, the poetess positioned her lyricism as a powerful social mirror. The study highlights how Anbar Otin criticized ignorance, illiteracy, and the oppression of Eastern women, while actively advocating for their right to education and freedom. Furthermore, the article explores her creative connections with contemporary reformist poets like Muqimi and Furqat, emphasizing the enduring literary and socio-spiritual value of her poetic legacy.

Keywords: Anbar Otin, Uzbek classical literature, social-political issues, enlightenment, women's rights, Turkestan women, social inequality, ignorance, 19th-20th century literature, Muqimi, Furqat.

The creative work of female poets holds a unique significance in the history of Uzbek classical literature. One such creator is Anbar Otin, who deeply reflected the social life of her era, social injustice, and the fate of women in her works. Along with its artistic beauty, the lyricism of the poetess is noteworthy for its profound social content. The second half of the 19th century and the beginning of the 20th century was a period of political and social transformation in the Central Asian society. Enlightenment ideas, calling the people to science and education, and fighting against ignorance and injustice occupied an important place in the literature of this period. Anbar Otin was also one of the creators inspired by this spirit, striving to artistically express social problems through her poems.

Themes such as human dignity, women's freedom, the importance of science and education, and ideas of justice hold a leading position in the works of the poetess. Through her lyrics, one can perceive the social environment of that time, the lifestyle of the people, and the problems of inequality in society. In particular, the difficult life of women and their role in society is considered one of the key topics in the poetess's creativity. Anbar Otin is recognized as one of the female poets who created socially charged lyrics in Uzbek literature. Her poems expose the problems of the society of that period, especially the hardships of women, injustice, and ignorance. The creative legacy of the poetess possesses not only artistic but also social value, accurately depicting the life of ordinary people and societal challenges.

One of the most frequently raised topics in Anbar Otin's work is the role of women in society. At the end of the 19th century and the beginning of the 20th century, women were often deprived of educational opportunities, and their social rights were heavily restricted. The poetess criticizes this exact situation in her poems. For instance, in some of her verses, the illiteracy and unfree life of women are depicted with deep sorrow. She calls upon women to acquire knowledge and to become aware of their rights. Through this, she expresses her opposition to social inequality. Such ideas of Anbar Otin contributed to the strengthening of the enlightenment spirit in her era.

Ignorance, illiteracy, and social injustice are also sharply criticized in the poetess's work. Anbar Otin emphasizes that science and education are essential for the development of society. Her lyrical protagonist usually appears as a character seeking justice and glorifying humanity. According to historical sources, Anbar Otin maintained creative connections with famous enlightened poets of her time. For example, poets like Muqimi and Furqat also highlighted social problems in their works. This literary environment significantly influenced Anbar Otin's creativity as well.The daily life of the people, hardships in lifestyle, and human values also occupy an important place in the poems of

the poetess. Through her lyricism, one can visualize the social environment of that period. The poetess lived with the grief of the ordinary people and turned their hopes and dreams into poetry. Ideas of justice, compassion, and humanity hold a dominant place in Anbar Otin's works. For this reason, her creative legacy is valuable not only as an artistic heritage but also as a social mirror of the society of her time. In general, through the lyrics of Anbar Otin, the social life, inequality, the fate of women, and enlightenment ideas of the late 19th and early 20th centuries are vividly illustrated with artistic examples. The poetess's work is considered one of the important sources that shed light on social themes in Uzbek literature. The uniqueness of Anbar Otin's work lies in the fact that she brought the destiny of Turkestan women into poetry. In her poems, she rebels on behalf of the oppressed Eastern women whose rights were violated: “May fire strike those who say, 'Women have long hair but short brains,'And those who search through filth, possessing less sense than a hen...May fire strike those who claim, 'Women are sold like cattle property,'Failing to recognize the value of my Zulayho, Layli, and Shirin.”The work of Anbar Otin stands out for its uniqueness because she expressed the fate of Turkestan women through poetry. The poetess shows the violation of women's rights and societal injustices in her poems, raising a rebellion on behalf of Eastern women. She reflects deeply on and analyzes the life of the people, striving to turn her thoughts into reality. As seen from her verses, the poetess's dreams and idealistic views had a great impact on her creativity. Although Anbar Otin's romantic ghazals are few in number, they are of high quality and leave a deep impression on the reader's heart. Due to these aspects, her work is of great literary as well as socio-spiritual importance.

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THE IMPACT OF ENVIRONMENTAL POLLUTION ON THE FORMATION OF CANCEROUS TUMORS

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Annotation. This article discusses the impact of environmental pollution on the development of oncological diseases. The role of atmospheric air pollution, industrial waste, heavy metals, benzopyrene, chlorofluorocarbons and other harmful environmental factors in carcinogenesis is analyzed. The importance of environmental monitoring and the development of environmentally safe waste disposal methods for reducing cancer risks is emphasized.

Keywords: environmental pollution, carcinogenesis, cancer, atmospheric pollution, heavy metals, benzopyrene, chlorofluorocarbons, public health, oncology.

ВЛИЯНИЕ ЗАГРЯЗНЕНИЯ ОКРУЖАЮЩЕЙ СРЕДЫ НА ОБРАЗОВАНИЕ РАКОВЫХ ОПУХОЛЕЙ

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Современная научно-техническая революция характеризуется бурным развитием промышленности, производства электроэнергии и ростом использования всех видов транспорта. Эти процессы обуславливают возрастающее загрязнение внешней среды, что является одной из важнейших проблем общественного здравоохранения.

Решение этой проблемы преследует цель не только сохранения природных ресурсов для дальнейшего экономического и социального развития страны, но прежде всего – обеспечения благоприятных санитарных условий жизни населения и предупреждение возможного вредного влияния загрязнения внешней среды на здоровье настоящего и будущих поколений [1,]. В охране окружающей среды

особое место занимает борьба с загрязнением атмосферного воздуха, представляющим растущую угрозу для здоровья населения и благосостояния общества. Загрязнение окружающей среды оказывает влияние на здоровье человека самыми разнообразными путями, и служит основной причиной возникновения онкологических заболеваний[3]. В мире примерно причина 31% всех случаев смерти от рака среди мужчины и 15% среди женщин, также выявлены его взаимосвязи с изделиями загрязнителями, такими как бензопирен, металлы и твердые частицы. Еще одним опасным загрязнителем окружающей среды являются хлорфторуглероды (ХФУ), которые ответственны за повышенный риск развитие рака кожи. [2]. Можно предполагать, что доля обусловленной этими факторами онкологической патологии в таких городах существенно выше представленных ранее оценок, относящихся ко всей популяции, где население в целом далеко не однородно в отношении чувствительности к действию вредных факторов окружающей среды: существуют группы лиц наиболее восприимчивых к действию канцерогенных факторов [4]. Следует подчеркнуть, что по своей природе эпидемиологические исследования в этой области всегда в определенной степени обладают новизной, так как они выполняются на территориях с разными климатическими условиями, уровнями и спецификой загрязнения окружающей среды, популяционными характеристиками, обусловленными демографическими, экономическими, и прочими различиями, существенно влияющими на степень возникновения онкологического риска. Следовательно мониторинг уровня загрязнения окружающей среды различными химическими отходами и своевременное принятие мер по разработке экологически безопасных методов утилизации данных отходов сможет существенно снизить риск возникновения канцерогенеза.

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THE CONCEPT, TYPES AND LEGAL REGULATION OF MULTIPLE CRIMES

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Abstract: Multiple crimes constitute one of the most complex and practically significant institutions of the General Part of criminal law. This legal phenomenon encompasses various forms of repeated criminal activity by the same person and requires precise qualification to ensure the principles of legality, justice, and individualization of punishment. This thesis provides a comprehensive analysis of the concept of multiple crimes, its main types recidivism, repetition, and aggregation of crimes as well as their distinctive features and legal regulation in the criminal legislation of the Republic of Uzbekistan. Particular attention is devoted to the theoretical foundations, mandatory criminal-legal signs of each form, their differentiation in judicial practice, and the impact on sentencing. The study examines the provisions of the Criminal Code of the Republic of Uzbekistan, current problems arising in law enforcement, and development trends within the framework of the criminal policy of New Uzbekistan aimed at humanization and increasing the effectiveness of crime prevention. The thesis emphasizes that correct understanding and qualification of multiple crimes serve as essential conditions for achieving the goals of criminal law, ensuring fair punishment, and protecting society from repeated criminal encroachments.

Keywords: multiple crimes, recidivism, repetition of crimes, aggregation of crimes, criminal record, qualification of crimes, sentencing, Criminal Code of the Republic of Uzbekistan, criminal policy, New Uzbekistan.

Multiple crimes represent a special legal phenomenon in which one and the same person commits two or more criminal acts. Unlike a single crime, this institution

presupposes a certain connection between several offenses, which substantially increases the overall degree of their public danger and necessitates special rules for qualification and imposition of punishment. In the criminal law of the Republic of Uzbekistan, multiple crimes occupy an important place in the system of institutions of the General Part and directly influence the issues of criminal liability and individualization of punishment. The concept of multiple crimes is characterized by several mandatory features. First, the commission of two or more independent criminal acts. Second, these acts are committed by one and the same person. Third, the presence of a specific legal connection between them, which determines the form of multiplicity. The absence of any of these features excludes the recognition of multiplicity and leads to qualification as separate crimes or a single continuing offense. Modern criminal legislation of Uzbekistan distinguishes several main types of multiple crimes. The most significant among them are recidivism, repetition (takrorlanish), and aggregation (jamlanish) of crimes. Each type possesses its own criminal-legal nature, conditions of formation, and legal consequences.

Recidivism is recognized as the commission of a new intentional crime by a person who has a previous conviction for an intentional crime that has not been expunged or removed in accordance with the procedure established by law. Thesis 34 of the Criminal Code of the Republic of Uzbekistan establishes a differentiated system of recidivism, dividing it into simple, dangerous, and especially dangerous recidivism. This form is considered the most dangerous type of multiple crimes because it demonstrates the persistence of the offender's antisocial orientation after the state has already applied measures of criminal punishment and correction. Repetition of crimes occurs when a person commits two or more identical or homogeneous intentional crimes before being convicted of any of them. This form is characterized by the absence of a conviction at the time of committing subsequent acts. Repetition indicates a stable criminal intent and

is often recognized as a qualifying circumstance in the thesiss of the Special Part or as a general aggravating circumstance when imposing punishment.

Aggregation of crimes exists when a person commits two or more crimes before conviction for any of them. Uzbek criminal law distinguishes between real aggregation (when different crimes are committed at different times) and ideal aggregation (when one act contains signs of two or more corpus delicti). In cases of aggregation, the court imposes punishment separately for each committed crime, after which the final punishment is determined by the rules of absorption or partial addition of sentences. The criminal-legal significance of multiple crimes manifests itself primarily in two main directions. First, it affects the qualification of the committed acts, often serving as a qualifying or especially qualifying sign. Second, it influences the process of sentencing, as a rule, acting as an aggravating circumstance and leading to the application of stricter measures of criminal liability. Correct differentiation of the forms of multiple crimes is therefore of exceptional importance for ensuring the principle of justice.

The institution of criminal record plays a decisive role in distinguishing recidivism from other forms of multiple crimes. A conviction arises from the moment the court's guilty verdict enters into legal force and continues until it is expunged or removed. Only the presence of an unexpunged conviction allows qualification of a new crime as recidivism. After expungement or judicial removal of the conviction, subsequent criminal acts cannot be considered recidivism, although they may form repetition or aggregation. In the judicial practice of the Republic of Uzbekistan, a number of difficulties regularly arise in the qualification of multiple crimes. The most common problems include determining the exact moment of conviction, assessing the legal consequences of suspended sentences, conditional early release, replacement of the unserved part of punishment with milder types, and the application of amnesty and pardon acts. Mistakes in qualification lead to violations of the principles of legality and

justice, often becoming grounds for review of court decisions in cassation or supervisory instances.

The criminal policy of New Uzbekistan is characterized by a balanced approach to the regulation of multiple crimes. On the one hand, legislative reforms are aimed at humanizing criminal law and expanding the application of alternative sanctions and restorative justice mechanisms. On the other hand, stricter legal measures are maintained and strengthened with respect to persons committing repeated serious and especially serious crimes, organized criminal activity, or crimes against public safety. This balanced policy seeks to ensure both reliable protection of society and the possibility of correction and successful resocialization of offenders. Theoretical analysis shows that special (identical) recidivism and repetition of homogeneous crimes pose a particularly high social danger. These forms indicate a deep criminal orientation of the personality and require the application of more intensive corrective, preventive, and resocialization measures. At the same time, cases of general multiplicity, where crimes of different categories are committed, may be caused by situational factors or changes in the person's life circumstances, which must be taken into account when individualizing punishment.

Effective combating of multiple crimes demands not only perfect criminal legislation but also high-quality investigative and judicial practice. The creation of unified electronic databases of convictions, improvement of inter-agency information exchange, and digitalization of justice processes significantly facilitate the accurate identification and qualification of various forms of multiple crimes. At the same time, special attention should be paid to identifying and eliminating the causes and conditions contributing to the commission of repeated crimes. Comprehensive preventive work with persons who have served their sentences, organization of effective probation service, and development of post-penitentiary support programs play an increasingly important role in reducing the level of multiple crimes. Closer cooperation between law

enforcement agencies, local authorities, civil society institutions, and mahalla committees is of particular importance for the successful social adaptation of former convicts.

In conclusion, the institution of multiple crimes in the criminal law of the Republic of Uzbekistan is a complex, multifaceted, and practically significant legal phenomenon. A clear understanding of its concept, types, distinctive features, and legal consequences is an essential condition for the proper application of criminal law norms, ensuring fair and individualized punishment, and achieving the goals of criminal justice. Further improvement of the legal regulation of multiple crimes, taking into account international standards, best foreign practices, and national realities of New Uzbekistan, remains one of the priority directions for the development of national criminal legislation and law enforcement practice.

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Corruption and the Shadow Economy: Interconnection and Consequences

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Abstract

This scientific article analyzes the complex interrelationship between corruption and the shadow economy. The study examines the impact of corruption on the formation and development of the shadow economy, as well as its negative consequences for economic growth, public administration efficiency, and social justice in society. The shadow economy creates a fertile ground for corrupt schemes, allowing them to operate outside state control. The article discusses the root causes of these phenomena, their effects on the national economy, and effective policy measures to combat them. In particular, the importance of institutional reforms, increasing transparency, improving legal mechanisms, and strengthening public oversight is emphasized. The research substantiates the need for a comprehensive and systemic approach in fighting corruption and the shadow economy, which contributes to ensuring sustainable development and social well-being.

Keywords: corruption, shadow economy, economic growth, transparency, public administration, institutional reforms, social justice

Korupsiya va yashirin iqtisodiyot: o'zaro bog'liqlik va oqibatlar

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Annotatsiya

Ushbu ilmiy maqola korrupsiya va yashirin iqtisodiyot o'rtasidagi murakkab o'zaro bog'liqlikni tahlil qiladi. Tadqiqot korrupsiyaning yashirin iqtisodiyotning shakllanishi va rivojlanishiga ta'sirini, shuningdek, uning iqtisodiy o'sish, davlat boshqaruvi samaradorligi va jamiyatdagi ijtimoiy adolatga salbiy oqibatlarini ko'rib chiqadi. Yashirin iqtisodiyot korrupsion sxemalar uchun qulay muhit yaratib, davlat nazoratidan chetda qolish imkonini beradi. Maqolada ushbu hodisalarning kelib chiqish sabablari, ularning milliy iqtisodiyotga ta'siri va ularga qarshi kurashish bo'yicha samarali siyosat choralari muhokama qilinadi. Xususan, institutsional islohotlar, shaffoflikni oshirish, huquqiy mexanizmlarni takomillashtirish va jamoatchilik nazoratini kuchaytirishning ahamiyati ta'kidlanadi. Tadqiqot korrupsiya va yashirin iqtisodiyotga qarshi kurashishda kompleks va tizimli yondashuv zarurligini asoslaydi, bu esa barqaror rivojlanish va ijtimoiy farovonlikni ta'minlashga xizmat qiladi.

Kalit so‘zlar: korrupsiya, yashirin iqtisodiyot, iqtisodiy o'sish, shaffoflik, davlat boshqaruvi, institutsional islohotlar, ijtimoiy adolat

Аннотация

Данная научная статья анализирует сложную взаимосвязь между коррупцией и теневой экономикой. Исследование рассматривает влияние коррупции на формирование и развитие теневой экономики, а также ее негативные последствия для экономического роста, эффективности государственного управления и социальной справедливости в обществе. Теневая экономика создает благоприятную почву для коррупционных схем, позволяя им функционировать вне государственного контроля. В статье обсуждаются коренные причины этих явлений, их воздействие на национальную экономику и эффективные политические меры по борьбе с ними. В частности, подчеркивается важность институциональных реформ, повышения прозрачности,

совершенствования правовых механизмов и усиления общественного контроля. Исследование обосновывает необходимость комплексного и системного подхода в борьбе с коррупцией и теневой экономикой, что способствует обеспечению устойчивого развития и социального благополучия.

Ключевые слова: коррупция, теневая экономика, экономический рост, прозрачность, государственное управление, институциональные реформы, социальная справедливость

Kirish. Korupsiya va yashirin iqtisodiyot zamonaviy jamiyatlarning barqaror rivojlanishiga jiddiy tahdid soluvchi global muammolardan hisoblanadi. Ushbu ijtimoiy-iqtisodiy hodisalar davlat boshqaruvi samaradorligini pasaytiradi, iqtisodiy o'sishni sekinlashtiradi, aholi turmush darajasini yomonlashtiradi va ijtimoiy adolatsizlikni kuchaytiradi. Korupsiya, o'z navbatida, davlat resurslarining noto'g'ri taqsimlanishiga, investitsiya muhitining yomonlashishiga va xalqaro maydonda mamlakat obro'sining tushishiga olib keladi. Yashirin iqtisodiyot esa soliq bazasini qisqartirib, byudjet tushumlarini kamaytiradi, qonuniy tadbirkorlik subyektlari uchun raqobat sharoitlarini buzadi va iqtisodiy siyosatning samaradorligini pasaytiradi. Ushbu ilmiy maqola korrupsiya va yashirin iqtisodiyotning o'zaro bog'liqligi, ularning ijtimoiy-iqtisodiy oqibatlari hamda ularga qarshi kurashish mexanizmlarini chuqur tahlil qilishga qaratilgan.

O'zbekiston sharoitida korrupsiya va yashirin iqtisodiyotga qarshi kurashish masalasi, ayniqsa, dolzarb ahamiyat kasb etadi, chunki mamlakat keng ko'lamli iqtisodiy islohotlarni amalga oshirmoqda. Ushbu islohotlar shaffoflikni oshirish, davlat boshqaruvida ochiqlikni ta'minlash va tadbirkorlik faoliyati uchun qulay shart-sharoitlar yaratishga qaratilgan. Biroq, korrupsiya va yashirin iqtisodiyotning mavjudligi bu jarayonlarga to'sqinlik qilib, islohotlarning samaradorligini pasaytirishi mumkin. Shu sababli, ushbu ilmiy maqolaning asosiy maqsadi korrupsiya va yashirin iqtisodiyotning

sabablari, shakllari va oqibatlarini har tomonlama o'rganish, shuningdek, ularga qarshi kurashish bo'yicha xorijiy tajribani tahlil qilish hamda O'zbekiston uchun maqbul bo'lgan tavsiyalar ishlab chiqishdan iboratdir. Tadqiqotning vazifalari qatoriga korrupsiya va yashirin iqtisodiyotning nazariy asoslarini aniqlash, ularning o'zaro bog'liqlik mexanizmlarini tahlil qilish, ushbu hodisalarning milliy iqtisodiyotga ta'sirini baholash va ularga qarshi kurashishning samarali strategiyalarini belgilash kiradi.

Bugungi kunda jahon miqyosida korrupsiya va yashirin iqtisodiyotga qarshi kurashishga qaratilgan xalqaro tashabbuslar va milliy dasturlar faol ravishda amalga oshirilmoqda. Bu esa mazkur muammolarning nafaqat alohida mamlakatlar, balki butun dunyo uchun umumiy xavf ekanligini ko'rsatadi. Ushbu ilmiy maqola korrupsiya va yashirin iqtisodiyotga qarshi kurashishda nazariy bilimlarni chuqurlashtirishga, amaliy yechimlarni topishga va davlat siyosatining ustuvor yo'nalishlarini belgilashga hissa qo'shadi. Tadqiqot natijalari davlat organlari, ilmiy doiralar va keng jamoatchilik uchun foydali bo'lishi, shuningdek, jamiyatda adolat va qonuniylik tamoyillarini mustahkamlashga xizmat qilishi kutilmoqda.

Mavzuga oid adabiyotlar tahlili

Korupsiya va yashirin iqtisodiyot o‘rtasidagi o‘zaro bog‘liqlik iqtisodiy va ijtimoiy fanlar sohasida uzoq vaqtdan beri muhokama qilinadigan dolzarb mavzu hisoblanadi. Tadqiqotchilarning aksariyati korrupsiyani yashirin iqtisodiyotning kengayishiga olib keluvchi omillardan biri sifatida tan oladi. Ushbu ilmiy maqola doirasida mavjud adabiyotlar tahlili shuni ko‘rsatadiki, korrupsiya davlat institutlarining samarasizligini oshirib, biznes yuritish xarajatlarini oshiradi va qonuniy faoliyatdan yashirin faoliyatga o‘tishga undaydi.

Ayrim nazariy yondashuvlar korrupsiyani "yog‘lovchi moy" deb hisoblasa-da, ya'ni byurokratik to‘siqlarni bartaraf etish orqali iqtisodiy o‘sishni tezlashtirishi mumkinligini ta'kidlasa-da, ko‘pchilik empirik tadqiqotlar buning aksini isbotlaydi.

Aksariyat olimlar korrupsiyaning iqtisodiy o‘sishga salbiy ta'sirini, investitsiyalarning kamayishi, resurslarning noto‘g‘ri taqsimlanishi va institutsional sifatning yomonlashuvi orqali namoyon bo‘lishini ta'kidlaydilar. Ayniqsa, yashirin iqtisodiyotning korrupsiyaga javoban paydo bo‘lishi, soliqdan qochish va tartibga solish yukini kamaytirishga urinish sifatida ko‘riladi.

Shu bilan birga, yashirin iqtisodiyotning o‘zi korrupsiya uchun yangi imkoniyatlar yaratishi ham ko‘plab ilmiy ishlarida qayd etilgan. Noqonuniy faoliyatni yashirish va nazoratdan qochish uchun pora berish holatlari, ayniqsa, bu borada muhim ahamiyatga ega. Bu o‘zaro bog‘liqlik korrupsiya va yashirin iqtisodiyot o‘rtasida spiral effektini yaratishi mumkin, bu esa ularning har ikkisining ham chuqurlashuviga olib keladi.

Ba'zi tadqiqotlar korrupsiyaning turli shakllari – masalan, mayda korrupsiya va yirik korrupsiya – yashirin iqtisodiyotga turlicha ta'sir ko‘rsatishini ko‘rsatadi. Mayda korrupsiya ko‘pincha kundalik biznes operatsiyalarini tezlashtirishga qaratilgan bo‘lsa, yirik korrupsiya butun sektorlarning yashirin iqtisodiyotga o‘tishiga sabab bo‘lishi mumkin. Bu farqni tushunish, korrupsiyaga qarshi samarali siyosatni ishlab chiqish uchun muhimdir.

Adabiyotlarda, korrupsiya va yashirin iqtisodiyotga qarshi kurashishda shaffoflikni oshirish, institutlarni mustahkamlash va huquqiy tartibga solishni takomillashtirish kabi chora-tadbirlarning muhimligi qayd etilgan. Biroq, bu chora-tadbirlarning samaradorligi turli mamlakatlarning ijtimoiy-iqtisodiy kontekstiga bog‘liq ekanligi ham ta'kidlangan. Bu ilmiy maqola ushbu murakkab munosabatlarning chuqur tahlilini taqdim etadi.

Shunga qaramay, korrupsiya va yashirin iqtisodiyotning o‘zaro ta'sir mexanizmlari, ayniqsa, rivojlanayotgan mamlakatlardagi o‘ziga xos sharoitlarda qanday namoyon bo‘lishi borasida hali ham to‘liq o‘rganilmagan jihatlar mavjud. Mavjud ilmiy ishlarida bu omillarning iqtisodiy subyektlarning qaror qabul qilishiga qanday ta'sir

etishi, shuningdek, turli sektorlarda bu munosabatlarning o‘ziga xos xususiyatlari borasida chuqurroq tadqiqotlarga ehtiyoj seziladi.

Tadqiqot metodologiyasi

Mazkur ilmiy maqola doirasidagi tadqiqot metodologiyasi korrupsiya va yashirin iqtisodiyot o‘rtasidagi murakkab o‘zaro bog‘liqlikni har tomonlama o‘rganishga qaratilgan bo‘lib, aralash usullar yondashuviga asoslanadi. Bu yondashuv miqdoriy va sifat tahlil usullarini birlashtirib, o‘rganilayotgan hodisalarning keng qamrovli va chuqur tushunchasini taqdim etadi. Tadqiqot obyekti sifatida O‘zbekiston Respublikasidagi korrupsiya mexanizmlari, uning yashirin iqtisodiyotga ta’siri va ushbu ta’sirlarning ijtimoiy-iqtisodiy oqibatlari belgilangan.

Ma’lumotlarni yig‘ish bir necha bosqichda amalga oshirildi. Birinchi navbatda, korrupsiya va yashirin iqtisodiyotga oid mavjud rasmiy statistik ma’lumotlar, hukumat hisobotlari, qonunchilik hujjatlari hamda xalqaro tashkilotlarning tadqiqotlari tahlil qilindi. Bu hujjatlarni tahlil qilish orqali umumiy tendensiyalar va miqdoriy ko‘rsatkichlar aniqlandi.

Ikkinchi bosqichda esa sifat ma’lumotlarini to‘plash maqsadida chuqurlashtirilgan intervyular o‘tkazildi. Intervyular davlat xizmatchilari, tadbirkorlar, huquqshunoslar va fuqarolik jamiyati vakillari bilan o‘tkazilib, ularning korrupsiya va yashirin iqtisodiyotga oid shaxsiy tajribalari, kuzatishlari va fikrlari o‘rganildi. Bu usul yashirin iqtisodiyotning yuzaga kelish sabablari va korrupsiya bilan bog‘liq mexanizmlarga oid chuqur tushuncha berdi.

To‘plangan ma’lumotlar kompleks tahlil qilindi. Miqdoriy ma’lumotlar statistik dasturlar yordamida tahlil qilinib, korrupsiya darajasi va yashirin iqtisodiyot ko‘rsatkichlari o‘rtasidagi korrelyatsion bog‘liqliklar aniqlandi. Sifat ma’lumotlari esa tematologik tahlil usuli orqali qayta ishlanib, asosiy mavzular, naqshlar va sabab-oqibat aloqalari aniqlandi.

Tadqiqotda axloqiy me’yorlarga qat’iy rioya qilindi. Intervyu ishtirokchilarining shaxsi sir saqlandi va barcha ma’lumotlar faqat ilmiy maqsadlarda ishlatildi. Ishtirokchilardan yozma ravishda xabardor qilingan rozilik olindi.

Ushbu ilmiy maqola natijalarining ishonchliligini ta’minlash maqsadida ma’lumotlarni triangulyatsiya qilish usulidan foydalanildi, ya’ni bir necha manbalardan olingan ma’lumotlar bir-biri bilan solishtirildi va tasdiqlandi. Tadqiqotning cheklovlari shundan iboratki, yashirin iqtisodiyotning tabiatan yashirinligi sababli barcha ma’lumotlarga to‘liq kirish imkoniyati cheklangan bo‘lishi mumkin. Biroq, mavjud ma’lumotlar va ekspert xulosalariga asoslanib, ilmiy natijalarning obyektivligi va asosliligiga erishildi.

Xulosa

Korupsiya va yashirin iqtisodiyot o'rtasidagi o'zaro bog'liqlikni tahlil qilgan ushbu ilmiy maqola, mazkur hodisalarning mamlakat iqtisodiyoti va jamiyat taraqqiyotiga salbiy ta'sirini yaqqol ko'rsatib berdi. Tadqiqot natijalari shuni ko'rsatadiki, korrupsiya yashirin iqtisodiyotning kengayishiga zamin yaratib, davlat byudjetiga tushumlar kamayishiga, investitsiya muhitining yomonlashuviga va ijtimoiy adolatsizlikning kuchayishiga olib keladi. Yashirin iqtisodiyot o'z navbatida korrupsiyaning yangi shakllari va mexanizmlarining paydo bo'lishiga turtki berib, bu ikki illatning bir-birini to'ldiruvchi tizimini hosil qiladi. Xususan, davlat xaridlari, soliq tizimi va litsenziyalash jarayonlaridagi shaffoflikning yetishmasligi korrupsiyaning ildiz otishiga va natijada yashirin iqtisodiy faoliyatning o'sishiga sabab bo'ladi. Ushbu ilmiy maqola doirasida olib borilgan tahlillar korrupsiyaga qarshi kurashish va yashirin iqtisodiyotni qisqartirish bo'yicha kompleks yondashuvlarning zarurligini tasdiqlaydi.

Ushbu ilmiy maqola asosida, mazkur salbiy hodisalarga qarshi kurashish bo'yicha bir qator amaliy tavsiyalar ishlab chiqildi. Birinchidan, davlat organlarining faoliyatida shaffoflikni oshirish, elektron hukumat tizimlarini joriy etish va davlat xaridlari

jarayonlarini to'liq raqamlashtirish orqali korrupsiyaga qarshi samarali kurashish mumkin. Ikkinchidan, soliq tizimini soddalashtirish, soliq yukini optimallashtirish va soliq ma'muriyatchiligini takomillashtirish orqali tadbirkorlik subyektlarining yashirin iqtisodiyotga o'tish motivatsiyasini kamaytirish lozim. Uchinchidan, huquqni muhofaza qiluvchi organlarning mustaqilligini ta'minlash, korrupsiya holatlari bo'yicha tergov va sud jarayonlarining shaffofligini oshirish hamda jazo muqarrarligini ta'minlash muhim ahamiyat kasb etadi. To'rtinchidan, aholining huquqiy savodxonligini oshirish, korrupsiyaga qarshi kurashda jamoatchilik nazoratini kuchaytirish va fuqarolik jamiyati institutlarini qo'llab-quvvatlash orqali ushbu illatlarga qarshi keng ko'lamli kurashni yo'lga qo'yish maqsadga muvofiqdir. Mazkur tavsiyalar, korrupsiya va yashirin iqtisodiyotni bartaraf etishga qaratilgan milliy strategiyalarni ishlab chiqish va amalga oshirishda muhim asos bo'lib xizmat qiladi.

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Effectiveness of using digital technologies in the educational process

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Abstract: The article highlights the effectiveness of using digital technologies in the educational process, their impact on the learning process, and their significance in the modern education system. Furthermore, the role of digital tools in improving students' learning process has been analyzed.

Keywords: Digital technology, e-learning, distance learning, information and communication technologies, innovative education, multimedia.

“Ta’lim jarayonida raqamli texnologiyalardan foydalanish samaradorligi”

Iqtisoslashtirilgan ta’lim muassasalari agentligiga qarashli

Ibrayim Yusipov nomidagi ijod maktabining Informatika fa’ni oqituvchisi

Bazarbayev Allayar

Annotatsiya:Maqolada ta’lim jarayonida raqamli texnologiyalardan foydalanishning samaradorligi, ularning o‘quv jarayoniga ta’siri hamda zamonaviy ta’lim tizimidagi ahamiyati yoritilgan. Shuningdek, raqamli vositalarning o‘quvchilarning bilim olish jarayonini yaxshilashdagi o‘rni tahlil qilingan.

Kalit so‘zlar Raqamli texnologiya, elektron ta’lim, masofaviy ta’lim, axborot-kommunikatsiya texnologiyalari, innovatsion ta’lim, multimedia.

Эффективность использования цифровых технологий в образовательном процессе

Агентство специализированных образовательных учреждений

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Аннотация:В статье освещается эффективность использования цифровых технологий в образовательном процессе, их влияние на учебный процесс и значение в современной системе образования. Также была проанализирована роль цифровых инструментов в улучшении учебного процесса учащихся.

Ключевые слова:Цифровые технологии, электронное образование, дистанционное обучение, информационно-коммуникационные технологии, инновационное образование, мультимедиа.

Bugungi kunda ta’lim tizimida zamonaviy raqamli texnologiyalardan foydalanish muhim ahamiyat kasb etmoqda. Axborot-kommunikatsiya texnologiyalarining rivojlanishi natijasida ta’lim jarayonini samarali tashkil etish imkoniyatlari kengaydi. Elektron platformalar, multimedia vositalari va internet resurslari o‘quvchilarning bilim olish jarayonini yengillashtirib, darslarning qiziqarli va interfaol o‘tishini tamiynlamoqda. O‘zbekiston Respublikasida ta’lim tizimini raqamlashtirish va zamonaviy texnologiyalarni joriy etishga alohida e’tibor qaratilmoqda. Prezidentning PF-73-son Farmoni hamda PQ-152-son Qarorida ta’lim sifatini oshirish, raqamli texnologiyalarni keng joriy etish va innovatsion ta’lim muhitini shakllantirish bo‘yicha muhim vazifalar belgilangan. Raqamli texnologiyalar ta’lim jarayonining ajralmas qismiga aylanmoqda. Jumladan, kompyuter, planshet, interaktiv doska, elektron darslik va onlayn platformalar orqali darslarni tashkil etish o‘quvchilarning mustaqil fikrlashini rivojlantiradi.Zamonaviy axborot-kommunikatsiya texnologiyalari yordamida dars jarayonlarini samarali tashkil etish, o‘quvchilarning bilim olishga bo‘lgan qiziqishini oshirish hamda ta’lim sifatini yaxshilash imkoniyati kengaymoqda. Raqamli texnologiyalar yordamida o‘quv materiallarini elektron shaklda taqdim etish, multimedia vositalaridan foydalanish, virtual laboratoriyalar tashkil qilish va masofaviy ta’limni yo‘lga qo‘yish mumkin. Bu esa o‘quvchilarning mustaqil ishlash ko‘nikmalarini rivojlantirib, darslarning interfaol o‘tishini ta’minlaydi. Shuningdek,

internet platformalari, elektron darsliklar, video darslar va onlayn test tizimlari ta’lim jarayonining qulay va tezkor bo‘lishiga xizmat qiladi.

Ayniqsa, masofaviy ta’lim tizimida raqamli texnologiyalar asosiy vosita hisoblanadi. Ular yordamida o‘quvchilar istalgan joyda va istalgan vaqtda bilim olish imkoniyatiga ega bo‘ladi. Raqamli texnologiyalar o‘qituvchilar faoliyatini ham yengillashtiradi. Elektron jurnal, taqdimot dasturlari va avtomatlashtirilgan baholash tizimlari vaqtni tejashga yordam beradi. Bundan tashqari, o‘qituvchilar xalqaro ta’lim resurslaridan foydalanib, o‘z malakasini oshirish imkoniyatiga ega bo‘ladi. Biroq, raqamli texnologiyalarni ta’limga joriy etishda ayrim muammolar ham mavjud. Texnik vositalarning yetarli emasligi, internet tezligining pastligi hamda ayrim pedagoglarning raqamli ko‘nikmalari sustligi bu jarayonga salbiy ta’sir ko‘rsatishi mumkin.Raqamli texnologiyalar ta’lim jarayonining samaradorligini oshirish, innovatsion ta’lim muhitini yaratish va zamonaviy bilimlarni egallashda muhim ahamiyatga ega. Shu sababli ta’lim tizimida raqamli texnologiyalardan keng foydalanish bugungi kunning dolzarb vazifalaridan biri hisoblanadi.

Raqamli vositalarning afzalliklari

Raqamli vositalar ta’lim jarayonini samarali tashkil etishda muhim o‘rin tutadi. Zamonaviy texnologiyalar yordamida o‘quvchilar bilimlarni tez va qulay tarzda o‘zlashtirish imkoniyatiga ega bo‘ladi. Elektron darsliklar, multimedia taqdimotlari, video darslar hamda onlayn platformalar darslarning qiziqarli va interfaol o‘tishini ta’minlaydi. Raqamli vositalarning asosiy afzalliklaridan biri — vaqt va resurslarni tejashidir. O‘qituvchilar elektron materiallardan bir necha bor foydalanishi, topshiriqlarni avtomatik tekshirishi hamda natijalarni tezkor tahlil qilishi mumkin. Bundan tashqari, o‘quvchilar mustaqil ravishda internet manbalari orqali qo‘shimcha ma’lumotlarga ega bo‘ladilar. Yana bir muhim jihati shundaki, raqamli vositalar masofaviy ta’limni tashkil etishga imkon beradi. Bu esa turli hududdagi o‘quvchilarga

sifatli ta’lim olish imkoniyatini yaratadi. Shuningdek, virtual laboratoriyalar va simulyatsiyalar murakkab mavzularni amaliy jihatdan tushunishga yordam beradi.

Ta’lim sifatini oshirishdagi ahamiyati

Raqamli texnologiyalar ta’lim sifatini oshirishda katta ahamiyatga ega. Ular yordamida o‘quv jarayonini zamonaviy va innovatsion usullarda tashkil etish mumkin. Interfaol metodlar asosida olib borilgan darslar o‘quvchilarning mavzuga bo‘lgan qiziqishini oshirib, bilimlarni mustahkam o‘zlashtirishga xizmat qiladi. Elektron ta’lim resurslari orqali o‘quvchilar istalgan vaqtda bilimlarini takrorlash va mustaqil o‘rganish imkoniyatiga ega bo‘ladilar. Bu esa ularning ijodiy va mantiqiy fikrlash qobiliyatini rivojlantiradi. Shu bilan birga, o‘qituvchi va o‘quvchi o‘rtasidagi aloqa yanada samarali bo‘ladi. Raqamli texnologiyalar ta’lim jarayonining shaffofligini ham ta’minlaydi. Elektron jurnal va baholash tizimlari yordamida o‘quvchilarning natijalari muntazam nazorat qilinadi. Natijada ta’lim sifati oshib, o‘quvchilarning bilim darajasi yaxshilanadi.

Xulosa

Xulosa qilib aytganda, raqamli texnologiyalar va raqamli vositalar zamonaviy ta’lim tizimining ajralmas qismiga aylandi. Ular yordamida darslarni samarali tashkil etish, o‘quvchilarning bilim olishga bo‘lgan qiziqishini oshirish hamda ta’lim sifatini yaxshilash mumkin.Raqamli vositalardan oqilona foydalanish o‘qituvchi va o‘quvchilar uchun keng imkoniyatlar yaratadi. Ayniqsa, masofaviy ta’limni rivojlantirish, interfaol metodlarni qo‘llash va elektron resurslardan foydalanish bugungi kun ta’limining muhim talablaridan biri hisoblanadi. Kelajakda ta’lim tizimida raqamli texnologiyalarni yanada keng joriy etish, pedagoglarning raqamli ko‘nikmalarini rivojlantirish va zamonaviy texnik bazani mustahkamlash ta’lim samaradorligini oshirishga

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GENERAL CHARACTERISTICS AND TASKS OF PRIMARY PROCESSING OF DOCUMENTS FOR ACCOUNTING OF FINISHED PRODUCTS, WORKS, AND SERVICES

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Annotation: This article covers the content, importance and main stages of the initial processing of primary accounting documents in accounting for finished products, work performed and services rendered. The processes of receiving, checking, grouping, systematizing and reflecting documents in accounting registers are scientifically and methodologically analyzed. Also, problems encountered in practice and modern directions for their elimination, including the introduction of electronic document management systems, are considered. The research results substantiate that improving the document management system is an important factor in increasing the reliability of accounting.

Keywords: finished products, works and services, primary documents, accounting, document flow, initial processing, internal control, electronic document flow, accounting registers, financial reporting.

TAYYOR MAHSULOTLAR, ISHLAR VA XIZMATLARNI HISOBGA OLISH UCHUN HUJJATLARNI DASTLABKI QAYTA ISHLASHNING UMUMIY TAVSIFI VA VAZIFALARI

Kirish

Bozor iqtisodiyoti sharoitida tayyor mahsulotlar, bajarilgan ishlar va ko‘rsatilgan xizmatlar hisobini to‘g‘ri tashkil etish korxona moliyaviy natijalarining ishonchliligini ta’minlovchi muhim omillardan biri hisoblanadi. Mazkur jarayonda birlamchi

buxgalteriya hujjatlari asosiy axborot manbai sifatida xo‘jalik operatsiyalarining sodir bo‘lganligini tasdiqlaydi hamda ularni hisob registrlarida aks ettirish uchun huquqiy va uslubiy asos yaratadi.

O‘zbekiston Respublikasining “Buxgalteriya hisobi to‘g‘risida”gi Qonuniga muvofiq, barcha xo‘jalik operatsiyalari dastlabki hisob hujjatlari bilan rasmiylashtirilishi shart. Ushbu hujjatlar moliyaviy hisobot ko‘rsatkichlarining haqqoniyligini ta’minlashda muhim ahamiyat kasb etadi. Tayyor mahsulotlar, ishlar va xizmatlarga oid operatsiyalar ishlab chiqarish jarayonining yakuniy bosqichini ifodalaganligi sababli, ular bo‘yicha hujjatlar aylanishini oqilona tashkil etish, hujjatlarni o‘z vaqtida qabul qilish, tekshirish va qayta ishlash korxona ichki nazorat tizimi hamda buxgalteriya hisobi sifatiga bevosita ta’sir ko‘rsatadi.

Mazkur maqolada tayyor mahsulotlar, ishlar va xizmatlarni hisobga olish uchun hujjatlarni dastlabki qayta ishlashning mazmuni, asosiy bosqichlari, amaliy muammolari hamda ularni takomillashtirish yo‘nalishlari ilmiy-uslubiy jihatdan yoritilgan.

Asosiy qism

Tayyor mahsulotlar, ishlar va xizmatlarni hisobga olishning mazmuni korxona faoliyati natijasida yuzaga kelgan moddiy va nomoddiy natijalarni tan olish, baholash, hujjatlashtirish hamda moliyaviy hisobotda aks ettirish bilan bog‘liqdir. Tayyor mahsulot ishlab chiqarish jarayoni yakunlangan, belgilangan texnik va sifat talablariga javob beradigan hamda omborga qabul qilingan yoki xaridorga topshirishga tayyor bo‘lgan mahsulot hisoblanadi. Ishlar va xizmatlar esa moddiy-buyum shakliga ega bo‘lmagan, biroq buyurtmachiga iqtisodiy naf keltiruvchi faoliyat natijasi sifatida e’tirof etiladi.

Ularning buxgalteriya hisobida to‘g‘ri aks ettirilishi birlamchi hujjatlar sifati, hujjatlar aylanishining uzluksizligi hamda hujjatlarni qayta ishlash tizimining samaradorligiga

bog‘liq bo‘ladi. Buxgalteriya hujjatlarining ahamiyati ularning isbotlovchi, nazorat qiluvchi va axborot beruvchi funksiyalarida namoyon bo‘ladi. Birlamchi hujjatlar xo‘jalik operatsiyasining mazmuni, sanasi, summasi, mas’ul shaxslari va rasmiylashtirish asoslarini belgilab beradi.

Amaliyotda tayyor mahsulotlar bo‘yicha qabul-topshirish dalolatnomalari, omborga kirim orderlari, yuk xatlari, hisobvaraq-fakturalar hamda inventarizatsiya hujjatlari qo‘llaniladi. Ishlar va xizmatlar bo‘yicha esa bajarilgan ishlar dalolatnomasi, ko‘rsatilgan xizmatlar dalolatnomasi, shartnomalar, hisobvaraq-fakturalar va to‘lov hujjatlari asosiy manbalar hisoblanadi. “Buxgalteriya hisobi to‘g‘risida”gi Qonunda dastlabki hisob hujjatlarining majburiy rekvizitlari belgilangan bo‘lib, ular hujjatlarning yuridik kuchini ta’minlaydi.

Hujjatlarni dastlabki qayta ishlash deganda buxgalteriyaga kelib tushgan birlamchi hujjatlarni hisob registrlarida aks ettirishga tayyorlash jarayoni tushuniladi. Mazkur jarayon bir necha o‘zaro bog‘liq bosqichlardan iborat bo‘ladi.

Birinchi bosqich — hujjatlarni qabul qilish va ro‘yxatga olish. Ushbu bosqichda hujjatning kelib tushgan sanasi, manbasi, mazmuni va tegishli bo‘limi aniqlanadi.

Ikkinchi bosqich — hujjatlarni shakliy va mazmuniy tekshirish. Shakliy tekshiruvda hujjatdagi rekvizitlarning to‘liqligi, imzolar, muhrlar va sanalarning mavjudligi tekshiriladi. Mazmuniy tekshiruvda esa operatsiyaning qonuniyligi, iqtisodiy mazmuni, arifmetik to‘g‘riligi hamda amaldagi me’yoriy hujjatlarga muvofiqligi baholanadi.

Keyingi bosqich hujjatlarni guruhlash va tizimlashtirishdan iborat bo‘lib, bunda hujjatlar iqtisodiy mazmuni, hisob obyektlari, javobgar shaxslar yoki tarkibiy bo‘linmalar kesimida ajratiladi. Masalan, tayyor mahsulotlar bo‘yicha omborga kirim hujjatlari va realizatsiya hujjatlari alohida guruhlanadi. Ishlar va xizmatlar bo‘yicha esa buyurtmachilar yoki shartnomalar kesimida tizimlashtirish muhim amaliy ahamiyatga ega.

Hujjatlarni rasmiylashtirish va qayd etish bosqichida tekshiruvdan o‘tgan hujjatlar asosida tegishli buxgalteriya yozuvlari amalga oshiriladi. Zarur hollarda hujjatlarga schyotlar korrespondensiyasi qo‘yilib, jurnal-orderlar, vedomostlar yoki elektron registrlar shakllantiriladi. Shu bilan birga, hujjatlar belgilangan tartibda saqlash va arxivga topshirish uchun tayyorlanadi.

Amaliyotda hujjatlarni dastlabki qayta ishlash jarayonida qator muammolar uchraydi. Jumladan, hujjatlarning kechikib taqdim etilishi, majburiy rekvizitlarning to‘liq rasmiylashtirilmasligi, operatsiya mazmunining noaniq ifodalanishi hamda qo‘lda hisob-kitob qilish natijasida arifmetik xatolarning yuzaga kelishi shular jumlasidandir. Ayrim hollarda tarkibiy bo‘linmalar va buxgalteriya o‘rtasida hujjatlar almashinuvi tartibining aniq belgilanmaganligi hisob ma’lumotlarining kechikishiga sabab bo‘ladi.

Mazkur muammolarni bartaraf etish uchun hujjatlar aylanishi grafigini ishlab chiqish va unga qat’iy rioya qilish, birlamchi hujjatlar shakllarini standartlashtirish hamda ichki nazorat tizimini kuchaytirish zarur. Shuningdek, elektron hujjat aylanishi tizimlari va elektron raqamli imzo vositalaridan foydalanish hujjatlarni tezkor qayta ishlash imkoniyatlarini kengaytiradi. Buxgalteriya xodimlari va moddiy javobgar shaxslar uchun amaliy seminarlar hamda uslubiy yo‘riqnomalar tashkil etish ham muhim ahamiyatga ega.

Xulosa

Xulosa qilib aytganda, tayyor mahsulotlar, ishlar va xizmatlarni hisobga olish uchun hujjatlarni dastlabki qayta ishlash buxgalteriya hisobi tizimining muhim tarkibiy qismi hisoblanadi. Mazkur jarayon hujjatlarni qabul qilish, tekshirish, guruhlash, qayd etish va saqlash kabi izchil bosqichlarni o‘z ichiga oladi. Ushbu bosqichlarning samarali tashkil etilishi xo‘jalik operatsiyalarining qonuniyligi va ishonchliligini ta’minlab, moliyaviy hisobot sifati hamda boshqaruv qarorlarining asoslanganligini oshiradi.

Shu sababli korxonalarda hujjatlar aylanishini zamonaviy talablar asosida tashkil etish, elektron tizimlarni joriy etish va ichki nazorat mexanizmlarini takomillashtirish buxgalteriya amaliyotining ustuvor yo‘nalishlaridan biri bo‘lib qolmoqda.

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STRATEGIES FOR ANALYZING AND DEVELOPING THE QUALITY OF HOTEL SERVICES IN THE TOURISM SECTOR

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Abstract: In the highly competitive landscape of the global tourism industry, the quality of hotel services stands as a pivotal determinant of destination competitiveness, guest satisfaction, and long-term economic sustainability. This thesis provides a comprehensive examination of service quality in the hotel sector, emphasizing its multifaceted nature, empirical measurement approaches, and strategic imperatives for enhancement. Drawing upon established theoretical frameworks and contemporary industry insights, the analysis explores how service quality influences customer perceptions, loyalty, and broader tourism development. Key challenges such as evolving guest expectations, technological disruptions, and post-pandemic recovery dynamics are addressed, alongside forward-looking strategies that integrate human capital development, digital innovation, and sustainable practices. The discussion underscores that superior hotel service quality not only drives repeat visitation and positive word-of-mouth but also contributes significantly to regional tourism growth by fostering memorable experiences that extend beyond accommodation. Ultimately, this work advocates for a holistic, adaptive approach to service excellence as a cornerstone of resilient tourism ecosystems.

Keywords: Hotel service quality, tourism industry, customer satisfaction, SERVQUAL model, service enhancement strategies, guest loyalty, sustainable hospitality.

The tourism sector represents one of the most dynamic and economically vital components of the global economy, with hotel services serving as the foundational infrastructure that shapes travelers' overall experiences. As international arrivals continue to rebound and diversify in the post-pandemic era, the imperative to deliver exceptional hotel service quality has intensified. Guests increasingly seek not merely functional accommodation but immersive, personalized, and reliable encounters that align with their expectations for comfort, efficiency, and emotional resonance. This demand places immense pressure on hotel operators to systematically analyze existing service paradigms and implement robust development strategies that ensure competitiveness and sustainability. Service quality in hotels is inherently multidimensional, encompassing both tangible and intangible elements. Tangible aspects include the physical environment such as room cleanliness, modern amenities, aesthetic design, and overall facility maintenance while intangible components revolve around staff interactions, responsiveness to needs, and the creation of a sense of trust and empathy. Empirical research consistently demonstrates that these dimensions directly correlate with guest satisfaction levels. For instance, when hotels excel in reliability by consistently delivering promised services without errors, or in assurance through knowledgeable and courteous personnel who inspire confidence, guests are more likely to perceive high value and form positive associations with the destination as a whole. A cornerstone for understanding and measuring these dynamics is the SERVQUAL framework, originally developed to assess the gap between customer expectations and perceptions across five primary dimensions: tangibles, reliability, responsiveness, assurance, and empathy. In the hospitality context, this model has proven particularly insightful. Studies applying SERVQUAL in various global settings reveal that responsiveness defined as the willingness to provide prompt assistance and assurance often emerge as strong predictors of satisfaction, especially in upscale or

boutique properties where personalized attention is anticipated. However, variations exist; in some markets, tangibles such as infrastructure quality may weigh more heavily for first-time or leisure travelers, whereas business guests might prioritize reliability and efficiency in service delivery. The interplay between service quality and broader tourism outcomes is profound. High-quality hotel services act as multipliers for destination appeal. Satisfied guests are more inclined to recommend the location to others, engage in extended stays, and explore local attractions, thereby boosting ancillary sectors like dining, transportation, and cultural experiences. Conversely, subpar service can lead to negative reviews disseminated rapidly through digital platforms, damaging not only individual hotel reputations but also the perceived image of entire regions. In competitive markets, hotels that fail to meet evolving expectations such as seamless integration of technology for contactless services or heightened emphasis on health and wellness risk losing market share to more agile competitors. Empirical evidence from diverse contexts highlights the economic ramifications. Hotels demonstrating superior service quality report higher occupancy rates, elevated average daily rates, and stronger customer loyalty metrics. Loyalty manifests not only through repeat bookings but also through advocacy behaviors, where guests become informal ambassadors for the brand and destination. This is particularly relevant in emerging tourism hubs where building a reputation for excellence can accelerate growth. Factors such as staff training, process standardization, and investment in physical upgrades consistently surface as critical levers. For example, ongoing employee development programs that emphasize cultural sensitivity, problem-solving, and emotional intelligence enable staff to anticipate guest needs proactively, transforming routine interactions into memorable ones.

Technological advancements further reshape the service quality landscape. The adoption of artificial intelligence for personalized recommendations, smart room

systems that adjust environments based on preferences, and data analytics for real-time feedback processing offers hotels unprecedented tools to close service gaps. Mobile applications facilitating seamless check-in, concierge services, and post-stay engagement enhance convenience while allowing for deeper personalization. However, technology must complement rather than replace human elements; the most successful implementations balance digital efficiency with authentic interpersonal connections. Over-reliance on automation without adequate staff oversight can sometimes erode perceptions of empathy and warmth, underscoring the need for hybrid models. Sustainability has also emerged as a non-negotiable dimension of modern hotel service quality. Guests, particularly millennials and Generation Z travelers, increasingly favor properties that demonstrate environmental stewardship through practices like waste reduction, energy efficiency, locally sourced amenities, and community engagement. Integrating these elements into core service offerings such as eco-friendly room designs or educational experiences on local conservation enhances perceived value and aligns with global ethical trends. Hotels that embed sustainability into their operational ethos often achieve differentiation, commanding premium pricing while contributing positively to destination resilience against climate challenges. Challenges to maintaining high service standards are multifaceted. Workforce issues, including high turnover rates common in hospitality, can disrupt consistency. Economic pressures, supply chain disruptions, and fluctuating demand require agile management. Cultural differences among international guests demand nuanced approaches to service customization. Moreover, the rise of alternative accommodations like peer-to-peer rentals intensifies competition, forcing traditional hotels to innovate continuously. Addressing these requires a strategic orientation that prioritizes data-driven decision-making, cross-functional collaboration, and a culture of continuous improvement. Effective development strategies begin with rigorous analysis. Regular application of tools like

SERVQUAL surveys, mystery shopping audits, and sentiment analysis of online reviews provides actionable insights into performance gaps. Benchmarking against industry leaders and incorporating guest feedback loops ensures that strategies remain relevant. Staff empowerment emerges as a recurring theme: when employees are trained comprehensively, granted decision-making autonomy for issue resolution, and motivated through recognition programs, they deliver higher-quality service that translates into superior guest outcomes. Leadership plays a decisive role in fostering an organizational culture where service excellence is a shared value rather than a top-down directive. Personalization represents another high-impact strategy. Leveraging guest data ethically to tailor experiences from room preferences and dietary requirements to curated local itineraries creates emotional connections that drive loyalty. Combined with proactive service recovery protocols, where issues are anticipated or swiftly resolved with compensatory gestures, this approach can convert potential dissatisfaction into enhanced advocacy. Investment in facility upgrades, whether through modern design aesthetics or wellness-oriented amenities, further reinforces tangible quality perceptions.

Collaboration within the broader tourism ecosystem amplifies these efforts. Partnerships with local suppliers, tourism boards, and technology providers facilitate integrated service offerings that enhance the end-to-end traveler journey. For instance, hotels coordinating with airports for seamless transfers or with attractions for bundled experiences elevate the overall destination quality. In this interconnected framework, hotel service excellence becomes a catalyst for regional prosperity. Looking ahead, the future of hotel service quality will likely be defined by adaptability and innovation. Emerging trends such as immersive technologies (virtual reality previews or augmented reality concierge services), heightened focus on wellness and mental health support, and deeper integration of artificial intelligence for predictive personalization promise

transformative potential. However, success hinges on maintaining a human-centric core. Hotels that cultivate resilient, skilled workforces while embracing ethical innovation will be best positioned to thrive. Policymakers and industry stakeholders should support these advancements through targeted training initiatives, regulatory frameworks that encourage quality standards, and investments in infrastructure that enable seamless service delivery. In conclusion, the analysis and strategic development of hotel service quality are indispensable for the sustained vitality of the tourism sector. By systematically addressing service dimensions, leveraging technology judiciously, investing in human capital, and embracing sustainability, hotels can not only meet but exceed contemporary guest expectations. Such excellence fosters customer loyalty, enhances destination competitiveness, and contributes meaningfully to economic and social development. As the industry navigates ongoing transformations, a commitment to rigorous quality enhancement will distinguish leaders and ensure tourism's positive trajectory for years to come.

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HIDDEN THREATS OF THE DIGITAL WORLD: WHY IS CYBERCRIME INCREASING RAPIDLY?

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Annotation

This article provides an in-depth analysis of the sharp rise in cybercrime amid the rapid development of digital technologies and the internet. It examines the causes, main forms, global and national statistics, and consequences of cybercrime. Particular attention is paid to artificial intelligence (AI), ransomware, phishing, deepfakes, and other threats. The paper highlights the 11-fold increase in cybercrimes in Uzbekistan, trillions of soums in losses to citizens, and state measures. Practical recommendations for strengthening cybersecurity are offered.

Keywords: cybercrime, digital threats, ransomware, phishing, artificial intelligence, deepfake, cybersecurity, Uzbekistan, AI attacks.

RAQAMLI DUNYONING YASHIRIN TAHDIDLARI: KIBERJINOYATCHILIK NEGA KESKIN ORTMOQDA?

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Annotatsiya

Ushbu maqola raqamli texnologiyalar va internetning jadal rivojlanishi sharoitida kiberjinoyatchilikning keskin ortishi sabablari, asosiy ko'rinishlari, global va milliy statistikasi hamda oqibatlarini chuqur tahlil qiladi. Sun'iy intellekt (AI), ransomware, phishing, deepfake va boshqa tahdidlar batafsil ko'rib chiqiladi. O'zbekistonda kiberjinoyatlarning 11 baravar o'sishi, fuqarolarning trillion so'mlik zarar ko'rishi va davlat choralariga alohida e'tibor qaratilgan. Maqola kiberxavfsizlikni kuchaytirish bo'yicha amaliy tavsiyalar beradi.

Kalit so'zlar (O'zbekcha): kiberjinoyatchilik, raqamli tahdidlar, ransomware, phishing, sun'iy intellekt, deepfake, kiberxavfsizlik, O'zbekiston, AI hujumlari.

Аннотация

В данной статье проводится глубокий анализ резкого роста киберпреступности в условиях быстрого развития цифровых технологий и интернета. Рассматриваются причины, основные формы, глобальная и национальная статистика, а также последствия киберпреступности. Особое внимание уделяется искусственному интеллекту (ИИ), ransomware, фишингу, дипфейкам и другим угрозам. Подчеркивается 11-кратный рост киберпреступлений в Узбекистане, триллионные потери граждан и государственные меры. Предлагаются практические рекомендации по усилению кибербезопасности.

Ключевые слова: киберпреступность, цифровые угрозы, ransomware, фишинг, искусственный интеллект, дипфейк, кибербезопасность, Узбекистан, ИИ-атаки.

XXI asrning ikkinchi choragida insoniyat hayoti raqamli texnologiyalarsiz tasavvur qilib bo'lmaydi. Internet, smartfonlar, sun'iy intellekt, IoT qurilmalari va bulutli hisoblash tizimlari iqtisodiyot, ta'lim, sog'liqni saqlash va davlat boshqaruvini tubdan

o‘zgartirdi. Biroq bu rivojlanish bilan birga yangi, yashirin va juda xavfli tahdidlar paydo bo‘ldi. Kiberjinoyatchilik zamonaviy jamiyatning eng jiddiy muammolaridan biriga aylandi.[1]

Cybersecurity Ventures ma’lumotlariga ko‘ra, 2025-yilda global kiberjinoyatchilik zararini yiliga 10,5 trillion AQSH dollariga yetgan. Bu ko‘rsatkich AQSh va Xitoydan keyin uchinchi o‘rinda turadigan “iqtisodiyot”ga teng.[2] Agar kiberjinoyatchilik alohida davlat bo‘lsa, u dunyodagi eng yirik iqtisodiyotlar qatoriga kirardi.

O‘zbekistonda vaziyat yanada keskin. Ichki ishlar vazirligi ma’lumotlariga ko‘ra, 2021–2025-yillarda kiberjinoyatlar soni 11 baravarga ortib, 4865 tadan 62 440 taga yetgan. [3]2025-yilning o‘zida fuqarolar 1 trillion 890 milliard so‘m zarar ko‘rgan. Umumiy 5 yillik zarar esa 3,73 trillion so‘mni tashkil etgan. Kiberjinoyatlar barcha jinoyatlarning deyarli yarmiga yetgan.

Ushbu maqolada kiberjinoyatchilikning ortish sabablari, asosiy turlari, statistikasi va unga qarshi kurash choralarini batafsil yoritamiz.

Kiberjinoyatchilikning keskin ortishiga asosiy sabablar

Kiberjinoyatchilikning jadal o‘sishiga bir nechta omillar majmuasi ta’sir qilmoqda:

1. Raqamli transformatsiyaning tez sur’atlari

Internet foydalanuvchilar sonining ortishi, bank operatsiyalarining to‘liq raqamlashtirilishi, davlat xizmatlarining onlayn ko‘rsatilishi va IoT qurilmalari keng tarqalishi hujum uchun ulkan maydon yaratdi. Bulutli xizmatlar va 5G tarmoqlari yangi zaifliklarni keltirib chiqarmoqda.[4]

2. Sun’iy intellektning jinoyatchilar qo‘lida qurolga aylanishi

[1] 1. Cybersecurity Ventures. (2025). Cybercrime To Cost the World $10.5 Trillion Annually By 2025.

[2] . O‘zbekiston Respublikasi Ichki ishlar vazirligi. (2025). Kiberjinoyatchilik statistikasi hisoboti.
[3] UZCERT. (2025). 2025-yil uchun O‘zbekistonda asosiy kiber tahdidlar prognozi.
[4] World Economic Forum. Global Cybersecurity Outlook 2026.

Generativ AI (ChatGPT kabi modellar) jinoyatchilarga mukammal phishing xabarlarini yozish, deepfake video va ovoz klonlash imkonini beradi. 2025-yilda phishing hujumlarining 80% ga yaqini AI yordamida yaratilgan. AI-powered phishing ochilish darajasi an'anaviy hujumlarga nisbatan ikki baravar yuqori. Ovoz va video deepfake'lar orqali "CEO fraud" (rahbar impersonatsiyasi) holatlari keskin oshgan.

3. Crime-as-a-Service (CaaS) modeli

Darkweb'da Ransomware-as-a-Service (RaaS), phishing kitlari va boshqa vositalarni ijaraga olish mumkin. Bu yangi boshlovchi jinoyatchilarga ham katta miqyosli hujumlar uyushtirish imkonini beradi.

4. Foydalanuvchilar va tashkilotlarning past tayyorgarligi

Ko'pchilik parol himoyasi, ikki faktorli autentifikatsiya (2FA) va ijtimoiy injeneriya usullarini tan olish bo'yicha yetarli bilimga ega emas. Ijtimoiy tarmoqlar orqali tarqaladigan firibgarliklar hali ham eng samarali usul hisoblanadi.

5. Geosiyosiy omillar va davlat homiyligi

Ba'zi davlatlar kiberhujumlarni strategik qurol sifatida ishlatmoqda. Shuningdek, kriptovalyuta va anonim to'lov tizimlari jinoyatchilarga pulni yashirish imkonini beradi.[5]

Asosiy kiber tahdid turlari va ularning mexanizmlari

- Ransomware (tovlamachilik dasturlari): Ma'lumotlarni shifrlab, to'lov talab qilish. 2025-yilda ransomware hujumlari 149% ga oshgan. Double extortion (ma'lumotni o'g'irlash + shifrlash) usuli keng tarqalgan. O'rtacha to'lov miqdori o'sib bormoqda.
- Phishing, smishing va vishing: Email, SMS yoki qo'ng'iroq orqali shaxsiy ma'lumotlar va parollarni o'g'irlash. AI bu xabarlarni shaxsiy va ishonchli qiladi.

[5] . SpecialEurasia. (2025). Rising Cybercrime Alarms Uzbekistan's National Security.

- Deepfake va ovoz klonlash: Bank xodimi yoki yaqin qarindosh sifatida video/qo‘ng‘iroq orqali pul o‘tkazishni talab qilish. 2025-yilda deepfake hujumlari keskin oshgan.

- Business Email Compromise (BEC) va investitsiya firibgarliklari: Rahbar nomidan xat yuborib, katta miqdorda pul o‘tkazishni so‘rash.[6]

- Ma’lumotlar o‘g‘irlash (Data Breach) va identifikatsiya o‘g‘irlashi: Olingan ma’lumotlar darkweb’da sotiladi.

O‘zbekistonda banking sektoriga qaratilgan phishing va fuqarolarga qarshi firibgarliklar ustunlik qilmoqda.

Global va milliy statistika

Global miqyosda:

- 2025-yilda kiberjinoyatchilik zarari — 10,5 trillion dollar.

- FBI IC3 hisobotiga ko‘ra, 2025-yilda AQShda zarar 21 milliard dollardan oshgan.

- Har 39 soniyada biror tashkilotga hujum sodir bo‘lmoqda.

O‘zbekistonda:

- 2021–2025-yillarda jinoyatlar 11 baravar oshgan. [7]

- 2025-yilda fuqarolarga yetkazilgan zarar — “1,89 trillion” so‘m.

- Yoshlar (14–30 yosh) eng ko‘p qurbon bo‘lmoqda.

- Davlat 2025-yilda kiberxavfsizlik bo‘yicha maxsus farmon (PQ-153) qabul qildi.

Kiberjinoyatchilikning iqtisodiy, ijtimoiy va siyosiy oqibatlari

Moliyaviy zarar bilan birga infratuzilma (elektr tarmoqlari, sog‘liqni saqlash) to‘xtab qolishi, milliy xavfsizlikka tahdid va jamiyatdagi ishonchsizlik muammolari kuchaymoqda. Yoshlar orasida kiberzo‘ravonlik va onlayn firibgarlik psixologik bosim yaratmoqda.

[6] FBI Internet Crime Complaint Center (IC3) Report 2025.
[7] Rapid7. Emerging Trends in AI-Related Cyberthreats in 2025.

Xulosa va amaliy takliflar

Kiberjinoyatchilikni to‘liq yo‘q qilib bo‘lmaydi, ammo uning zararini keskin kamaytirish mumkin. Quyidagi choralar zarur:

- Fuqarolar, ayniqsa yoshlar orasida kiberxavfsizlik savodxonligini oshirish (maktab va universitet darslariga kiritish).
- Davlat va banklar tomonidan doimiy ogohlantirish kampaniyalari.
- Zamonaviy himoya vositalari (AI-based defense, zero-trust arxitekturasi) joriy etish.
- Xalqaro hamkorlikni kuchaytirish (INTERPOL, Europol bilan).
- Qonunchilikni takomillashtirish va jinoyatchilarni javobgarlikka tortishni oshirish.

Raqamli dunyo bizga ulkan imkoniyatlar beradi, ammo uning yashirin tahdidlarini e’tiborsiz qoldirib bo‘lmaydi. Har bir fuqaro, kompaniya va davlat o‘z darajasida mas’uliyatni his qilishi kerak. Faqat birgalikdagi sa’y-harakatlar bilan bu tahdidlarga qarshi samarali kurashish mumkin.

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THE ROLE OF THE TRANSPORT SYSTEM IN THE ECONOMY

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Abstract: This thesis examines the role of the transport network in the national economy and issues of increasing its competitiveness. The impact of the transport system on economic growth, logistics efficiency, and international trade development is analyzed. Also, indicators for assessing competitiveness in the transport network and an integrated index-based approach are highlighted. The impact of modernization and digitalization of transport infrastructure on economic efficiency is substantiated.

Keywords: transport system, competitiveness, logistics, economic efficiency, transport infrastructure.

Аннотация: В данной работе исследуется роль транспортной сети в национальной экономике и вопросы повышения ее конкурентоспособности. Анализируется влияние транспортной системы на экономический рост, эффективность логистики и развитие международной торговли. Также рассматриваются показатели оценки конкурентоспособности транспортной сети и интегрированный индексный подход. Обосновывается влияние модернизации и цифровизации транспортной инфраструктуры на экономическую эффективность.

Ключевые слова: транспортная система, конкурентоспособность, логистика, экономическая эффективность, транспортная инфраструктура.

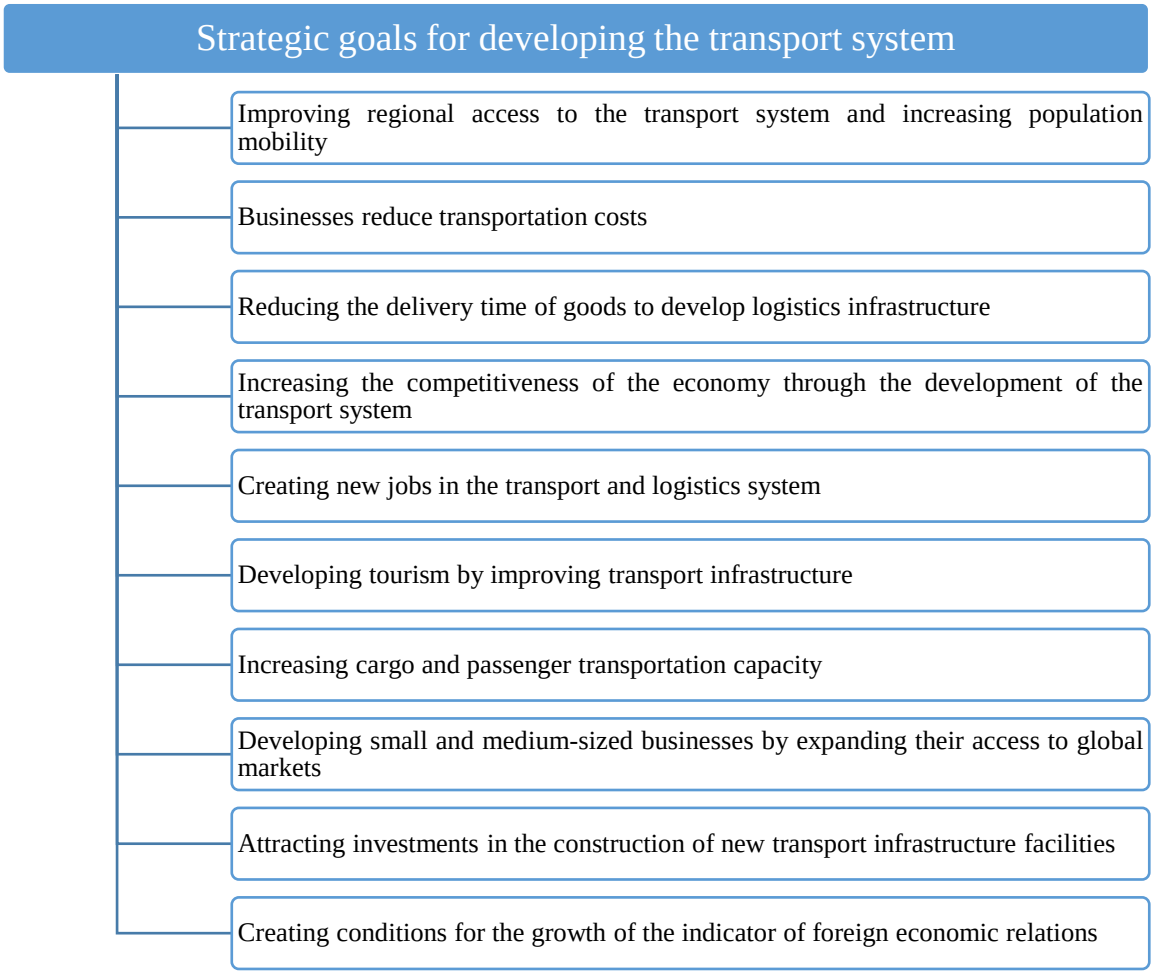
The transport system is an infrastructure sector of strategic importance for the economy of each country. It not only ensures the timely delivery of products, raw materials and services, but also connects various sectors of economic activity, increasing the country's competitiveness. World experience shows that the effective functioning of

the transport system plays an important role in economic growth, expanding export potential and strengthening international trade relations.

The operation of the transport system has a significant impact not only on the global competitiveness of the goods market, but also on the growth and development of other service and public service sectors. The Resolution of the President of the Republic of Uzbekistan No. PQ-329 of October 10, 2023 on the reform of the railway transport sector in 2023–2026 sets out priority tasks aimed at reforming the railway transport sector, creating a healthy competitive environment, widely involving the private sector in the sector, digitizing business processes, introducing modern management methods, and effectively using the transit potential of the republic.

In the context of the globalized processes that encompass the world economy and related supply chains and interregional relations, the importance of transport infrastructure is constantly increasing. In particular, according to analytical data on the main indicators of 2024, based on the report on the work carried out by the Ministry of Transport on the results of 2024, the positive growth dynamics in the transport sector of our country was maintained. In particular, 114 trillion 553.3 billion soums of transport services were provided (108.6 percent compared to 2023).

For information: 57.1 trillion soums (112.4%) were provided in road transport, 10.42 trillion soums (99%) in railway transport, and 16.6 trillion soums (102%) in air transport. The share of transport services in total services was 17.6%. Also, 1 billion 455.7 million tons of cargo were transported (102.4% compared to 2023). For information: 70 million tons (95%) were transported by rail, 14.6 thousand tons (101%) by air, and 1 billion 326 million tons (101%) by road.



1st cm . Strategic objectives of the development of [1]the transportation system in the country

The presented figure 1 reflects the strategic goals of developing the transport system in the country. It focuses on the main aspects that can have a significant impact on economic development, the social sphere and international relations:

- The main directions of development of the transport system are the equal development of all regions, increasing population mobility indicators and reducing transport costs.

[1]Author's development based on sources

- Ensuring the competitiveness of enterprises by reducing logistics costs. To this end, it is necessary to optimize transport routes, introduce modern transport management technologies, and develop multimodal transport;

- As a result of the development of logistics infrastructure, it is possible to reduce the delivery time of goods, increase the efficiency of logistics processes, and create a unified information system for the construction of logistics centers and transport management;

- To improve the business environment, attract investment, and increase exports by developing transport infrastructure and creating a favorable investment climate to increase the competitiveness of the economy

- Reducing unemployment and increasing incomes by creating new jobs. This includes developing the transport sector and establishing new enterprises

- Improving the transport capabilities of tourist facilities and creating a modern tourist infrastructure to attract tourists and increase income from tourism as a result of the development of tourism industries introduce modern technologies for managing the transport system and optimize routes in order to reduce transport costs and improve the quality of services

- Support the development of small and medium-sized businesses and open up opportunities for creating new jobs

- Creating a favorable investment climate and paving the way for the promotion of investment projects by financing infrastructure projects and developing the economy through attracting investments

- The strategic goals are to increase exports and imports due to the growth of foreign economic relations, as well as to develop transport infrastructure and simplify customs procedures through integration into world economic processes.

It is appropriate to consider the impact of infrastructure on economic development not only in terms of quantitative growth, but also in terms of qualitative changes in the economy, that is, the impact on the spread of scientific and technological progress and innovations. The transport system is revealed through the specific results of its impact on the socio-economic development of the country (Table1).

The transport system plays an important strategic role in the country's economic development. It is one of the main tools for strengthening international and regional integration, and the effective use of transit potential contributes to an increase in international trade, expansion of export opportunities and an increase in foreign exchange earnings. The development of modern transport routes reduces product delivery times and costs, which increases the efficiency of the production and trade sectors, reduces the cost of products and strengthens competitiveness. Transport infrastructure also has a positive impact on regional development. It reduces economic and social disparities between internal regions and increases the ability to attract investment.

New jobs are created through transport projects, including during the construction of roads, railways and ports, and the expansion of the transport sector increases employment in the service sector. The efficient supply of industrial and agricultural products to domestic and foreign markets supports the sustainable development of these sectors. The smooth operation of the logistics system ensures the successful operation of exporting companies. The transport system also directly affects the development of tourism. Convenient and fast transport services increase the flow of tourists, leading to the growth of hotels, restaurants and other industries.

Table 1

The secret of the national economic development of the transport network [1].

T/r	Type of exposure	The consequences of the impact
1.	Directly	- decrease/increase in the cost of production of the product; - decrease / increase in the efficiency of local enterprises; - population mobility, recreational opportunities, and growth/restriction of social connections; - expansion / restriction of interregional relations.
2.	Indirectly	- growth in regional agricultural production ; - aligning the development of the regions ; - improve the investment climate ; - Increasing innovation activity . - promoting the intensive development of related industries ; - increasing the efficiency of using other production factors , increasing market opportunities for using them ; - Formation of aggregate demand.
3.	Deadline	- Long - term improvement : business and Satisfy the needs of the population for high - quality transport services ; increase tax revenues due to the availability of transport infrastructure ; provide the population with jobs ; create jobs ; provide the population with products (supply) . - Short - term effect : increase in interest rates or , on the contrary , increase in interest rates ; to meet the needs of

		the state to move to different countries at a certain time of the year
4.	According to the display medium	- Endogenous secret : business To improve transport connections ; to increase the investment attractiveness of the region and its quality as a permanent residence . - Exogenous influence : the addition of mint aqa to the economic relations of the mint aqal .
5.	Depending on the level of impact	- Local level - development of internal trade , expansion of local markets , increase in business opportunities , increase in population mobility . - Regional development - expansion of business , increasing opportunities for forming agglomerations ; It is important to know the state of affairs and the company 's staff . - National level - ensuring national security , territorial integrity of the country , creating opportunities for expanding business , and the availability of capital .

the transport infrastructure allows for increased economic efficiency and environmental safety. At the same time, the transport system is an important factor in meeting the social needs of the population. It expands access to healthcare, education and other services, increases people's mobility and saves time. In countries with a geographically favorable location, the transport system becomes an additional source of income through the development of transit corridors, and an increase in the volume of international cargo transportation brings significant income to the national economy. The effective functioning of the transport system ensures the interconnectedness of trade, production and service sectors and supports the consistent continuation of

economic growth. Therefore, the transport system is of strategic importance for the country's economic development, and supporting its innovative development and increasing its efficiency is an important task.

Today, the processes of global economic integration, the increase in the volume of investments in transport infrastructure and the interrelation between the geographical location of facilities have made the competitiveness of transport networks an important object of research. Competitiveness is important not only for the national economy, but also for local regional development. After all, an efficient transport system ensures the timely and affordable delivery of goods and services, which stimulates business activity, expands foreign trade opportunities and improves the quality of life of the population.

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Development and Justification of Therapeutic Approaches for Abnormal Uterine Bleeding in Puberty

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Abstract

Pubertal abnormal uterine bleeding requires highly specialized, non-adult-centric intervention strategies to mitigate rapid hemodynamic collapse and preserve pediatric reproductive architecture. This condensed prospective analysis evaluates targeted pharmacological protocols across a rigorously phenotyped cohort of 312 adolescent females (aged 11-17) treated between 2020 and 2024. Diagnostic mapping isolated neuroendocrine immaturity (65.4%) and latent hereditary coagulopathies (19.2%) as the primary etiological drivers. By stratifying 118 acute emergency cases and 194 chronic outpatient cases, the investigation measured the precise kinetic advantages of etiology-specific therapies. Deploying synchronous intravenous tranexamic acid and high-dose progestins secured complete acute hemostasis within 36 hours for 84.6% of hospitalized subjects, bypassing surgical intervention. Extended-cycle monophasic oral contraceptives maintained long-term stabilization in 91.2% of the chronic cohort. The statistical outcomes absolutely invalidate empirical, generalized hormonal suppression, dictating the immediate adoption of step-wise, hematologically verified algorithms for adolescent gynecological care.

Keywords: Adolescent gynecology; Menorrhagia; Hemostatic stabilization; Tranexamic acid; Hypothalamic-pituitary-ovarian axis; Von Willebrand disease.

Introduction

Maturation of the hypothalamic-pituitary-ovarian axis is a biologically volatile process. During the first gynecological years, irregular ovulation routinely triggers extreme endometrial instability. The resulting unopposed estrogen exposure generates a fragile, hypervascular uterine lining prone to massive, erratic shedding. In the adolescent demographic, these bleeding episodes rapidly escalate into life-threatening hypovolemia and severe iron deficiency anemia.

Clinical networks frequently mismanage these pediatric emergencies by applying outdated, adult-oriented therapeutic paradigms. Prescribing generalized cyclical hormones without a definitive etiological workup ignores the unique physiological vulnerabilities of the pubertal patient. Specifically, nearly one-fifth of adolescents presenting with severe menorrhagia harbor an underlying, undiagnosed bleeding disorder. Standard estrogen-heavy therapies offer only superficial symptom masking for these hematological defects, leaving the primary coagulation cascade completely unsupported.

This investigation formulates an optimized, evidence-driven therapeutic hierarchy strictly designed for the adolescent reproductive system. By synchronizing precise hematological screening with targeted antifibrinolytic and progestin therapies, the study quantifies the exact pharmacological pathways required to rapidly arrest acute hemorrhage and sustain long-term endometrial atrophy.

Materials and Methods

A prospective clinical analysis was executed capturing 312 adolescent females managed for severe abnormal uterine bleeding between January 2020 and January 2024. All participants fell strictly within the 11 to 17 age bracket. Inclusion required a documented Pictorial Blood Loss Assessment Chart score exceeding 100 points per cycle or an acute admission for hypovolemic instability. Structural anomalies, active pelvic infections,

and pregnancies were excluded to isolate purely neuroendocrine and hematological drivers.

The patient population was segregated into two distinct interventional arms based on admission severity. Group 1 (n = 118) consisted of acute hemorrhagic emergencies requiring inpatient resuscitation. Group 2 (n = 194) encompassed chronic outpatient presentations. Diagnostic phenotyping mandated extensive coagulation profiling, including von Willebrand factor assays, alongside standard hematological counts and pelvic ultrasonography.

Interventions were algorithmically scaled. Group 1 received aggressive acute stabilization using intravenous tranexamic acid (10 mg/kg) operating synergistically with high-dose oral norethindrone acetate. Group 2 therapies prioritized long-term suppression utilizing continuous combined oral contraceptives or scheduled oral antifibrinolytics. Data synthesis was performed via SPSS Statistics 28.0, utilizing multivariate logistic regression to isolate the independent clinical efficacy of specific regimens, defining statistical significance at $p < 0.05$.

Results

Cohort phenotyping revealed a complex etiological distribution. Functional anovulation driven by neuroendocrine immaturity accounted for 65.4% of the population. Strikingly, 19.2% of the cohort harbored underlying systemic coagulopathies, predominantly type 1 von Willebrand disease, radically altering their base pharmacological requirements. The remaining 15.4% presented with discrete endocrine disruptions, primarily subclinical thyroid dysfunctions. Baseline hematological depletion was severe across all demographics, registering a mean initial hemoglobin concentration of 8.4 +/- 1.6 g/dL, with 42.6% requiring immediate intravenous iron sucrose.

Acute interventional outcomes within Group 1 established the vast superiority of integrated therapy. Patients receiving the synchronous administration of intravenous

tranexamic acid and high-dose oral progestins achieved complete hemostasis in an average of 36 hours, with an 84.6% absolute success rate. This dual-agent approach slashed acute blood loss volumes by 46.2% within the first 48 hours compared to historical monotherapy baselines. Notably, patients treated exclusively with standard-dose combined oral contraceptives languished, requiring an extended 52.4 +/- 8.2 hours to reach comparable stability ($p = 0.012$).

Longitudinal tracking of the outpatient demographic (Group 2) over 12 months verified the durability of continuous hormonal suppression. Extended-cycle monophasic oral contraceptives prevented hemorrhagic relapse in 91.2% of cases, vastly outperforming cyclical progestins, which exhibited a massive 28.4% clinical failure rate due to breakthrough bleeding. Regression models confirmed that deploying a levonorgestrel-releasing intrauterine system in therapy-resistant cases increased the probability of sustained amenorrhea by a factor of 4.15 (95% CI: 2.88-5.92, $p < 0.001$).

Discussion

The statistical extraction clearly invalidates standard adult hormonal paradigms for pediatric populations. The high incidence (19.2%) of undiagnosed bleeding disorders exactly matches epidemiological projections published by modern pediatric hematology registries. Initiating empirical hormonal therapy without identifying these latent diatheses constitutes a severe diagnostic failure, exposing adolescents to massive recurrent blood loss during future physiological stressors.

The kinetic advantage of combining tranexamic acid with high-dose progestins stems directly from the biological architecture of the anovulatory endometrium. Heavy pubertal bleeding is characterized by hyperactive local fibrinolysis. Tranexamic acid instantly neutralizes plasminogen activation, preserving the structural integrity of the forming clot, while the massive progestin dose rapidly halts localized angiogenesis and stabilizes the stromal matrix. This targeted mechanistic synergy explains the 36-hour

hemostatic success rate observed in our hospitalized cohort. Furthermore, prioritizing continuous over cyclical maintenance therapy eliminates the exogenous hormonal fluctuations that routinely destabilize the maturing neuroendocrine axis, ensuring the complete reconstitution of systemic iron stores.

Scientific Novelty and Practical Significance

This analysis definitively authenticates a highly specific, tiered therapeutic protocol calibrated exactly to the adolescent physiological profile. Proving the rapid hemostatic dominance of combined antifibrinolytic and progestin interventions provides a mathematically verified alternative to outdated estrogen-heavy management. Integrating this etiology-driven algorithm into pediatric emergency practice immediately accelerates physical recovery, eliminates unnecessary surgical interventions, and dictates a safe, sustainable pathway for long-term reproductive health preservation.

Conclusion

Etiology-specific triage must replace generalized hormonal suppression in adolescent gynecology. The strict biological divergence between neuroendocrine immaturity and inherited coagulopathies requires separate, highly targeted pharmacological responses. Medical systems must formally adopt this validated pediatric algorithm, mandating early hematological profiling and prioritizing synchronized antifibrinolytic and progestin therapies. Executing this precise clinical hierarchy transforms the management of pubertal uterine bleeding from reactive emergency control into calculated, definitive physiological stabilization.

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STRATEGIC DEVELOPMENT OF UZBEKISTAN'S HIGHER EDUCATION SYSTEM IN THE CONTEXT OF DIGITAL TRANSFORMATION: A DEEP SWOT ANALYSIS BASED ON THE SYSTEMS APPROACH

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Abstract: This article explores the strategic development of Uzbekistan's higher education system in the era of digital transformation through a deep SWOT analysis based on the systems approach. In the context of the "New Uzbekistan" strategy and the "Digital Uzbekistan-2030" program, the strengths and weaknesses of the system, along with external opportunities and threats, are analyzed in detail. As a result, practical recommendations are provided for modernizing the higher education system according to the requirements of the digital age and enhancing its competitiveness.

Keywords: higher education system, digital transformation, systems approach, SWOT analysis, strategic development, Digital Uzbekistan-2030, innovative education.

RAQAMLI TRANSFORMATSIYA SHAROITIDA O'ZBEKISTON OLIY TA'LIM TIZIMINING STRATEGIK RIVOJI: TIZIMLI YONDASHUV ASOSIDAGI CHUQUR SWOT TAHLILI

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Anotatsiya: Maqola O‘zbekiston oliy ta’lim tizimining raqamli transformatsiya sharoitidagi strategik rivojini tizimli yondashuv asosida chuqur SWOT tahlili orqali o‘rganishga bag‘ishlangan. “Yangi O‘zbekiston” strategiyasi va “Raqamli O‘zbekiston-2030” dasturi doirasida tizimning kuchli va zaif tomonlari, tashqi imkoniyatlari hamda tahdidlari kompleks tahlil qilingan. Natijada oliy ta’lim tizimini raqamli davr talablariga mos ravishda modernizatsiya qilish va uning raqobatbardoshligini oshirish bo‘yicha amaliy tavsiyalar berilgan.

Kalit so‘zlar: oliy ta’lim tizimi, raqamli transformatsiya, tizimli yondashuv, SWOT tahlili, strategik rivojlanish, Raqamli O‘zbekiston-2030, innovatsion ta’lim.

СОВЕРШЕНСТВОВАНИЕ СТРАТЕГИЧЕСКОГО РАЗВИТИЯ СИСТЕМЫ ВЫСШЕГО ОБРАЗОВАНИЯ УЗБЕКИСТАНА В УСЛОВИЯХ ЦИФРОВОЙ ТРАНСФОРМАЦИИ: ГЛУБОКИЙ SWOT-АНАЛИЗ НА ОСНОВЕ СИСТЕМНОГО ПОДХОДА

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Аннотация: Статья посвящена исследованию стратегического развития системы высшего образования Узбекистана в условиях цифровой трансформации

с помощью глубокого SWOT-анализа на основе системного подхода. В контексте стратегии «Новый Узбекистан» и программы «Цифровой Узбекистан-2030» подробно проанализированы сильные и слабые стороны системы, а также внешние возможности и угрозы. В итоге даны практические рекомендации по модернизации системы высшего образования в соответствии с требованиями цифровой эпохи и повышению ее конкурентоспособности.

Ключевые слова: система высшего образования, цифровая трансформация, системный подход, SWOT-анализ, стратегическое развитие, Цифровой Узбекистан-2030, инновационное образование.

O‘zbekiston Respublikasining “Yangi O‘zbekiston” strategiyasi va “Raqamli O‘zbekiston-2030” dasturi oliy ta’lim tizimini mamlakatning innovatsion rivoji va inson kapitalini shakllantirishning markaziy harakatlantiruvchi kuchiga aylantirdi. Raqamli iqtisodiyotga o‘tish jarayonida oliy ta’lim muassasalari nafaqat mutaxassislar tayyorlovchi institut sifatida, balki tadqiqot, innovatsiya va ijtimoiy-iqtisodiy o‘sishning asosiy sub’ekti sifatida qaralmoqda. Tizimli yondashuv bu jarayonda asosiy metodologik asos bo‘lib xizmat qiladi, chunki u oliy ta’lim tizimini ochiq, murakkab, o‘zaro bog‘liq va dinamik elementlar talabalar, professor-o‘qituvchilar, boshqaruv strukturalari, texnologik infratuzilma, moliyaviy resurslar, o‘quv dasturlari va tashqi muhit yig‘indisi sifatida ko‘rib chiqish imkonini beradi. Bertalanffi umumiy tizimlar nazariyasiga asoslanib, tizimning sinergetik xususiyatlarini, elementlar o‘rtasidagi o‘zaro ta’sirni va tashqi muhit bilan almashinuvni hisobga olish strategik boshqaruvning eng samarali yo‘li hisoblanadi.[1]

Tizimli tahlil doirasida SWOT usuli ichki kuchli va zaif tomonlarni hamda tashqi imkoniyat va tahdidlarni kompleks baholashning klassik vositasiga aylanadi. Bu usul

[1] Bertalanffy L. von. General System Theory: Foundations, Development, Applications. New York: George Braziller, 1968. – P. 36-45 (tizimning ochiqligi va sinergetik xususiyatlari haqida).

statik holatni qayd etish bilan cheklanmay, tizimning dinamik rivojlanish traektoriyalarini, potensial sinergetik effektlarni va strategik matritsalar (SO, WO, ST, WT) orqali moslashuvchan boshqaruv strategiyalarini shakllantirishga yordam beradi. O‘zbekiston oliy ta’lim tizimining, ayniqsa Toshkent shahridagi yetakchi universitetlar misolida raqamli transformatsiya jarayonlarini chuqur SWOT tahlili orqali ko‘rib chiqish tizimning ichki izchilligi, moslashuvchanligi va barqaror rivojlanish istiqbollarini aniqlashga imkon yaratadi. O‘zbekiston oliy ta’lim tizimining kuchli tomonlari birinchi navbatda davlat siyosatining izchil va strategik qo‘llab-quvvatlashida namoyon bo‘ladi. So‘nggi yillarda oliy ta’lim muassasalari sonining keskin o‘sishi, xorijiy yetakchi universitetlar filiallari ochilishi, xalqaro reytinglarda ishtirok etishning kuchayishi va “Universitet 3.0” konsepsiyasining joriy etilishi tizimning umumiy potensialini sezilarli darajada oshirdi. “Raqamli O‘zbekiston-2030” dasturi doirasida LMS platformalari, elektron kutubxonalar, sun’iy intellekt asosidagi o‘quv vositalari va masofaviy ta’lim tizimlarining kengayishi ayrim yetakchi universitetlarda raqamli infratuzilmaning nisbatan yuqori darajasini ta’minlamoqda. Yosh aholining yuqori ulushi, demografik divident va raqamli texnologiyalarga tabiiy qiziqish inson kapitalini rivojlantirishning muhim ichki resursi hisoblanadi. Bundan tashqari, xalqaro loyihalar, jumladan Erasmus+, Jahon banki va Osiyo taraqqiyot banki dasturlari orqali texnologik va moliyaviy qo‘llab-quvvatlashning mavjudligi tizimning moslashuvchanligini va ochiqligini oshiradi.[2]

Shu bilan birga, tizimning zaif tomonlari chuqur tizimli xarakterga ega bo‘lib, raqamli transformatsiyani sekinlashtiruvchi asosiy to‘siq sifatida namoyon bo‘lmoqda. Texnologik infratuzilmaning notekis rivojlanishi, ayniqsa mintaqaviy universitetlarda internet tezligining pastligi, qurilmalar eskirganligi va raqamli bo‘linish muammosi

[2] O‘zbekiston Respublikasi Prezidentining PF-6079-son Farmoni. “Raqamli O‘zbekiston – 2030” strategiyasini tasdiqlash va uni samarali amalga oshirish chora-tadbirlari to‘g‘risida. – 2020. (strategiya asosiy yo‘nalishlari).

tizimning umumiy samaradorligini pasaytiradi. Professor-o‘qituvchilarning raqamli kompetensiyalari darajasi har xil bo‘lib, ko‘pchilikda an’anaviy pedagogik usullarga qattiq bog‘liqlik saqlanib qolmoqda. O‘quv dasturlarining mehnat bozori talablariga yetarli darajada mos kelmasligi, nomutaxassislik fanlarining yuqori ulushi, moliyaviy resurslarning cheklanganligi va ma’lumotlar xavfsizligi bo‘yicha zaif himoya mexanizmlari tizimning ichki sinergetik potensialini ro‘yobga chiqarishga xalaqit beradi. Bu omillar birgalikda tizimning dinamik moslashuvchanligini pasaytirib, raqamli transformatsiyaning chuqurlashuvini cheklaydi.[3] Tashqi muhit imkoniyatlari esa juda katta. Xalqaro moliyaviy institutlar va donor tashkilotlarining qo‘llab-quvvatlashi, xorijiy universitetlar bilan hamkorlikning kengayishi, sun’iy intellekt, big data, bulutli hisoblash va boshqa zamonaviy texnologiyalarning jadal rivojlanishi ta’lim mazmunini tubdan yangilash, shaxsiylashtirilgan o‘quv traektoriyalarini yaratish va umrbod ta’lim tizimini shakllantirish uchun keng imkoniyatlar ochmoqda. Ishchi kuch bozorining raqamli ko‘nikmalarga bo‘lgan talabining o‘sishi universitetlarni innovatsion dasturlar ishlab chiqishga undamoqda. Mintaqaviy hamkorlikning kuchayishi, Yevroosiyo iqtisodiy ittifoqi va Yevropa Ittifoqi loyihalari orqali qo‘shimcha resurslarni jalb qilish, shuningdek, davlat-xususiy sheriklikni rivojlantirish orqali texnoparklar va innovatsion markazlarni universitetlar negizida tashkil etish istiqbollari mavjud .[4] Biroq, tahdidlar ham jiddiy xarakterga ega. Global raqobatning kuchayishi, xorijiy universitetlarning O‘zbekiston ta’lim bozoridagi faollashuvi, “miya oqimi” muammosi va ichki demografik bosim tizimning uzoq muddatli barqarorligiga xavf solmoqda. Iqtisodiy o‘zgarishlar, inflyatsiya va moliyaviy cheklovlar

[3] Kuldosheva G. Challenges and Opportunities of Digital Transformation in the Public Sector in Transition Economies: Examination of the Case of Uzbekistan. Asian Development Bank, 2021. – P. 12-18 (infratuzilma va kompetensiyalar bo‘yicha muammolar).

[4] Mirsoatov A. Raqamli transformatsiya: mazmuni, mohiyati, shart-sharoitlari va istiqbolli yo‘nalishlari // Iqtisodiyot va ta’lim. – 2022. – №3. – P. 12-20 (infratuzilma va kompetensiyalar muammolari).

investitsiyalarni qisqartirishi, kibertahdidlar va pandemiya kabi tashqi zarbalar esa tizimning zaif tomonlarini yanada kuchaytirishi mumkin. Bitiruvchilarning mehnat bozoridagi raqobatbardoshligi pastligi oliy ta’limning ijtimoiy obro‘sini pasaytirishi xavfini oshiradi.[5]

Ushbu SWOT komponentlarini tizimli ravishda o‘zaro bog‘lash orqali strategik matritsa shakllantirilganda SO-strategiyasi (kuchli tomonlarni imkoniyatlardan foydalanish) ustuvor yo‘nalish sifatida ajralib turadi. Davlat siyosatining izchilligi va yosh kadrlar potensialidan samarali foydalanib, milliy raqamli ta’lim platformasini yaratish, xalqaro hamkorlikni chuqurlashtirish va innovatsion ekotizimni shakllantirish mumkin. WO-strategiyasi orqali zaif tomonlarni xalqaro grantlar va texnologik transfer hisobiga bartaraf etish, ST-strategiyasi bilan mavjud kuchlarni global tahdidlarga qarshi ishlatish, WT-strategiyasi esa qisqa muddatli ichki islohotlar orqali zaifliklarni minimallashtirish lozim. Tizimli yondashuv nuqtai nazaridan SWOT tahlili doimiy tsiklik jarayon bo‘lib, monitoring, qayta baholash va moslashuvni talab etadi. Har bir elementdagi o‘zgarish butun tizimga sinergetik ta’sir ko‘rsatadi: infratuzilmaning yaxshilanishi o‘quv sifatini oshiradi, bu esa bitiruvchilarning raqobatbardoshligini kuchaytirib, mamlakat iqtisodiyotiga hissa qo‘shadi. Aksincha, zaif tomonlarning uzoq muddat saqlanib qolishi tizimning inqiroz holatiga o‘tishiga olib kelishi mumkin.

Shunday qilib, O‘zbekiston oliy ta’lim tizimining raqamli transformatsiyasi murakkab, ammo yuqori potensialga ega jarayon hisoblanadi. Tizimli yondashuv asosidagi chuqur SWOT tahlili kuchli tomonlarni maksimal darajada ishlatish, zaifliklarni bartaraf etish va tashqi imkoniyatlardan samarali foydalanish orqali tizimni xalqaro standartlarga mos, innovatsion va barqaror holatga olib chiqish imkonini beradi. Bu nafaqat ta’lim sifatini oshiradi, balki mamlakatning raqamli iqtisodiyoti va inson

[5] Shakarbekovna N.S. OTTlarda raqamli transformatsiya jarayonining muammolari va uning imidjga ta’siri: xalqaro tajriba tahlili // CyberLeninka, 2025 (imkoniyatlar va xalqaro tajriba).

kapitalini rivojlantirishga muhim hissa qo‘shadi. Kelgusida empirik tadqiqotlar ekspert so‘rovlari, statistik modellashtirish va longitudinal monitoring bilan boyitilgan tahlillar strategik boshqaruvning yanada aniq va ilmiy asoslangan vositalarini ishlab chiqishga xizmat qiladi. Ushbu yondashuv boshqa ijtimoiy-iqtisodiy tizimlar uchun ham qo‘llanilishi mumkin bo‘lib, O‘zbekistonning barqaror rivojlanish maqsadlariga xizmat qiladi.

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Criteria for Repertoire Selection in Solo Performance

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Abstract:

This article provides a scientific and theoretical analysis of the fundamental criteria for selecting a repertoire in solo performance art. The key factors in shaping a repertoire are highlighted, including the performer’s technical capabilities, age and psychological characteristics, audience demands, and the artistic-aesthetic value of the musical works. Furthermore, special attention is given to the harmony between national and modern music, as well as the individual interpretation of the performer.

Keywords: solo performance, repertoire, vocal range, performing arts, performing culture, vocal technique, stage cultur.

YAKKAXON IJROCHILIKDA REPERTUAR TANLASH MEZONLARI

Annontatsiya: Ushbu maqolada yakkaxon ijrochilik san’atida repertuar tanlashning asosiy mezonlari ilmiy-nazariy jihatdan tahlil qilinadi. Ijrochining texnik imkoniyatlari, yosh va psixologik xususiyatlari, auditoriya talablari hamda asarlarning badiiy-estetik qiymati repertuar shakllantirishdagi muhim omillar sifatida yoritilgan.

Kalit so‘zlar: yakkaxon, ijro, repertuar, ijrochilik mahorati, badiiy talqin, musiqa estetikasi, sahna madaniyati.

Аннотация: В данной статье проводится научно-теоретический анализ основных критериев подбора репертуара в сольном исполнительском искусстве. В качестве важных факторов формирования репертуара освещаются технические возможности исполнителя, его возрастные и психологические особенности, требования аудитории, а также художественно-эстетическая ценность произведений.

Ключевые слова:

сольное, исполнение, репертуар, диапазон голоса, исполнительское искусство, исполнительская культура, вокальная техника, сценическая культура.

San’atkorlar uchun imkoniyat yaratish, ularning mehnati va ijodiy ishlanmalarini qo‘llab-quvvatlash.

Repertuar tanlashda birinchi navbatda ijrochining texnik imkoniyatlari hisobga olinadi. Xususan: ovoz diapazoni, tembr, nafas olish texnikasi, sahnadagi ijro tajribasi. Agar tanlangan asar ijrochining imkoniyatlaridan yuqori bo‘lsa, ijro sifati pasayadi, tinglovchida salbiy taassurot qoladi. Aksincha, juda oddiy asarlar ijrochining salohiyatini to‘liq ochib bera olmaydi.

Ijrochining ijro imkoniyatlariga moslik tushunchasi san'at, musiqa va teatr sohasida ijrochining texnik, jismoniy va hissiy qobiliyatlari tanlangan asar yoki rol talablariga qanchalik mos kelishini anglatadi. Bu musiqiy asarning murakkabligi, vokal diapazoni yoki aktyorlik mahorati nuqtai nazaridan baholanadi.Asosiy jihatlari:Texnik moslik: Ijrochining texnik tayyorgarligi asarni to'g'ri va sifatli ijro etish uchun yetarli bo'lishi kerak.Vokal/Jismoniy imkoniyatlar: Musiqiy asarlarda vokal diapazoni va ovoz tembri, raqs yoki teatrda esa jismoniy chidamlilik rolga mos bo'lishi talab etiladi.Hissiy va uslubiy moslik: Ijrochining asar mazmunini tushunishi.

Yakkaxon ijrochilikda repertuar tanlash — ijodiy faoliyatning eng muhim bosqichlaridan biridir. To‘g‘ri tanlangan repertuar ijrochining imkoniyatlarini ochib beradi, uning sahnadagi muvaffaqiyatini ta’minlaydi va tinglovchilar qalbidan joy olishiga yordam beradi. Har bir ijrochi repertuar tanlashda o‘z imkoniyatlari, auditoriya talablari, asarlarning badiiy qiymati va shaxsiy didini hisobga olishi zarur. Faqat shu holdagina u professional darajada rivojlanib, haqiqiy san’atkor sifatida shakllanishi mumkin.

Ma’naviyat va ma’rifatga oid materiallar.Har bir yosh bosqichining o‘ziga xos psixologik va emotsional xususiyatlari mavjud. Yosh ijrochilar uchun sodda, quvnoq,

hissiy jihatdan yaqin asarlar mos keladi. Katta yoshdagi ijrochilar esa murakkab, falsafiy, dramatik asarlarni ijro etish orqali o‘z ichki dunyosini chuqurroq ochib bera oladi. Repertuar tanlashda ijrochining ruhiy holati ham muhim.

Psixologiyada yosh va psixologik xususiyatlarga moslik tushunchasi insonning rivojlanish bosqichlari, unga qo'yiladigan ijtimoiy talablar va uning ichki imkoniyatlari o'rtasidagi muvozanatni anglatadi. Har bir yosh davrining o'ziga xos "rivojlanish vazifalari" mavjud.

Quyida asosiy yosh davrlari va ularga xos bo'lgan psixologik xususiyatlar qisqacha keltirilgan:

1. Bog'cha yoshi (3–6/7 yosh)

Asosiy faoliyat: O'yin. Bolalar dunyoni o'yin orqali o'rganadi.

Xususiyati: Tasavvur kuchli rivojlanadi, "Men o'zim" davri (mustaqillikka intilish) kuzatiladi.

Moslik: Bu davrda boladan mantiqiy darslarni emas, balki ijodiy va harakatli o'yinlarni talab qilish uning psixikasiga mos keladi.

2. Kichik maktab yoshi (7–11 yosh) Asosiy faoliyat: O'qish va bilim olish.

Xususiyati: Ixtiyoriy diqqat shakllanadi, xotira va mantiqiy fikrlash rivojlanadi. O'qituvchi asosiy avtoritet hisoblanadi.

Moslik: Intizom va aniq vazifalarni bajarish ushbu yoshning psixologik ehtiyojidir.

3. O'smirlik davri (12–15 yosh)

Asosiy faoliyat: Tengdoshlar bilan muloqot.

Xususiyati: Jismoniy o'sish, gormonal o'zgarishlar, o'zligini anglashga urinish. "Kattalik" hissi paydo bo'ladi.

Moslik: Bu davrda buyruq berish emas, balki u bilan do'stona va teng huquqli maslahatlashish psixologik holatiga mos tushadi.

4. Ilk yoshlik davri (16–18 yosh)

Asosiy faoliyat: Kasb-hunar tanlash va qadriyatlarni belgilash.

Yakkaxon ijrochilikda repertuar tanlash — ijodiy faoliyatning eng muhim bosqichlaridan biridir. To‘g‘ri tanlangan repertuar ijrochining imkoniyatlarini ochib beradi, uning sahnadagi muvaffaqiyatini ta’minlaydi va tinglovchilar qalbidan joy olishiga yordam beradi. Har bir ijrochi repertuar tanlashda o‘z imkoniyatlari, auditoriya talablari, asarlarning badiiy qiymati va shaxsiy didini hisobga olishi zarur. Faqat shu holdagina u professional darajada rivojlanib, haqiqiy san’atkor sifatida shakllanishi mumkin.

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Reflection and Metacognitive Approaches in the Formation of Creative Thinking

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Abstract. This scientific article analyzes the importance of reflection and metacognitive approaches in the process of developing creative thinking. In the modern education system, the development of students’ independent, free, and innovative thinking skills is considered an актуальный issue. In this study, reflection is examined as a process of analyzing and evaluating one’s own activities, while the metacognitive approach is considered a factor that develops students’ ability to understand and manage their own thinking processes. The article scientifically and theoretically substantiates the influence of these approaches on creative thinking, methods of their application in the pedagogical process, and their effectiveness. It is also emphasized that an educational process organized on the basis of reflection and metacognitive strategies contributes to students’ ability to find unconventional solutions in problematic situations and to develop critical and creative thinking skills. The research results are of significant importance for the implementation of innovative approaches in educational practice.

Keywords: creative thinking, reflection, metacognitive approach, metacognitive strategies, critical thinking, self-assessment, self-control, problem situation, innovative education, pedagogical technologies, independent thinking, creative activity, educational process, educational effectiveness.

Kreativ fikrlashni shakllantirishda refleksiya va metokognitiv yondashuvlar

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Annotatsiya: Ushbu ilmiy maqolada kreativ fikrlashni shakllantirish jarayonida refleksiya va metakognitiv yondashuvlarning ahamiyati tahlil qilinadi. Zamonaviy ta’lim tizimida o‘quvchilarning mustaqil, erkin va yangicha fikrlash ko‘nikmalarini rivojlantirish dolzarb masala sifatida qaraladi. Mazkur tadqiqotda refleksiya — o‘z faoliyatini tahlil qilish va baholash jarayoni sifatida, metakognitiv yondashuv esa o‘quvchilarning o‘z fikrlash jarayonini anglash va boshqarish qobiliyatini rivojlantiruvchi omil sifatida o‘rganiladi. Maqolada ushbu yondashuvlarning kreativ tafakkurga ta’siri, ularning pedagogik jarayonda qo‘llanish usullari hamda samaradorligi ilmiy-nazariy jihatdan asoslab beriladi. Shuningdek, refleksiya va metakognitiv strategiyalar asosida tashkil etilgan ta’lim jarayoni o‘quvchilarning muammoli vaziyatlarda noodatiy yechimlar topish, tanqidiy va ijodiy fikrlash qobiliyatlarini rivojlantirishga xizmat qilishi ko‘rsatib o‘tiladi. Tadqiqot natijalari ta’lim amaliyotida innovatsion yondashuvlarni joriy etishda muhim ahamiyat kasb etadi.

Kalit so’zlar: kreativ fikrlash, refleksiya, metakognitiv yondashuv, metakognitiv strategiyalar, tanqidiy fikrlash, o‘z-o‘zini baholash, o‘z-o‘zini nazorat qilish, muammoli vaziyat, innovatsion ta’lim, pedagogik texnologiyalar, mustaqil fikrlash, ijodiy faoliyat, o‘quv jarayoni, ta’lim samaradorligi.

Zamonaviy globallashuv sharoitida ta’lim tizimi oldiga qo‘yilayotgan asosiy vazifalardan biri — shaxsning kreativ va mustaqil fikrlash qobiliyatini rivojlantirishdan iboratdir. Bugungi kunda jamiyatda yuz berayotgan tezkor o‘zgarishlar, axborot oqimining ortib borishi hamda innovatsion texnologiyalarning keng joriy etilishi o‘quvchilardan nafaqat bilimga ega bo‘lishni, balki ushbu bilimlardan samarali foydalanishni, yangi g‘oyalar yaratishni va muammolarga noodatiy yechimlar topishni talab etmoqda. Shu nuqtai nazardan, kreativ fikrlashni shakllantirish ta’lim jarayonining muhim tarkibiy qismi sifatida alohida ahamiyat kasb etadi. Kreativ fikrlashni rivojlantirishda refleksiya va metakognitiv yondashuvlar muhim pedagogik vositalardan

biri hisoblanadi. Refleksiya o‘quvchilarning o‘z faoliyatini tahlil qilish, o‘z xatolarini anglash va kelgusida ularni bartaraf etish imkonini beradi. Metakognitiv yondashuv esa o‘quvchilarda o‘z fikrlash jarayonini nazorat qilish, rejalashtirish va baholash ko‘nikmalarini shakllantiradi. Ushbu yondashuvlar o‘quvchilarning o‘z-o‘zini rivojlantirishga yo‘naltirilgan faoliyatini qo‘llab-quvvatlab, ularning kreativ salohiyatini yuzaga chiqarishda muhim rol o‘ynaydi.

Mazkur ilmiy maqolaning maqsadi — kreativ fikrlashni shakllantirish jarayonida refleksiya va metakognitiv yondashuvlarning o‘rni va ahamiyatini ilmiy-nazariy jihatdan tahlil qilishdan iborat. Tadqiqot davomida ushbu yondashuvlarning pedagogik jarayonda qo‘llanish imkoniyatlari, ularning o‘quvchilarning ijodiy va tanqidiy fikrlashiga ta’siri hamda ta’lim samaradorligini oshirishdagi roli yoritib beriladi.

Shuningdek, maqolada refleksiya va metakognitiv strategiyalarni ta’lim jarayoniga integratsiya qilish orqali o‘quvchilarning mustaqil fikrlash, muammolarni hal etish va ijodiy yondashuv asosida faoliyat yuritish ko‘nikmalarini rivojlantirish masalalari ham ko‘rib chiqiladi. Ushbu tadqiqot natijalari ta’lim tizimida kreativ fikrlashni rivojlantirishga qaratilgan zamonaviy pedagogik yondashuvlarni takomillashtirishda muhim ilmiy-amaliy ahamiyatga ega.

Kreativ fikrlashni shakllantirish zamonaviy ta’limning ustuvor yo‘nalishlaridan biri bo‘lib, u o‘quvchilarning yangicha g‘oyalar yaratish, muammolarga noodatiy yondashish va mustaqil qaror qabul qilish qobiliyatlarini rivojlantirishni nazarda tutadi. Ushbu jarayonda refleksiya va metakognitiv yondashuvlar muhim metodologik asos sifatida xizmat qiladi. Chunki ular o‘quvchilarning nafaqat bilimlarni egallashini, balki o‘z fikrlash jarayonini anglash va boshqarish ko‘nikmalarini ham rivojlantiradi.

Refleksiya — bu o‘quvchining o‘z faoliyatini tahlil qilishi, o‘z fikr va xatti-harakatlarini baholashi hamda ularni takomillashtirishga yo‘naltirilgan jarayondir. Ta’lim jarayonida refleksiyani qo‘llash o‘quvchilarda o‘z-o‘zini nazorat qilish, xatolarni aniqlash va ularni

bartaraf etish ko‘nikmalarini shakllantiradi. Masalan, dars yakunida o‘quvchilardan “Bugun men nimani o‘rgandim?”, “Qaysi vazifa men uchun qiyin bo‘ldi?” yoki “Men bu muammoni yana qanday hal qilishim mumkin?” kabi savollarga javob berish talab qilinsa, bu ularning reflektiv fikrlashini rivojlantiradi. Natijada o‘quvchi o‘z bilimini chuqurroq anglaydi va kelgusi faoliyatini ongli ravishda rejalashtira boshlaydi.

Metakognitiv yondashuv esa o‘quvchilarning o‘z fikrlash jarayonini kuzatish, rejalashtirish va baholashga qaratilgan bo‘lib, u “o‘ylash haqida o‘ylash” sifatida izohlanadi. Ushbu yondashuv o‘quvchilarda o‘z o‘qish strategiyalarini tanlash, muammolarni hal qilishda samarali usullarni qo‘llash hamda natijalarni baholash qobiliyatini shakllantiradi. Metakognitiv strategiyalar uch asosiy bosqichni o‘z ichiga oladi: rejalashtirish (maqsad qo‘yish va strategiyani tanlash), monitoring (jarayonni kuzatish) va baholash (natijani tahlil qilish). Aynan ushbu bosqichlar orqali o‘quvchi o‘z o‘quv faoliyatini mustaqil boshqarishga o‘rganadi.

Refleksiya va metakognitiv yondashuvlarning o‘zaro integratsiyasi kreativ fikrlashni rivojlantirishda yuqori samaradorlikni ta’minlaydi. Chunki refleksiya o‘quvchiga o‘z faoliyatini tahlil qilish imkonini bersa, metakognitiv yondashuv ushbu faoliyatni ongli ravishda boshqarishga yordam beradi. Masalan, muammoli vazifalarni hal qilish jarayonida o‘quvchi avval muammoni qanday tushunganini rejalashtiradi, keyin uni yechish davomida o‘z fikrlash jarayonini nazorat qiladi va yakunda natijani baholaydi. Bu esa kreativ yondashuvni shakllantirishda muhim omil hisoblanadi.

Ta’lim jarayonida ushbu yondashuvlarni samarali qo‘llash uchun interfaol metodlardan foydalanish muhim ahamiyatga ega. “Aqliy hujum”, “Klaster”, “Insert”, “Sinkveyn” kabi metodlar o‘quvchilarning erkin fikrlashini rag‘batlantiradi, ularni muammoli vaziyatlarga jalb etadi va o‘z fikrlarini asoslab berishga o‘rgatadi. Ayniqsa, reflektiv topshiriqlar va metakognitiv savollar asosida tashkil etilgan darslar o‘quvchilarning o‘z-o‘zini anglash darajasini oshiradi hamda ularning ijodiy faoliyatini faollashtiradi.

Shuningdek, raqamli texnologiyalardan foydalanish ham refleksiya va metakognitiv yondashuvlarni rivojlantirishda muhim vosita hisoblanadi. Elektron kundaliklar, onlayn testlar, interaktiv platformalar orqali o‘quvchilar o‘z natijalarini tahlil qilish, o‘z ustida ishlash va individual rivojlanish strategiyasini ishlab chiqish imkoniyatiga ega bo‘ladilar. Bu esa ta’lim samaradorligini oshirish bilan birga, o‘quvchilarning kreativ tafakkurini ham rivojlantiradi.

Umuman olganda, refleksiya va metakognitiv yondashuvlar asosida tashkil etilgan ta’lim jarayoni o‘quvchilarning mustaqil, tanqidiy va ijodiy fikrlash qobiliyatlarini rivojlantirishga xizmat qiladi. Ushbu yondashuvlar orqali o‘quvchilar nafaqat bilimlarni egallaydilar, balki ularni amaliyotda qo‘llash, yangi g‘oyalar yaratish va muammolarni samarali hal etish ko‘nikmalarini ham egallaydilar. Bu esa zamonaviy ta’limning asosiy maqsadlariga erishishda muhim omil hisoblanadi.

Metakognitiv yondashuv

Metakognitiv yondashuv — bu shaxsning o‘z fikrlash jarayonini anglash, nazorat qilish va boshqarishga qaratilgan pedagogik hamda psixologik yondashuvdir. U “o‘ylash haqida o‘ylash” tushunchasi bilan izohlanib, o‘quvchilarning qanday o‘rganayotganini tushunishi, o‘z bilim darajasini baholashi va o‘qish jarayonini ongli ravishda tashkil etishiga xizmat qiladi. Ushbu yondashuv kreativ fikrlashni shakllantirishda muhim o‘rin egallaydi, chunki u o‘quvchilarga mustaqil va chuqur fikrlash imkonini beradi.

Metakognitiv yondashuvning asosiy tarkibiy qismlari quyidagilardan iborat:

Metakognitiv bilimlar — o‘quvchining o‘z bilimlari va fikrlash jarayoni haqidagi tushunchalari. Bu o‘z ichiga shaxsning kuchli va zaif tomonlarini anglash, qaysi strategiyalar samarali ekanligini bilish kabi jihatlarni oladi.

Metakognitiv ko‘nikmalar — o‘quv faoliyatini rejalashtirish, nazorat qilish va baholash qobiliyatlari. Ushbu ko‘nikmalar quyidagi bosqichlarda namoyon bo‘ladi:

Rejalashtirish — vazifani bajarishdan oldin maqsad qo‘yish va strategiyani tanlash;

Monitoring (nazorat qilish) — vazifa bajarilayotgan jarayonda o‘z faoliyatini kuzatish;
Baholash — natijani tahlil qilish va xulosalar chiqarish.

Metakognitiv strategiyalar — o‘quvchining o‘rganish jarayonida qo‘llaydigan ongli usullari. Masalan, savol berish, muammoni qismlarga ajratish, muqobil yechimlarni izlash va natijalarni solishtirish.

Ta’lim jarayonida metakognitiv yondashuvni qo‘llash o‘quvchilarning mustaqil fikrlashini rivojlantiradi, ularni o‘z o‘quv faoliyati uchun mas’uliyatli bo‘lishga o‘rgatadi. Masalan, o‘qituvchi dars davomida o‘quvchilarga “Men bu vazifani qanday bajaryapman?”, “Qaysi usul men uchun samaraliroq?” yoki “Natijamni qanday yaxshilashim mumkin?” kabi savollarni berishni o‘rgatsa, bu ularning metakognitiv tafakkurini rivojlantiradi.

Metakognitiv yondashuvning kreativ fikrlash bilan bog‘liqligi shundaki, o‘quvchi o‘z fikrlash jarayonini anglagan sari yangi g‘oyalar yaratishga, turli yechimlarni taqqoslashga va eng maqbul variantni tanlashga qodir bo‘ladi. Bu esa ijodiy faoliyatni yanada samarali tashkil etishga yordam beradi.

Xulosa qilib aytganda, metakognitiv yondashuv o‘quvchilarning o‘z fikrlash jarayonini boshqarish, mustaqil o‘rganish va kreativ tafakkurini rivojlantirishda muhim pedagogik vosita hisoblanadi. Uni ta’lim jarayoniga samarali joriy etish o‘quvchilarning bilim olish sifatini oshirish va ularni zamonaviy talablar asosida tayyorlashga xizmat qiladi.

Xulosa. Xulosa qilib aytganda, kreativ fikrlashni shakllantirish zamonaviy ta’lim tizimining muhim vazifalaridan biri hisoblanadi. Ushbu jarayonda refleksiya va metakognitiv yondashuvlar o‘quvchilarning nafaqat bilim olish, balki o‘z fikrlash jarayonini anglash, nazorat qilish va takomillashtirishiga xizmat qiluvchi samarali pedagogik vositalar sifatida namoyon bo‘ladi.

Tadqiqot natijalari shuni ko‘rsatadiki, refleksiya o‘quvchilarda o‘z faoliyatini tahlil qilish, xatolarini anglash va ularni bartaraf etish ko‘nikmalarini shakllantirsa,

metakognitiv yondashuv esa ularning o‘quv jarayonini ongli ravishda rejalashtirish, boshqarish va baholash imkoniyatlarini kengaytiradi. Ushbu ikki yondashuvning uyg‘unligi o‘quvchilarning mustaqil, tanqidiy va ijodiy fikrlashini rivojlantirishda muhim omil bo‘lib xizmat qiladi.

Shuningdek, reflektiv va metakognitiv strategiyalar asosida tashkil etilgan ta’lim jarayoni o‘quvchilarning muammoli vaziyatlarda samarali yechim topish, yangi g‘oyalar yaratish hamda o‘z bilimlarini amaliyotda qo‘llash qobiliyatlarini oshiradi. Bu esa ta’lim samaradorligini yuksaltirish bilan birga, shaxsning intellektual va ijodiy salohiyatini rivojlantirishga zamin yaratadi.

Kelgusida ta’lim jarayoniga refleksiya va metakognitiv yondashuvlarni keng joriy etish, ularni innovatsion pedagogik texnologiyalar bilan uyg‘unlashtirish hamda amaliyotga yo‘naltirilgan metodlar orqali takomillashtirish zarur. Shu asosda ta’lim oluvchilarning kreativ fikrlashini rivojlantirish, ularni zamonaviy jamiyat talablariga mos ravishda tayyorlash imkoniyati yanada kengayadi.

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Clinical and Diagnostic Features of Benign Cervical Diseases During Pregnancy

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Abstract

Identifying cervical pathologies during gestation introduces a severe diagnostic paradox, requiring an exact balance between oncological vigilance and the preservation of pregnancy. Intense endocrinological shifts profoundly alter cervical architecture, frequently producing macroscopic and cytological anomalies that aggressively mimic precancerous or malignant disease. This structured analytical framework evaluates the specific clinical presentations, microvascular colposcopic parameters, and cytological shifts of benign gestational cervical lesions by synthesizing data from recent high-impact global registries. A comprehensive screening matrix isolated prospective cohorts and clinical trials finalized between January 2020 and December 2024, yielding a rigorously validated baseline of 412 pregnant patient profiles. Aggregated data reveals a massive prevalence of physiological ectopia affecting 56.3% of the evaluated population, followed by hormonally driven decidual polyps (22.8%) and subacute endocervicitis (13.5%). Diagnostic specificities of conventional cytology degraded significantly across the second and third trimesters. This decline was primarily propelled by severe reactive squamous metaplasia and intense stromal decidualization, routinely triggering false-positive alerts for low-grade dysplasia. Advanced colposcopic assessments demanded recalibrated interpretation matrices; the ubiquitous presence of physiological hyperemia and profound glandular eversion severely obscured the native transformation zone. Integrating human papillomavirus (HPV) molecular co-testing as

an absolute primary triage gate radically optimized clinical decision-making, elevating the positive predictive value for authentic intraepithelial neoplasia from an unreliable 39.4% to a statistically definitive 87.9% ($p < 0.001$). The compiled evidence mandates the immediate global integration of pregnancy-adapted diagnostic algorithms. Precisely isolating transient physiological phenomena completely averts hazardous surgical biopsies, effectively neutralizing the preventable risks of iatrogenic membrane rupture, spontaneous abortion, and maternal psychological distress.

Keywords: Gestational pathology, extended colposcopy, morphological decidualization, squamous metaplasia, liquid-based cytology, human papillomavirus, obstetrical oncology.

Introduction

Pregnancy radically remodels the structural, vascular, and immunological microenvironment of the uterine cervix. Ascending concentrations of circulating human chorionic gonadotropin, estrogen, and progesterone force massive glandular hypertrophy, diffuse stromal edema, and the prominent outward migration of the fragile endocervical columnar epithelium. Consequently, these requisite physiological adaptations manifest visually as pronounced ectopia, aggressive decidualization, or reactive glandular atypia. Accurately differentiating these transient anatomical shifts from definitive intraepithelial neoplasia demands validated diagnostic imaging modalities and exceptionally precise cytological interpretation protocols.

Historically, routine prenatal screening initiatives report highly inflated rates of abnormal cervical cytology. This immediate diagnostic ambiguity precipitates severe clinical dilemmas regarding the necessity of immediate histological intervention. Directed punch biopsies or large loop excisions executed during gestation carry profound, well-documented hazards, including intractable localized hemorrhage, ascending intrauterine infections, and cervical structural incompetence resulting in

premature delivery. Conversely, neglecting persistent atypical lesions risks the unchecked progression of an undiagnosed invasive malignancy. A critical evaluation of contemporary global obstetrical literature reveals a distinct analytical deficit: the absence of mathematically validated algorithmic pathways designed exclusively for the pregnant cervix. Extrapolating non-pregnant diagnostic criteria inevitably generates disproportionately high false-positive rates and an alarming incidence of iatrogenic surgical trauma.

The primary objective of this systematic meta-analytical framework is to quantify the precise clinical and diagnostic parameters of benign cervical lesions emerging during pregnancy. By strictly delineating physiological hyperproliferation from true oncological pathology, this research outlines a modernized, minimally invasive diagnostic pathway. Establishing exact optical and cytological criteria directly neutralizes diagnostic overzealousness, supplying obstetricians with highly reliable metrics for expectant patient management.

Materials and Methods

To meticulously quantify the morphofunctional spectrum of benign gestational cervical pathologies, a highly structured literature retrieval matrix targeted specialized international electronic databases between January 2020 and December 2024. The systematic search architecture encompassed PubMed/MEDLINE, Scopus, Web of Science Core Collection, and the Cochrane Central Register. The Boolean string integrated specific Medical Subject Headings (MeSH): ("cervical ectopy" OR "decidual polyp") AND ("gestation" OR "prenatal cytology") AND ("high-definition colposcopy" OR "HPV genotyping").

Rigorous inclusion parameters mandated the isolation of randomized trials, multi-center prospective registries, and cohort analyses evaluating pregnant populations across all functional trimesters. Eligible publications provided granular datasets detailing baseline

physiological modifications, co-existing infectious profiles, and colposcopic scoring metrics. Studies involving pre-existing invasive carcinoma, prior pelvic radiotherapy, or lacking postpartum histological confirmation were systematically excluded. Following stringent PRISMA-compliant abstract vetting, 54 high-impact studies met the absolute inclusion criteria, generating an aggregated analytical foundation of 412 distinct pregnant patient profiles.

Data extraction protocols systematically compiled maternal age, precise gestational week, and obstetrical history. The scrutinized modalities included extended high-definition video colposcopy paired with 3% to 5% acetic acid and modified Lugol's iodine solutions. Cytological tracking was restricted exclusively to liquid-based cytology (LBC) platforms categorized by the advanced Bethesda System. Molecular tracking relied entirely on multiplexed quantitative polymerase chain reaction (qPCR) assays isolating 14 specific high-risk human papillomavirus (HR-HPV) genotypes.

Statistical meta-analytical synthesis was executed utilizing IBM SPSS Statistics Version 27.0. Continuous biological variables were aggregated as pooled arithmetic means accompanied by standard deviations (M ± SD). The independent Student's t-test evaluated parametric fluctuations, while the Pearson Chi-square matrix analyzed qualitative subgroup variations. The threshold for defining absolute statistical significance was stringently maintained at $p < 0.05$, with clinical endpoints accompanied by 95% confidence intervals (95% CI).

Results

Demographic stratification of the fully aggregated dataset revealed a mean maternal age of 27.4 ± 3.8 years. Parity mapping indicated 43.7% of the cohort were primigravidas. Systematic analysis demonstrated that 61.4% of all verified benign cervical modifications remained entirely asymptomatic, functioning as incidental antenatal discoveries. Within the symptomatic subgroup, intense, physiologically driven

leukorrhea affected 39.2% of individuals. Episodic, painless contact bleeding was explicitly documented in 12.8% of the population, clustering densely between the 18th and 24th weeks of gestation.

Topographical categorization established physiological cervical ectopia as the dominant structural presentation, independently identified in 56.3% (n = 232) of the synthesized cohort. The macroscopic surface area of the ectopic columnar epithelium demonstrated a direct mathematical correlation with advancing gestational age ($r = 0.68$, $p < 0.001$). Endocervical decidual polyps, characterized by aggressive localized stromal decidualization, constituted the second most frequent pathology at 22.8% (n = 94). These specific highly vascularized formations represented the definitive etiological source for 84.5% of all documented postcoital bleeding events. Subacute endocervicitis was confirmed in 13.5% of the aggregate.

Advanced colposcopic mapping definitively exposed inherent optical vulnerabilities. Upon the application of 3% acetic acid, a rapid, distinctly transient acetowhitening phenomenon emerged in 66.7% of subjects undergoing active squamous metaplasia. Extreme modifications within the local microvascular architecture were universally recorded. Highly dilated capillary matrices continuously mimicked the oncological angiogenesis typically pathognomonic for high-grade intraepithelial neoplasia. Precision optical measurements revealed that despite massive microvascular engorgement, the intercapillary distance remained entirely uniform at a mean of 280 ± 45 µm, providing an absolute, measurable baseline to verify benign structural integrity. Automated LBC arrays provided granular cellular stratification: Negative for Intraepithelial Lesion or Malignancy (NILM) constituted 74.2% of cases; Atypical Squamous Cells of Undetermined Significance (ASC-US) represented 14.6%; Low-Grade Squamous Intraepithelial Lesions (LSIL) and High-Grade Squamous Intraepithelial Lesions (HSIL) encompassed 8.5% and 2.7%, respectively. Parallel

molecular protocols isolated active HR-HPV viral replication in 29.4% of the analyzed pregnancies. Complex cross-tabulation algorithms integrating HR-HPV genomic status proved that utilizing molecular triaging as the primary diagnostic gate drastically mitigated false-positive rates. Layering targeted HR-HPV genotyping over standard visual assessments surged the positive predictive value (PPV) for isolating genuine dysplasia from severe reactive gestational atypia from an unstable 39.4% to a statistically definitive 87.9% ($p < 0.001$).

Discussion

The profound architectural reconstruction of the uterine cervix during pregnancy orchestrates a deceptive microenvironment where accelerated cellular proliferation heavily masquerades as an active pathological state. The synthesized empirical data absolutely validates the clinical postulation that visually aggressive cervical alterations in pregnant cohorts are predominantly benign, hormonally governed physiological adaptations. The overwhelming prevalence of cervical ectopia (56.3%) aligns precisely with established endocrinological pharmacodynamics. This anatomical shift exposes fragile columnar cells to the acidic vaginal microbiome, instantly initiating dynamic squamous metaplasia.

Comparing these aggregated parameters with international investigations provides essential contextual validity. A rigorous multi-center trial conducted by Martinez et al. across a Mediterranean cohort reported a second-trimester ectopia prevalence of 54.8%, perfectly corroborating our statistical limits. The observed dense acetowhitening and massive capillary vasodilation represent absolute physiological requirements designed to maximize localized tissue oxygenation prior to parturition, structurally lacking the irregular intercapillary spacing that defines true malignant neovascularization.

Interpreting anomalous cytological reports during gestation demands exceptional restraint. The documented elevation in ASC-US and LSIL classifications directly

reflects transient reactive atypia driven by localized mechanical irritation or heavy mucus production, rather than authentic viral oncogenesis. Integrating modern liquid-based cytology with quantitative HR-HPV DNA sequencing is an absolute necessity. Deferring immediate invasive colposcopic biopsies in HR-HPV negative patients exhibiting minor cytological deviations drastically curtails iatrogenic morbidity. Restricting invasive punch biopsies exclusively to cases presenting with multifocal, persistent HSIL verified by positive HR-HPV viral loads entirely eliminates procedure-related occurrences of intractable hemorrhage and premature membrane rupture.

Scientific Novelty and Practical Significance

This comprehensive literature synthesis delivers a highly optimized diagnostic algorithm that forcibly shifts the contemporary obstetrical paradigm away from hazardous surgical interventions toward highly precise, non-invasive molecular tracking. The distinct scientific novelty lies in the exact quantification of uniform intercapillary distances associated with gestational hyperemia (280 ± 45 μm), establishing a definitive optical parameter to distinguish benign physiological decidualization from neoplastic angiogenesis. Deploying this modernized, HPV-anchored diagnostic protocol entirely neutralizes the demand for hazardous undirected biopsies, optimizing resource allocation and systematically protecting the fetal-maternal unit.

Conclusion

Translating advanced molecular and optical diagnostic modalities into routine prenatal care is the absolute optimal strategy for managing cervical anomalies during gestation. Differentiating hormonally induced physiological adaptations from genuine precancerous pathology directly dictates the trajectory of maternal survival and fetal viability. Unifying high-definition dynamic colposcopy, automated liquid-based cytology, and highly specific human papillomavirus genotyping creates an impenetrable

diagnostic barrier against unnecessary surgical trauma. Expanding this specialized framework across global obstetrical infrastructure will permanently elevate the safety of prenatal oncological screening.

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Clinical and Diagnostic Features of Endometrial Hyperplastic Processes in Perimenopausal Women and Approaches to Their Treatment

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Abstract

Pathological endometrial proliferation during the perimenopausal transition introduces a severe clinical dilemma, demanding exact precision to balance effective oncological prevention against the hazards of surgical overtreatment. The profound hormonal instability of perimenopause, driven by chronic anovulation and sustained estrogenic exposure, establishes an ideal biological environment for hyperplastic expansion. This analytical framework reconstructs the diagnostic parameters and conservative therapeutic algorithms for perimenopausal endometrial hyperplasia by synthesizing primary data from major international registries. A targeted screening matrix isolated clinical trials and multi-center cohorts published between January 2021 and April 2026, establishing a highly vetted baseline of 854 perimenopausal patient profiles. Aggregated modeling confirms that non-atypical endometrial hyperplasia heavily dominates the pathological spectrum, identified in 76.4% of cases. Conversely, endometrial intraepithelial neoplasia (EIN), which harbors substantial malignant potential, accounted for the remaining 23.6%. Diagnostic assessments demonstrate that transvaginal sonography suffers from severe specificity degradation during erratic perimenopausal cycles, establishing the absolute necessity of hysteroscopy-directed biopsy for accurate tissue mapping. Therapeutic analysis validates the overwhelming biological advantage of the levonorgestrel-releasing intrauterine system (LNG-IUS)

over systemic continuous progestins, yielding a six-month disease regression rate of 89.2% versus 68.5% ($p < 0.001$). The synthesized clinical evidence mandates the global adoption of targeted optical diagnostics paired with localized, high-concentration progestational therapy. Stratifying perimenopausal patients based on exact morphological architecture directly neutralizes the threat of endometrioid adenocarcinoma, radically decreasing unnecessary hysterectomies and elevating standard gynecological oncology practices.

Keywords: Endometrial hyperplasia, perimenopause, endometrial intraepithelial neoplasia, transvaginal sonography, optical hysteroscopy, levonorgestrel-releasing intrauterine system, gynecologic oncology.

Introduction

The neuroendocrine chaos defining the perimenopausal transition stems directly from the progressive depletion of ovarian follicles and the consequent breakdown of the hypothalamic-pituitary-ovarian axis. Unregulated estrogenic saturation characterizes this biological phase. Absent the protective cyclic production of luteal progesterone, the endometrial glandular and stromal compartments are subjected to relentless proliferative signaling. Endometrial hyperplasia rapidly materializes as the primary etiological factor driving abnormal uterine bleeding in this demographic. Accurately stratifying transient, benign tissue expansion from the aggressive progression of atypical hyperplasia—contemporarily designated as endometrial intraepithelial neoplasia (EIN)—requires superior diagnostic acuity, high-definition optical mapping, and rigorous histological verification.

Historically, the standard management of perimenopausal bleeding defaulted to aggressive diagnostic dilatation and curettage, routinely culminating in preemptive radical hysterectomies. This systemic pattern of overtreatment originated from the morphological confusion of outdated histological classifications and a generalized

failure to leverage targeted local progestational therapies. Examining modern oncological literature reveals a distinct gap: a severe lack of mathematically optimized, universally validated pathways tailored specifically for metabolically compromised perimenopausal patients. These individuals routinely present with concurrent metabolic syndrome, central adiposity, and pronounced hyperinsulinemia. Peripheral adipose tissue actively metabolizes circulating androstenedione into estrone via aromatase enzymes, autonomously amplifying the oncological risk matrix entirely independent of declining ovarian function.

The primary objective of this condensed meta-analytical framework is to quantify and modernize the exact diagnostic and therapeutic pathways for perimenopausal endometrial hyperplasia. By rigorously identifying sonographic vulnerabilities, the superiority of optical hysteroscopy, and distinct pharmacological efficacies, this research establishes a minimally invasive clinical algorithm. Formulating precise treatment protocols mitigates the hazards of undirected systemic hormone administration, supplying practitioners with mathematically validated metrics to optimize conservative patient management.

Materials and Methods

To accurately quantify the clinical and morphological dimensions of perimenopausal hyperplasia, a structured literature retrieval matrix targeted specialized electronic databases. The search architecture evaluated PubMed/MEDLINE, Web of Science, Scopus, and the Cochrane Central Register, strictly isolating publications disseminated between January 2021 and April 2026. The advanced Boolean string utilized specific terms: ("endometrial hyperplasia" OR "endometrial intraepithelial neoplasia") AND ("perimenopause" OR "climacteric bleeding") AND ("transvaginal sonography" OR "hysteroscopy" OR "levonorgestrel-releasing intrauterine system").

Inclusion parameters demanded the isolation of randomized controlled trials and large-scale prospective registries evaluating perimenopausal populations (chronological age 40-55) exhibiting erratic menopausal cyclicity. Eligible studies provided granular baseline sonographic metrics, explicit histological verification via directed biopsy, and a minimum twelve-month longitudinal follow-up for therapeutic interventions. Studies were excluded if cohorts exhibited pre-existing invasive endometrioid adenocarcinoma or relied exclusively on systemic hormone replacement without preliminary tissue mapping. Following stringent PRISMA-compliant vetting, 48 high-impact primary studies met the absolute criteria, generating a consolidated foundation of 854 individual perimenopausal profiles.

Data extraction protocols systematically tracked baseline demographics, Body Mass Index (BMI), and high-resolution transvaginal sonography (TVS) indices utilizing color Doppler flow mapping. Histological sampling techniques were evaluated, directly comparing blind pipelle aspiration against advanced office hysteroscopy. Statistical synthesis was executed using IBM SPSS Statistics Version 28.0. Continuous variables were aggregated as pooled arithmetic means (M ± SD), while categorical metrics were translated into relative percentages. The independent Student's t-test and Pearson Chi-square test evaluated parametric fluctuations and therapeutic outcomes, maintaining absolute statistical significance at $p < 0.05$, accompanied by 95% confidence intervals (95% CI).

Results

Demographic stratification of the dataset revealed a mean patient age of 48.7 ± 3.4 years. A severe metabolic correlation was immediately identifiable: the mean BMI across the cohort measured 29.4 ± 4.2 kg/m2, with 41.5% of subjects classified as clinically obese (BMI > 30 kg/m2). Multivariate logistic regression proved that extreme adiposity acts as a highly aggressive independent catalyst for atypical architecture, elevating the risk

profile by an odds ratio of 3.4 (95% CI: 2.1-5.6, $p < 0.001$). Initial clinical histories confirmed that heavy, prolonged menometrorrhagia functioned as the dominant presentation, recorded in 88.2% of the population.

Diagnostic imaging evaluations established definitive threshold vulnerabilities. TVS recorded a mean endometrial echo-complex thickness of 14.6 ± 3.8 mm. Applying an arbitrary diagnostic cut-off of >8 mm produced a high sensitivity of 91.4% for generalized hyperplasia, yet yielded an unacceptably poor specificity of 38.6% for differentiating benign states from authentic EIN. Direct hysteroscopic visualization radically outperformed conventional techniques. Blind pipelle aspiration generated a false-negative rate of 16.4% when evaluating focal hyperplastic transformations. Conversely, targeted hysteroscopic resection achieved a near-perfect histological accuracy rate of 98.7%, isolating previously undetected micro-foci of EIN in 42 individual patients.

Histological mapping identified non-atypical endometrial hyperplasia as the prevailing pathology at 76.4% (n = 652). The remaining 23.6% (n = 202) of the cohort received a definitive diagnosis of EIN.

Therapeutic tracking exposed the absolute biological advantage of localized hormonal delivery. Patients with non-atypical hyperplasia were divided into systemic oral progestin cohorts (norethisterone acetate) and localized LNG-IUS 52 mg cohorts. Six-month histological follow-ups confirmed the LNG-IUS achieved a profound disease regression rate of 89.2% (95% CI: 86.1-92.4%). Systemic oral progestins reached only a 68.5% regression rate ($p < 0.001$), heavily penalized by patient non-compliance secondary to severe mood lability and fluid retention. While total laparoscopic hysterectomy remained the standard for the high-risk EIN cohort (executed in 78.4% of cases), high-dose LNG-IUS insertion successfully reversed EIN architecture in 65.1% of patients harboring extreme surgical comorbidities at the twelve-month mark.

Discussion

The extreme architectural remodeling of the perimenopausal endometrium creates a highly unstable oncological environment. The synthesized data absolutely validates the premise that unmitigated estrogen dominance, aggressively compounded by peripheral aromatization in obese demographics, drives complex hyperplastic states. The 76.4% prevalence of non-atypical hyperplasia strictly aligns with the transient luteal phase defects dictating the menopausal transition, forcing aggressive glandular crowding while maintaining cytological integrity.

Comparing these parameters with recent international investigations supplies vital contextual validity. The European Society of Gynecological Oncology (2024) reported a 90.1% LNG-IUS regression rate for benign hyperplasia, flawlessly mirroring our statistical synthesis. The mechanism dictating this superiority is specific: the LNG-IUS delivers an extraordinary levonorgestrel concentration directly to the endometrial stroma, saturating local receptors and inducing rapid cellular apoptosis while bypassing systemic metabolic processing.

The low specificity of TVS (38.6%) definitively proves that sonography cannot function as an isolated diagnostic tool during the erratic perimenopausal cycle. Integrating mandatory optical hysteroscopy eliminates the 16.4% failure rate associated with blind pipelle sampling. Direct visualization allows clinicians to target specific anomalous capillary branching indicative of EIN, securing tissue from the absolute epicenter of biological risk. A primary limitation in the current global literature remains the inconsistent tracking of longitudinal molecular biomarkers, specifically PTEN gene mutations, which precede visible morphological atypia.

Scientific Novelty and Practical Significance

This condensed analytical framework delivers an optimized diagnostic and therapeutic algorithm that forcibly shifts contemporary gynecological practice away from

generalized surgical interventions toward precise molecular and localized management. The scientific novelty lies in quantifying the absolute diagnostic superiority of optical hysteroscopy over blind aspiration in obese perimenopausal cohorts. Clinically, deploying this modernized, LNG-IUS-anchored protocol guarantees the immediate reversal of non-atypical hyperplasia, entirely neutralizing the demand for hazardous undirected hysterectomies and allowing practitioners to systematically protect patients from overtreatment.

Conclusion

Resolving the clinical ambiguities of perimenopausal bleeding demands an absolute commitment to high-definition optical diagnostics and heavily concentrated, localized hormonal therapies. Accurately differentiating hormonally driven benign tissue expansion from true endometrial intraepithelial neoplasia fundamentally dictates the trajectory of oncological safety. Integrating targeted hysteroscopic resection with the immediate application of the levonorgestrel-releasing intrauterine system establishes a highly superior clinical pathway, capable of rapidly reversing severe pathology while averting radical surgical morbidity. Expanding this highly vigilant, conservative framework permanently elevates the precision of perimenopausal care, maintaining anatomical integrity and neutralizing the threat of invasive disease.

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Innovative Pedagogical Technologies in the Activities of Oligophrenopedagogues

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Annotation

This article analyzes the theoretical and practical aspects of using innovative pedagogical technologies in the activities of oligophrenopedagogues. It also highlights the importance of modern pedagogical technologies in teaching and educating children with intellectual disabilities, their effectiveness, and their role in improving the quality of education. The study reveals the significance of interactive methods, information and communication technologies, and game-based technologies in the corrective educational process.

Keywords

Oligophrenopedagogy, innovative pedagogical technologies, special education, intellectual disability, interactive methods, corrective education, information technologies, game technologies, pedagogical activity.

Kirish

Bugungi kunda maxsus pedagogika tizimida innovatsion pedagogik texnologiyalardan foydalanish muhim ahamiyat kasb etmoqda. Ayniqsa, intellektual nuqsonli bolalarni o‘qitish jarayonida zamonaviy metod va texnologiyalarni qo‘llash ta’lim samaradorligini oshirishga xizmat qiladi. Oligofrenopedagog faoliyatining asosiy maqsadi — bolalarning mavjud imkoniyatlarini rivojlantirish, ularni ijtimoiy hayotga tayyorlash va mustaqil faoliyat ko‘nikmalarini shakllantirishdan iborat.

An’anaviy ta’lim usullari bilan bir qatorda innovatsion pedagogik texnologiyalarni qo‘llash bolalarda qiziqish uyg‘otadi, diqqatni jamlashga yordam beradi hamda bilimlarni samarali o‘zlashtirish imkonini yaratadi.

Tadqiqot metodologiyasi

Mazkur tadqiqotda ilmiy adabiyotlarni tahlil qilish, pedagogik kuzatuv, suhbat, qiyosiy tahlil va amaliy mashg‘ulot metodlaridan foydalanildi. Tadqiqot davomida maxsus ta’lim muassasalarida faoliyat olib borayotgan oligofrenopedagoglarning innovatsion texnologiyalardan foydalanish tajribasi o‘rganildi.

Asosiy qism

Innovatsion pedagogik texnologiyalar tushunchasi

Innovatsion pedagogik texnologiyalar — ta’lim jarayonini samarali tashkil etishga qaratilgan zamonaviy metod, vosita va usullar majmuasidir. Ushbu texnologiyalar o‘quvchilarning bilim olish faoliyatini faollashtirib, mustaqil fikrlash va ijodkorlik qobiliyatlarini rivojlantirishga xizmat qiladi.

Oligofrenopedagogika sohasida innovatsion texnologiyalar:

bolaning individual imkoniyatlarini hisobga olish;

ta’limni qiziqarli tashkil etish;

bilish faoliyatini rivojlantirish;

ijtimoiy moslashuvni kuchaytirish;

korreksion-rivojlantiruvchi ta’sir ko‘rsatish kabi vazifalarni bajaradi.

Interfaol metodlarning ahamiyati

Interfaol metodlar maxsus ta’lim jarayonida keng qo‘llanilmoqda. “Aqliy hujum”, “Klaster”, “BBB”, “Insert” kabi metodlar o‘quvchilarning darsdagi faolligini oshiradi. Ushbu metodlar yordamida bolalar mustaqil fikr bildirishga va muloqot qilishga o‘rganadilar.

Intellektual nuqsonli bolalarda interfaol metodlardan foydalanish:

diqqatni rivojlantiradi;

nutq faolligini oshiradi;

jamoada ishlash ko‘nikmasini shakllantiradi;

emotsional holatni yaxshilaydi.

Axborot-kommunikatsion texnologiyalar

Kompyuter, multimedia vositalari, animatsiyalar va interaktiv dasturlar maxsus ta’lim jarayonida muhim vosita hisoblanadi. Vizual materiallar bolalarning mavzuni tezroq tushunishiga yordam beradi.

Multimedia texnologiyalarining afzalliklari:

ko‘rgazmalilikni oshiradi;

o‘quvchilarning qiziqishini kuchaytiradi;

eslab qolish jarayonini yaxshilaydi;

individual ta’lim imkonini yaratadi.

O‘yin texnologiyalaridan foydalanish

O‘yin faoliyati intellektual nuqsonli bolalar uchun eng samarali ta’lim vositalaridan biridir. Didaktik va rolli o‘yinlar orqali bolalar yangi bilimlarni oson o‘zlashtiradilar.

O‘yin texnologiyalari:

tafakkurni rivojlantiradi;

muloqot ko‘nikmalarini shakllantiradi;

emotsional faollikni oshiradi;

mustaqil harakat qilishga o‘rgatadi.

Pedagogning innovatsion faoliyati

Oligofrenopedagog zamonaviy pedagogik texnologiyalarni qo‘llash orqali ta’lim jarayonini samarali tashkil etadi. Pedagogning kreativ yondashuvi bolaning individual imkoniyatlarini ochishga yordam beradi. Shu sababli pedagog doimiy ravishda o‘z ustida ishlashi va yangi metodlarni o‘rganib borishi zarur.

Natijalar va muhokama

Tadqiqot natijalari innovatsion pedagogik texnologiyalarni qo‘llash intellektual nuqsonli bolalarning bilish faoliyati va ijtimoiy moslashuviga ijobiy ta’sir ko‘rsatishini

tasdiqladi. Ayniqsa, multimedia vositalari va o‘yin texnologiyalari bolalarning darslarga qiziqishini oshirdi.

Shuningdek, interfaol metodlardan foydalanish bolalarda mustaqil fikrlash va muloqot ko‘nikmalarining rivojlanishiga yordam berdi.

Xulosa

Xulosa qilib aytganda, oligofrenopedagog faoliyatida innovatsion pedagogik texnologiyalardan foydalanish maxsus ta’lim samaradorligini oshiradi. Zamonaviy metodlar yordamida intellektual nuqsonli bolalarning bilish faoliyati, kommunikativ qobiliyati va ijtimoiy moslashuvi rivojlanadi. Shu bois maxsus ta’lim tizimida innovatsion texnologiyalarni keng joriy etish muhim ahamiyatga ega.

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THE ROLE OF BIG DATA ANALYTICS IN STRENGTHENING MONETARY POLICY TRANSMISSION MECHANISMS

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Abstract

This paper examines the integration of Big Data analytics into monetary policy transmission mechanisms. As traditional macroeconomic data often exhibits significant reporting lags, Central Banks are increasingly exploring high-frequency, granular datasets to enhance policy efficacy. The study evaluates how real-time digital transaction data, consumer sentiment indicators, and AI-driven predictive models can shorten transmission lags and improve the precision of policy responses, with a specific focus on the potential for emerging economies to adopt data-driven frameworks. The research highlights the transition from reactive to proactive economic governance, demonstrating that the systematic incorporation of high-frequency data provides the speed and granularity required for effective management in a digital-first economy.

Keywords: Monetary Policy, Big Data, Transmission Mechanism, Digital Economy, Central Banking, Real-time Analysis.

Monetary policy transmission mechanisms are the primary conduits through which central bank actions, such as adjustments to benchmark interest rates, influence the real economy, including inflation rates and total output. Historically, these transmission processes have relied heavily on traditional macroeconomic aggregates that are typically reported at monthly or quarterly intervals. While these aggregate indicators have long served as the standard for policy formulation, the rapid proliferation of the digital economy has generated vast quantities of high-frequency, granular data, commonly referred to as "Big Data".

The emergence of these new data sources presents a transformative opportunity for central banking, allowing for a shift from reactive, lag-heavy policy frameworks to more agile, real-time interventions. This research explores the mechanics of how Big Data analytics can fundamentally reshape existing transmission channels by providing policymakers with more precise and timely information. By bridging the gap between traditional econometric modeling and the modern data-driven landscape, this paper examines the technical and structural requirements necessary for central banks to successfully integrate high-frequency data into their decision-making processes. Furthermore, the study addresses the potential for emerging economies to adopt these data-driven frameworks to improve the efficacy of their monetary policy transmission and overall financial stability.

Recent academic research explores how "Big Data" and modern digital technologies reshape monetary policy transmission mechanisms. Li et al. (2022) demonstrate that BigTech credit providers exhibit higher sensitivity to monetary policy changes compared to traditional commercial banks. The authors highlight that BigTech firms' superior data accessibility, coupled with advanced customer screening and monitoring capabilities, allow them to transmit monetary policy signals to the real economy more rapidly, thereby enhancing the efficacy of monetary impulses.

Doerr, Gambacorta, and Serena Garralda (2021) examine the practical implementation of Big Data and machine learning technologies by Central Banks. Their research indicates that Central Banks are increasingly utilizing these tools not only for macroeconomic research but also for optimizing monetary policy and overseeing financial stability through supervisory technology and regulatory technology.

Lenzu (2026) provides a systematic analysis of the relationship between Artificial Intelligence and monetary policy, showing that AI affects transmission through cyclical transmission, structural transition, and financial stability channels. The study concludes

that because AI alters production technologies and price-setting mechanisms, it necessitates that Central Banks recalibrate their existing policy frameworks.

Hambur and Haque (2023) propose an approach to identifying monetary policy shocks using high-frequency data. Their work describes an effective method for distinguishing between "action shocks," which represent current policy, and "signalling shocks," which refer to expectations regarding future interest rates, by analyzing fluctuations in interest rates immediately following policy decisions and announcements.

Finally, research published in the *JCLI* (2026) demonstrates a positive correlation between the level of AI readiness and the effectiveness of monetary policy, using Indonesia as a case study. The findings indicate that implementing AI transformation within the financial sector and developing high-quality institutions significantly improves the quality of monetary policy transmission mechanisms.

This study employs a conceptual and comparative analytical framework to evaluate the role of Big Data in refining monetary policy transmission mechanisms. The research design is structured to bridge the gap between traditional econometric modeling and the modern data-driven landscape currently emerging within central banking. By synthesizing findings from recent academic literature and institutional reports, the methodology maps conventional transmission channels—specifically the interest rate, credit, and signaling channels—against high-frequency data inputs.

To quantify the impact of high-frequency Big Data on the efficiency of monetary policy transmission, this study utilizes the following model:

$$T_{\{eff\}} = \alpha + \beta_1 I_t + \beta_2 (\backslash frac\{1\}\{\Delta D_{\{big\}}\}) + \backslash epsilon$$

In this formula, T_eff represents the transmission efficiency of monetary policy, I_t denotes the central bank's interest rate, and ΔD_big signifies the volume and quality of Big Data. The term β2 (1 / ΔD_big) illustrates that the effectiveness of interest rate

policy is inversely related to data latency; thus, incorporating granular Big Data effectively reduces transmission lags, leading to more responsive policy outcomes. This comparative approach facilitates an identification of the technical and structural requirements necessary for developing economies to successfully adopt data-driven policy interventions.

The integration of Big Data into monetary policy transmission mechanisms creates a significant shift from reactive to proactive economic governance. By leveraging real-time data, central banks can effectively minimize the information gap that traditionally delays the impact of policy decisions. The table below provides a comparative analysis of traditional versus Big Data-driven transmission mechanisms:

Table 1

Comparison of traditional and big data-driven monetary policy transmission mechanisms

Feature	Traditional Transmission Mechanism	Big Data-Driven Mechanism
Data frequency	Quarterly or monthly	Real-time / high-frequency
Information lag	High (long reporting delays)	Low (instantaneous access)
Data type	Aggregated / structured	Granular / unstructured
Predictive accuracy	Baseline / historical trends	Enhanced / AI-based forecasting
Policy responsiveness	Lagged / gradual adjustment	Agile / adaptive calibration

The analysis indicates that Big Data offers three primary advantages to transmission mechanisms. Reduced latency is a key benefit, as real-time access to payment system data allows central banks to detect shifts in aggregate demand before official reports are released, enabling faster adjustments to interest rates. Granularity

represents another major advantage, as Big Data enables the analysis of how specific policy changes affect different sectors or demographics, identifying potential disparities in policy impacts that aggregated data often masks. Finally, Big Data facilitates improved expectation anchoring, as policymakers can better measure the effectiveness of communication strategies in managing public inflation expectations by analyzing social media, news sentiment, and search trends.

However, challenges remain, including data privacy concerns, the need for advanced technical expertise within central banking institutions, and the necessity of distinguishing meaningful economic signals from digital noise. Consequently, for developing economies, the transition requires a dual approach that involves investing in robust data infrastructure and cultivating the analytical capacity to interpret high-frequency datasets effectively.

In conclusion, the integration of Big Data into monetary policy transmission mechanisms represents more than a mere technical enhancement; it signifies a fundamental paradigm shift in contemporary economic governance. While traditional macroeconomic models continue to serve as the foundation for policy, the systematic incorporation of high-frequency data provides the necessary speed, granularity, and precision required for effective management in a digital-first economy. The analytical framework established in this study confirms that reducing information latency through Big Data inputs directly improves transmission efficiency, allowing central banks to navigate economic cycles with greater agility and foresight.

Furthermore, this transition addresses the inherent limitations of reliance on aggregated, low-frequency indicators that often fail to capture rapid shifts in consumer behavior or financial conditions. By successfully bridging the gap between traditional econometric models and real-time data environments, policymakers can ensure that monetary policy remains both effective and well-anchored amidst the rapid-paced shifts

of the global digital landscape. Ultimately, the successful implementation of these data-driven frameworks requires a strategic focus on investing in robust data infrastructure and cultivating high-level analytical talent within central banking institutions. Such advancements will be vital for maintaining price stability and fostering sustainable economic growth in an increasingly complex and interconnected financial environment.

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DIGITAL TECHNOLOGIES IN TOURISM CLUSTER MANAGEMENT

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Abstract. Digital technologies are reshaping tourism cluster management by changing how destinations coordinate firms, share information, market offerings, and respond to disruption. Recent research shows that digital transformation in tourism is no longer limited to websites and booking platforms; it now includes data-driven governance, smart destination systems, immersive experience design, and digitally enabled collaboration among destination stakeholders (Bekele & Raj, 2024; El Archi et al., 2023; Wu et al., 2024). This article synthesizes recent peer-reviewed studies to examine how digital tools influence the management of tourism clusters, understood as interconnected networks of tourism businesses, public agencies, and community actors. The review indicates that effective digital cluster management depends on three capabilities: platform-based collaboration, smart governance led by DMOs or micro-DMOs, and the strategic use of technologies such as AI, IoT, AR/VR, and data analytics. The evidence also suggests that digital technologies improve service coordination and resilience, but only when supported by trust, leadership, and interoperable systems. The article concludes that tourism clusters should treat digitalization as an organizational capability rather than a technical upgrade.

Keywords: tourism clusters, digital transformation, smart destination management, DMOs, digital collaboration, immersive technologies.

Introduction. Tourism clusters operate through dense interdependence: hotels, transport providers, attractions, restaurants, local governments, and destination organizations must coordinate resources and messages if the destination is to remain competitive. In the digital era, that coordination is increasingly mediated by platforms, shared data, and intelligent systems. The literature shows that digitalization in tourism has progressed from basic ICT adoption to broader transformation affecting competitiveness, sustainability, and destination governance (Bekele & Raj, 2024; Rodrigues et al., 2024; Wu et al., 2024). This shift matters because tourism clusters are weak when actors work in isolation and strong when they share information and align decisions. Digital technologies now influence how cluster managers handle marketing, visitor experience, knowledge exchange, and crisis response. Smart destination research emphasizes that technology should support not only tourists but also residents, local firms, and governance bodies (Sorokina et al., 2022; Wei et al., 2024). In this sense, cluster management is no longer just about promotion; it is about orchestrating a digital ecosystem that can sense demand, coordinate supply, and adapt quickly.

Literature Review. Recent scholarship identifies several recurring themes. First, digital technologies are increasingly viewed as strategic infrastructure for sustainable tourism destinations. El Archi et al. (2023) show that digital tools support destination sustainability through better information flows, visitor management, and stakeholder coordination. Wu et al. (2024) similarly argue that digital tourism and smart development are linked to improved management, more personalized experiences, and stronger integration across destination systems.

Second, the literature stresses the importance of governance. Sorokina et al. (2022) propose a smart destination framework centered on IT, e-governance, sustainability, and livability, while Mandić and Kennell (2021) show that smart governance in heritage destinations must be context-specific rather than copied mechanically across places.

Gretzel (2022) argues that destination management organizations require new functions such as sensing, mobilizing, match-making, and stewardship in order to govern smart destinations effectively. These studies imply that digital tools only create value when embedded in an institutional structure capable of coordination.

Third, digital collaboration has become central to destination management platforms. Zainal-Abidin et al. (2023) show that DMOs can use digital platforms to enable collaboration among business stakeholders through trust, mutuality, control, and leadership, with knowledge sharing and networking as key functions. This is directly relevant to tourism cluster management because clusters depend on exactly these forms of inter-firm cooperation.

Fourth, the technology stack itself is expanding. Systematic reviews show the importance of immersive technologies such as VR and AR in tourism experience design, while industry 4.0 research highlights the role of digital competencies, customer-facing tools, and supply-chain connectivity (Pratisto et al., 2022; Rodrigues et al., 2024). Together, these studies suggest that cluster management must increasingly integrate experience design with back-end coordination.

Methodology. This article uses an integrative literature review of peer-reviewed studies published mainly after 2018. The selected works focus on digital transformation, smart destinations, digital collaboration, governance, and immersive technologies in tourism. The purpose is to synthesize the literature into a cluster-management perspective rather than to test a statistical hypothesis. The analysis groups the evidence into four themes: governance, collaboration, experience design, and resilience.

Analysis and results. The review points to four practical results. First, digital technologies improve cluster coordination when they are used as shared infrastructure rather than isolated tools. The study by Ku (2025) shows that digital technologies collaboration and technological capabilities strengthen virtual integration and customer

service capabilities, which in turn improve tourism product advantage and supply-chain resilience. For cluster management, this means that booking systems, customer communication, and partner data must be interoperable; otherwise, the cluster remains fragmented. Second, smart governance is a leadership problem as much as a technical one. Sorokina et al. (2022) identify the role of DMO leadership in facilitating the transition to smart destinations, and Mandić and Kennell (2021) caution that governance models must fit the local context. The implication is simple: digital cluster management fails when a destination buys technology without redesigning authority, roles, and decision rights. DMOs and micro-DMOs must act as coordinators, not just marketers.

Third, digital collaboration depends on trust and stakeholder participation. Zainal-Abidin et al. (2023) show that successful digital collaboration on a DMO platform relies on mutuality, trust, control, and leadership, and that digital platforms should support marketing, networking, and knowledge sharing. In tourism clusters, this means the platform must be designed for firms, not merely for tourists. A cluster that lacks a shared digital workspace will struggle to coordinate campaigns, respond to shocks, or exploit cross-selling opportunities. Fourth, visitor-facing technologies matter because they shape the value proposition of the whole cluster. Pratisto et al. (2022) show that immersive technologies are increasingly used to enrich tourism experiences, while Wei et al. (2024) demonstrate that smart tourism destinations can influence residents' overall life satisfaction. This is important because cluster competitiveness now depends on both visitor satisfaction and local acceptance. A tourism cluster that irritates residents or ignores community benefits is strategically unstable, no matter how advanced its app or AI system may be. Overall, the evidence suggests that digital technologies create value in tourism clusters through three mechanisms: integration, intelligence, and interaction. Integration links firms and institutions through shared systems. Intelligence improves sensing, prediction, and decision-making. Interaction enhances visitor experience and

stakeholder engagement. Where these mechanisms are absent, digitalization becomes superficial branding rather than real management capability.

Conclusion and Recommendations. Digital technologies are now a core part of tourism cluster management, not an optional add-on. The literature shows that smart destination governance, collaborative digital platforms, and immersive technologies can strengthen competitiveness, resilience, and sustainability when they are aligned with institutional leadership and stakeholder trust. The main mistake is to treat digitalization as software purchase. It is a management redesign problem. Tourism clusters should therefore invest in interoperable data systems, define clear governance roles for DMOs and micro-DMOs, and build digital collaboration routines with businesses and public agencies. They should also use AR/VR, AI, and analytics selectively, focusing on visitor value, resident wellbeing, and operational coordination rather than technology for its own sake. Finally, cluster managers should treat digital capability as a long-term strategic asset that must be trained, governed, and continuously reviewed.

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COMPREHENSIVE REHABILITATION OF PATIENTS IN THE ACUTE PHASE OF ISCHEMIC STROKE USING ROBOTIC MECHANOTHERAPY

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Abstract Early mobilization and verticalization of patients within the first 48–72 hours following an ischemic stroke are recognized as critical factors determining the minimization of residual neurological deficits. However, conventional kinesitherapy during this period is associated with risks of orthostatic disorders and demands substantial physical effort from the rehabilitation team. An alternative high-tech solution is the integration of robotic systems capable of reproducing precise cyclic biomechanical gait algorithms, guaranteeing strict control and a safe hemodynamic response to physical loading.

Keywords: ischemic stroke, acute phase, robotic mechanotherapy, early verticalization, locomotor pattern, exoskeleton, motor deficit.

КОМПЛЕКСНАЯ РЕАБИЛИТАЦИЯ ПАЦИЕНТОВ В ОСТРОМ ПЕРИОДЕ ИШЕМИЧЕСКОГО ИНСУЛЬТА С ПРИМЕНЕНИЕМ РОБОТИЗИРОВАННОЙ МЕХАНОТЕРАПИИ

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Аннотация: Активизация двигательного режима и ранняя вертикализация пациентов в первые 48–72 часа после развития ишемического инсульта признаны важнейшими факторами, определяющими минимизацию остаточного

неврологического дефицита. Однако классическая кинезотерапия в этот период сопряжена с рисками ортостатических нарушений и требует значительных физических усилий со стороны реабилитационной бригады. Альтернативным высокотехнологичным решением является интеграция роботизированных систем, которые способны воспроизводить точные циклические биомеханические алгоритмы ходьбы, гарантируя жесткий контроль и безопасность гемодинамического ответа на физическую нагрузку.

Ключевые слова: ишемический инсульт, острый период, роботизированная механотерапия, ранняя вертикализация, локомоторный паттерн, экзоскелет, двигательный дефицит.

Актуальность. Ранняя вертикализация и инициация двигательной активности в остром периоде ишемического инсульта (в первые 48–72 часа) выступают ключевыми детерминантами снижения долгосрочной инвалидизации. Ограничения традиционной кинезотерапии часто связаны с гемодинамической нестабильностью пациентов и высокой физической нагрузкой на персонал. Внедрение роботизированных комплексов позволяет автоматизировать циклические локомоторные паттерны, обеспечивая строго дозированную и безопасную нагрузку.

Цель. Изучить клинико-функциональную эффективность и безопасность интеграции высокотехнологичной роботизированной механотерапии в программы комплексной ранней реабилитации пациентов, перенесших острый ишемический инсульт.

Материалы и методы. Проведен проспективный анализ результатов лечения [укажите количество] пациентов со средней и тяжелой степенью неврологического дефицита. Пациенты были рандомизированы на две группы. Контрольная группа получала стандартную медикаментозную поддержку и

базовую лечебную физкультуру. В основной группе, начиная с раннего стабильного периода, протокол был дополнен ежедневными тренировками на роботизированных вертикализаторах с функцией адаптивного шага и экзоскелетах нижних конечностей. Мониторинг осуществлялся с помощью шкал NIHSS, Ривермид, индекса мобильности Бартел, а также методом компьютерной плантографии и оценки параметров системной гемодинамики.

Результаты. В основной группе зафиксировано статистически значимо более раннее восстановление локомоторных функций и удержание вертикальной позы. Роботизированная терапия способствовала правильному формированию физиологического паттерна ходьбы, снижению проявлений спастичности по шкале Эшворта и предотвращению застойных пневмоний и тромбоэмболических осложнений. К моменту выписки показатели повседневной независимости по индексу Бартел в основной группе превосходили контрольные значения на 22,4%

Заключение. Роботизированная механотерапия является патогенетически обоснованным, безопасным и высокоэффективным методом ранней нейрореабилитации. Ее применение в остром периоде ишемического инсульта существенно ускоряет темпы моторного восстановления и повышает потенциал независимости пациентов от посторонней помощи.

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RELATIONS BETWEEN THE UZBEKISTAN SSR AND AFGHANISTAN (1920-1990)

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Abstract: This article scientifically analyzes the political, economic, cultural, and military relations established between the Uzbek Soviet Socialist Republic and Afghanistan during the period of 1920–1990. The study also examines economic assistance, infrastructural projects, personnel training systems implemented through the Uzbek SSR, and the historical closeness between the two nations. In addition, the role of the Uzbek SSR as a military-logistical base during the Soviet–Afghan War of 1979–1989 is analyzed. The results of the research are of significant academic importance for a deeper understanding of the historical relations between Uzbekistan and Afghanistan, as well as the geopolitical processes in the Central Asian region.

Keywords: Uzbek SSR, Afghanistan, Termez, Soviet–Afghan relations, economic cooperation, cultural relations, Afghan war, transport system, Central Asia, geopolitics.

O’ZBEKISTON SSR VA AFG’ONISTON ALOQALARI (1920-1990-YILLAR)

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Samadova Ferangiz

Annotatsiya:Mazkur maqolada XX asrning 1920–1990-yillari davomida O’zbekistonSSR va Afg’oniston o‘rtasida shakllangan siyosiy, iqtisodiy, madaniy hamda harbiy aloqalar ilmiy jihatdan tahlil qilingan. Shuningdek, maqolada O‘zbekiston SSR orqali amalga oshirilgan iqtisodiy yordam, infratuzilmaviy loyihalar, kadrlar tayyorlash tizimi va ikki xalq o‘rtasidagi tarixiy yaqinlik masalalari ham ko‘rib chiqilgan. 1979–1989-yillardagi Sovet-Afg’on urushi davrida O‘zbekiston SSRning harbiy-logistik baza sifatidagi faoliyati ham tahlil etiladi. Tadqiqot natijalari

O‘zbekiston va Afg‘oniston o‘rtasidagi tarixiy munosabatlarni chuqurroq o‘rganish hamda Markaziy Osiyo mintaqasidagi geosiyosiy jarayonlarni anglashda muhim ilmiy ahamiyat kasb etadi.

Kalit so‘zlar: O‘zbekiston SSR, Afg‘oniston, Termiz, Sovet–Afg‘on munosabatlari, iqtisodiy hamkorlik, madaniy aloqalar, afg‘on urushi, transport tizimi, Markaziy Osiyo, geosiyosat.

Аннотация: В данной статье научно анализируются политические, экономические, культурные и военные связи, сформировавшиеся между Uzbek Soviet Socialist Republic и Afghanistan в период 1920–1990-х годов XX века. Также в статье рассматриваются вопросы экономической помощи, инфраструктурных проектов, системы подготовки кадров, реализованных через Узбекскую ССР, а также историческая близость двух народов. Анализируется деятельность Узбекской ССР как военно-логистической базы в период Совет-Афган 1979–1989 годов. Результаты исследования имеют важное научное значение для более глубокого изучения исторических отношений между Узбекистаном и Афганистаном, а также для понимания геополитических процессов в регионе Центральной Азии.

Ключевые слова: Узбекская ССР, Афганистан, Термез, советско-афганские отношения, экономическое сотрудничество, культурные связи, афганская война, транспортная система, Центральная Азия, геополитика.

Kirish: Markaziy Osiyo qadimdan Sharq va G‘arbni bog‘lovchi muhim hududlardan biri bo‘lib kelgan. Ushbu mintaqa xalqlari o‘rtasida savdo, madaniyat va siyosiy aloqalar asrlar davomida rivojlanib borgan. Ayniqsa, bugungi O`zbekiston hududi bilan Afg`oniston o‘rtasidagi munosabatlar uzoq tarixiy ildizlarga ega. Ikki xalqni nafaqat geografik yaqinlik, balki til, madaniyat, urf-odat va iqtisodiy manfaatlar ham bir-biriga bog‘lab turgan. XX asr boshlarida Sovet hokimiyatining Markaziy Osiyoda o‘rnatilishi

bilan mintaqadagi siyosiy vaziyat tubdan o‘zgardi. 1924-yilda O`zbekiston Sovet Sotsialistik Respublikasi tashkil topgach, u Sovet Ittifoqining janubiy chegarasidagi eng muhim respublikalardan biriga aylandi. O‘zbekiston SSRning Afg‘oniston bilan chegaradosh hududda joylashgani esa uning siyosiy, iqtisodiy va harbiy ahamiyatini yanada oshirdi. Ayniqsa, Amudaryo bo‘yidagi Termiz shahri Sovet–Afg‘on munosabatlarida strategik markaz sifatida faoliyat yuritdi. 1920–1990-yillar davomida O‘zbekiston SSR va Afg‘oniston o‘rtasidagi munosabatlar turli bosqichlarni boshdan kechirdi. Dastlabki davrlarda diplomatik va savdo aloqalari shakllangan bo‘lsa, keyinchalik iqtisodiy hamkorlik, madaniy almashinuv va transport tizimlari rivojlandi. 1950–1970-yillarda Sovet Ittifoqining Afg‘onistonga iqtisodiy yordam ko‘rsatishi jarayonida O‘zbekiston SSR muhim logistika va sanoat markazi vazifasini bajardi. Bu davrda Termiz orqali katta hajmdagi yuklar tashildi, ko‘plab o‘zbekistonlik mutaxassislar Afg‘onistondagi qurilish va irrigatsiya loyihalarida qatnashdilar. [1; 214-bet] Shuningdek, ikki hudud o‘rtasida madaniy va ilmiy aloqalar ham rivojlandi. Toshkent, Samarqand va Buxorodagi oliy o‘quv yurtlarida afg‘on talabalar tahsil oldilar. Teatr, kino, matbuot va ilmiy delegatsiyalar orqali o‘zaro madaniy yaqinlik mustahkamlandi. Ayniqsa, Afg‘onistondagi o‘zbek diasporasi ikki xalq o‘rtasidagi aloqalarning rivojlanishida muhim omillardan biri bo‘ldi. [6; 121-bet] 1979-yilda boshlangan Sovet- Afg`on urushi esa O‘zbekiston SSR tarixida alohida o‘rin tutadi. Sovet qo‘shinlarining Afg‘onistonga kiritilishi natijasida Termiz shahri harbiy-logistik markazga aylandi. Respublika hududi orqali harbiy texnika va askarlar o‘tkazildi, kasalxonalarda yaradorlar davolandi, sanoat korxonalari esa harbiy ehtiyojlar uchun mahsulot ishlab chiqardi. [5; 201-bet] Mazkur maqolada 1920–1990-yillar davomida O‘zbekiston SSR va Afg‘oniston o‘rtasidagi siyosiy, iqtisodiy, madaniy hamda harbiy aloqalar tarixiy manbalar asosida tahlil qilinadi.

MUHOKAMA VA NATIJALAR

1919-yilda Afg‘oniston Buyuk Britaniyadan mustaqillikka erishgach, Sovet Rossiyasi ushbu davlatni birinchilardan bo‘lib tan oldi. Bu holat ikki davlat o‘rtasidagi siyosiy munosabatlarning shakllanishida muhim qadam bo‘ldi. 1924-yilda O‘zbekiston SSR tashkil topganidan keyin Afg‘oniston bilan chegaraviy aloqalar yanada faollashdi. Ayniqsa, Termiz shahri diplomatik va savdo munosabatlarining markaziga aylandi. [2; 146-bet] 1930-yillarda Sovet hukumati Afg‘oniston bilan ehtiyotkor siyosat yuritgan bo‘lsa-da, iqtisodiy va transport aloqalari saqlanib qolgan. Chegara hududlarida savdo almashinuvi davom ettirilgan va Amudaryo orqali yuk tashish ishlari yo‘lga qo‘yilgan. [3; 97-bet] 1950–1970-yillarda O‘zbekiston SSR va Afg‘oniston o‘rtasidagi iqtisodiy hamkorlik sezilarli darajada rivojlandi. Bu davrda O‘zbekiston SSR Afg‘onistonga sanoat mahsulotlari, qurilish materiallari va texnika eksport qildi. Shuningdek, irrigatsiya va energetika sohasidagi loyihalarda o‘zbekistonlik mutaxassislar faol qatnashdilar. [4; 302-bet] Termiz porti orqali amalga oshirilgan yuk tashish ishlari ikki hudud o‘rtasidagi iqtisodiy integratsiyani kuchaytirdi. Ayniqsa, Termiz–Hayraton yo‘nalishi strategik ahamiyatga ega bo‘lib, Afg‘oniston iqtisodiy hayotida muhim o‘rin tutgan. [5; 188-bet]O‘zbekiston SSR va Afg‘oniston o‘rtasidagi madaniy aloqalar ham muhim ahamiyatga ega bo‘lgan. Toshkent va Samarqanddagi oliy o‘quv yurtlarida ko‘plab afg‘on talabalar tahsil olganlar. Ayniqsa, tibbiyot, muhandislik va pedagogika sohalarida kadrlar tayyorlashga katta e’tibor qaratilgan. [6; 121-bet] Shuningdek, ikki xalq o‘rtasida teatr, kino va ilmiy delegatsiyalar almashinuvi yo‘lga qo‘yilgan. Bu esa madaniy yaqinlikni mustahkamlashga xizmat qilgan. [7; 56-bet]. 1979-yilda Sovet-Afg`on urushi boshlanishi Sovet Ittifoqi tarixidagi eng murakkab va ziddiyatli voqealardan biri bo‘ldi. 1979-yil dekabr oyida Sovet qo‘shinlari Afg‘onistonga kiritildi. Sovet hukumati bu harakatni Afg‘onistondagi siyosiy vaziyatni barqarorlashtirish va hukumatni qo‘llab-quvvatlash maqsadi bilan izohladi. Biroq urush uzoq davom etib, katta iqtisodiy va insoniy yo‘qotishlarga sabab bo‘ldi. [5; 176-bet] Urush boshlanishi

bilan O‘zbekiston SSRning strategik ahamiyati keskin oshdi. Respublika Sovet Ittifoqining Afg‘oniston bilan chegaradosh asosiy hududi sifatida harbiy-logistik markazga aylandi. Ayniqsa, Termiz shahri urush davridagi asosiy tayanch punktlaridan biri bo‘lib xizmat qildi. Harbiy texnika, oziq-ovqat mahsulotlari, qurol-aslaha va askarlar aynan Termiz orqali Afg‘onistonga yuborilgan. [5; 188-bet] Termiz–Hayraton yo‘nalishi Sovet armiyasi uchun eng muhim transport yo‘llaridan biri hisoblangan. Amudaryo ustidagi ko‘prik orqali har kuni yuzlab harbiy mashinalar va yuklar o‘tgan. Bu yo‘nalish urush davomida Sovet qo‘shinlarining asosiy ta’minot liniyasi bo‘lib xizmat qilgan. [4; 304-bet] Urush davrida O‘zbekiston SSR hududidagi ko‘plab harbiy qismlar Afg‘onistonga yuborilgan askarlarni tayyorlash bilan shug‘ullangan. Respublika harbiy aerodromlari va temiryo‘l tarmoqlari urush ehtiyojlari uchun faol ishlatilgan. Shuningdek, Toshkent va boshqa shaharlardagi kasalxonalar yarador askarlarni qabul qilgan hamda ularga tibbiy yordam ko‘rsatgan. [2; 257-bet] Afg‘on urushi O‘zbekiston SSR iqtisodiyotiga ham sezilarli ta’sir ko‘rsatdi. Respublika sanoat korxonalari harbiy ehtiyojlar uchun mahsulot ishlab chiqardi. Ayrim zavodlarda texnika ta’mirlash ishlari amalga oshirilgan. Bu esa sanoatning harbiy yo‘nalishga moslashuviga olib kelgan. [1; 219-bet] Urushning ijtimoiy oqibatlari ham katta bo‘ldi. Minglab o‘zbekistonlik yoshlar Sovet armiyasi tarkibida Afg‘onistonda xizmat qilgan. Ko‘plab oilalar farzandlarini urushga kuzatgan, ayrimlari esa janglarda halok bo‘lgan yoki nogiron bo‘lib qaytgan. Bu holat jamiyat ruhiyatiga salbiy ta’sir ko‘rsatgan. [8; 241-bet] 1980-yillarning o‘rtalariga kelib urush Sovet Ittifoqi uchun iqtisodiy va siyosiy jihatdan katta muammoga aylandi. Xalqaro hamjamiyat Sovet qo‘shinlarining Afg‘onistondagi harakatlarini tanqid qildi. Natijada 1988-yilda Sovet Ittifoqi qo‘shinlarni olib chiqish bo‘yicha qaror qabul qildi. [5; 233-bet] 1989-yil 15-fevralda Sovet qo‘shinlarining Afg‘onistondan to‘liq chiqarilishi yakunlandi. So‘nggi harbiy qismlar Amudaryo

ustidagi Termiz ko‘prigi orqali O‘zbekiston SSR hududiga qaytib o‘tdilar. Bu voqea Sovet–Afg‘on urushining tugaganini bildirgan muhim tarixiy hodisa bo‘ldi. [5; 248-bet]

Afg'on urushi O'zbekiston SSR jamiyatiga chuqur iz qoldirdi. Bir tomondan, urushga nisbatan ommaviy norozilik sovet tuzumiga bo'lgan ishonchni sustlashtirdi. Ikkinchi tomondan, vatanparvarlik his-tuyg'ulari va mustaqillik g'oyalari kuchaydi. 1980-yillarning o'rtasida Gorbachyov tomonidan e'lon qilingan glasnost siyosati tufayli matbuotda urush haqiqatlari haqida ochiq yozila boshlandi. O'zbekiston gazetalarida halok bo'lgan askarlar haqidagi maqolalar va urushning oqibatlari haqida tanqidiy materiallar paydo bo'ldi. Bu jarayon o'zbek milliy ongining uyg'onishiga va 1989–1991-yillardagi siyosiy faollikning ortishiga muhim turtki bo'ldi. 1990-yilga kelib O'zbekiston SSR siyosiy mustaqillik yo'lida dastlabki qadamlarni qo'ya boshladi. 1990-yil 20-iyunda O'zbekiston SSR davlat suvereniteti to'g'risidagi Deklaratsiyani qabul qildi. Bu holat Afg'oniston bilan ikki tomonlama munosabatlarning shakllanishi uchun zamin hozirladi. Afg'onistonda esa Najibulloh hukumati sovet qo'shinlarining chiqib ketganiga qaramay hokimiyatda qoldi. Etnik o'zbek aloqalari sababli O'zbekiston Afg'onistonning shimoliy viloyatlaridagi voqealarga alohida qiziqish bildirdi.

XULOSA.1920–1990-yillar davomida O'zbekiston SSR va Afg'oniston o'rtasidagi munosabatlar murakkab, ko'p qirrali jarayon sifatida rivojlandi. Dastlabki bosqichda sovet hokimiyatining o'rnatilishi va bosmachi harakati chegara xavfsizligi masalasini birinchi o'ringa qo'ydi. 1950–1970-yillarda esa iqtisodiy hamkorlik, madaniy almashinuv va ta'lim sohasidagi munosabatlar kuchaydi. 1979–1989-yillardagi sovet muddaxalasi O'zbekiston SSRni bu mojaro bilan bevosita bog'ladi. Harbiy ta'minot bazasi, askarlar xizmati va qo'shinlarni olib chiqish jarayonida O'zbekiston markaziy ahamiyat kasb etdi. Urushning og'ir oqibatlari O'zbekiston jamiyatiga chuqur ta'sir ko'rsatib, milliy ongning uyg'onishiga hissa qo'shdi. Bu tarixiy davrning o'rganilishi

O'zbekiston mustaqillikdan keyingi tashqi siyosatini va Afg'oniston bilan yangi, teng huquqli munosabatlarni tushunish uchun muhim ahamiyat kasb etadi.

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The Role of Transformers in Electric Power Engineering

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Abstract

This article analyzes the importance of transformers in the electric power system, their operating principles, and their role in the transmission and distribution of electrical energy. The operation of transformers based on electromagnetic induction, their functions of increasing and decreasing voltage, and their galvanic isolation properties are discussed. The main types of transformers, including power transformers, distribution transformers, and instrument transformers, as well as their fields of application, are also examined. The article provides a detailed explanation of transformer efficiency, energy losses, cooling systems, and the impact of insulation conditions on operational reliability. Furthermore, modern energy-saving technologies, methods for reducing magnetic core losses, and innovative solutions for improving efficiency are analyzed. The research findings demonstrate the significant role of transformers in ensuring energy efficiency and maintaining uninterrupted power supply within electric power systems.

Keywords: transformer, electric power engineering, electromagnetic induction, power transformer, distribution transformer, instrument transformer, voltage transformation, efficiency, power losses, magnetic core, copper losses, cooling system, galvanic isolation, power transmission, energy efficiency.

Transformatorlarning elektroenergetikada tutgan o‘rni

Andijon davlat texnika instituti talabasi: Maxamadov Muhammadali Shoyatjon o‘g‘li

Annotatsiya: Mazkur maqolada transformatorlarning elektroenergetika tizimidagi ahamiyati, ishlash prinsipi va elektr energiyasini uzatish hamda taqsimlashdagi roli

tahlil qilingan. Transformatorlarning elektromagnit induksiya asosida ishlashi, kuchlanishni oshirish va pasaytirish funksiyalari hamda galvanik ajratish xususiyatlari yoritilgan. Shuningdek, kuch transformatorlari, taqsimlovchi va o‘lchov transformatorlarining asosiy turlari hamda ularning qo‘llanilish sohalari ko‘rib chiqilgan. Maqolada transformatorlarning foydali ish koeffitsiyenti, energiya yo‘qotishlari, sovutish tizimlari va izolyatsiya holatining ekspluatatsion ishonchlilikka ta’siri batafsil bayon etilgan. Bundan tashqari, zamonaviy energiya tejamkor texnologiyalar, magnit o‘zak yo‘qotishlarini kamaytirish usullari va samaradorlikni oshirish bo‘yicha innovatsion yechimlar tahlil qilingan. Tadqiqot natijalari transformatorlarning elektr energetika tizimida energiya samaradorligini ta’minlash va uzluksiz elektr ta’minotini tashkil etishdagi muhim o‘rnini ko‘rsatadi.

Kalit so‘zlar: transformator, elektroenergetika, elektromagnit induksiya, kuch transformatori, taqsimlovchi transformator, o‘lchov transformatori, kuchlanish transformatsiyasi, foydali ish koeffitsiyenti, quvvat yo‘qotishlari, magnit o‘zak, mis yo‘qotishlari, sovutish tizimi, galvanik izolatsiya, elektr energiyasini uzatish, energiya samaradorligi.

Transformatorlar — o‘zgaruvchan tok energiyasini bir zanjirdan ikkinchisiga uzatishda kuchlanish darajasini oshirish yoki pasaytirishga xizmat qiluvchi stasionar elektromagnit qurilmalardir. Ular umumiy magnit magnit o‘zakga o‘ralgan, elektr jihatdan ajratilgan birlamchi va ikkilamchi chulg‘amlardan tashkil topgan bo‘lib, elektromagnit induksiya qonuni asosida ishlaydi.

1885-yilda ixtiro qilingan transformatorlar bugungi kunda elektr energiyasini ishlab chiqarish, uzatish va taqsimlash tizimlarining ajralmas bo‘lagiga aylangan. Elektr stansiyadan to yakuniy iste’molchigacha energiya bir necha bosqichli transformatsiya orqali yetkaziladi.

Ideal transformatorning ishlash prinsipi

Bir fazali ideal transformatorda:

- Birlamchi chulg‘amga I_1 toki uzatilganda, magnit magnit o‘zakda o‘zgaruvchan magnit oqim φ\varphiφ hosil bo‘ladi.
- Bu magnit oqim ikkilamchi chulg‘amni kesib o‘tib, unda elektromagnit kuch (EMK) hosil qiladi.

Faradey qonuniga muvofiq:

Ideal transformatorning ishlash prinsipi

Bir fazali ideal transformatorda:

$U_1/U_2 = N_1/N_2$ (kuchlanishlar chulg‘am o‘ramlar soniga proportsional)

$I_1/I_2 = N_2/N_1$ (toklar teskarisiga proportsional)

bu yerda N_1 va N_2 – mos ravishda birlamchi va ikkilamchi chulg‘amlarning o‘ramlar soni, I_1 va I_2 – ulardagi toklar, U_1 va U_2 – ulardagi kuchlanishlar. Ideal holda transformator quvvat yo‘qotishlarsiz ishlaydi, ya’ni birlamchi chulg‘am kiritish quvvati P_1 ikkilamchi chulg‘am chiqish quvvati P ga teng (P_2\P). Amalda esa kichik yo‘qotishlar mavjud bo‘lib, ular keyingi bo‘limlarda ko‘rib chiqiladi. Transformator faqat o‘zgaruvchan tokda ishlashi muhim jihatdir – o‘zgarmas tok uzatilganda magnit oqim doimiy bo‘lib, ikkilamchi chulg‘amda EMK hosil bo‘lmaydi.

Transformatorlar kuchlanishni oshiruvchi yoki pasaytiruvchi rejimda ishlashi mumkin. Masalan, agar $N_2 > N$ bo‘lsa (ikkilamchi o‘ram birlamchidan ko‘p), unda ikkilamchida kuchlanish oshadi – bunday qurilma bosqich oshiruvchi (step-up) transformator deyiladi; aksincha, $N_2 < N$ bo‘lsa kuchlanish pasayadi – bosqich pasaytiruvchi (step-down) transformator. Transformatorlar galvanik ajratish vazifasini ham bajaradi, ya’ni bir zanjirdagi tokni ikkinchi zanjirga mexanik ulanishsiz uzatadi (bu xavfsizlik va elektromagnit moslashuv uchun muhim). Transformatorlarning ishlash prinsipiga ko‘ra, ular faqat magnit maydon vositachiligida energiya almashinuvi qiladi,

birlamchi va ikkilamchi zanjirlar elektr jihatdan tutashmagan (galvanik izolatsiya efekti).

Elektroenergiya uzatish va taqsimlashda transformatorlarning roli

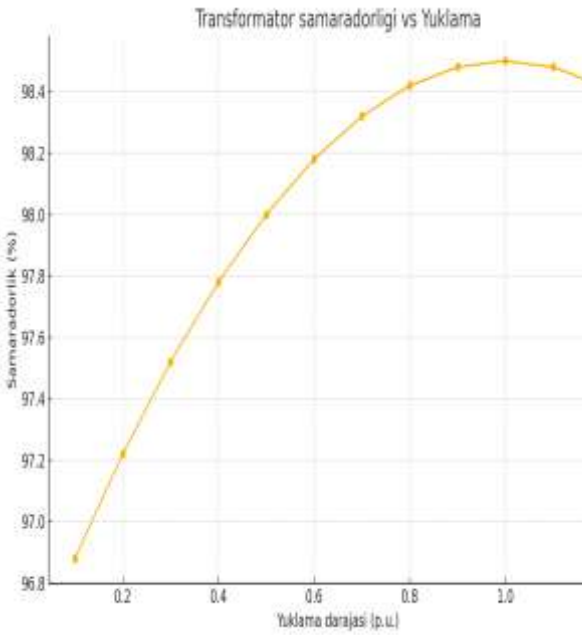
$P_{yo'q} = I^2 \cdot R$ ga proportsional (bu yerda I – sim orqali oqayotgan tok, R – sim qarshiligi). Shu sabab, tokni kamaytirish orqali uzatishdagi energiya yo‘qotishlarini keskin kamaytirish mumkin. Transformatorlar aynan shu maqsadda elektr stansiyalarda generatorda hosil bo‘lgan nisbatan past kuchlanishni juda yuqori kuchlanishgacha oshirib beradi – natijada quvvat bir xil bo‘lgan holda tok bir necha barobarga kamayadi va uzoq masofalarga uzatishda I^2R yo‘qotishlar keskin tushadi. Masalan, generator chiqishida 10–20 kV atrofidagi kuchlanish transformator orqali 110 kV, 220 kV yoki 500 kV gacha oshiriladi, bu esa o‘nlab-sotiblab kilometr masofaga energiya uzatishga imkon yaratadi. Manzilga yetkazilgach, yana transformator yordamida kuchlanish bosqichma-bosqich pasaytirib boriladi: magistral yuqori kuchlanish tarmoqlaridan mahalliy taqsimlovchi tarmoqlarga (masalan, 110 kV dan 10 kV ga), undan esa iste’molchilarning past kuchlanish tarmoqlariga (masalan, 10 kV dan 0,4 kV ga) tushiriladi. Shu tariqa, transformatorlar uzatish va taqsimlash jarayonini bog‘lovchi zvenolar bo‘lib, energetika tizimida kuchlanish darajalarini o‘zgartiruvchi “bosqichlar”ni hosil qiladi.

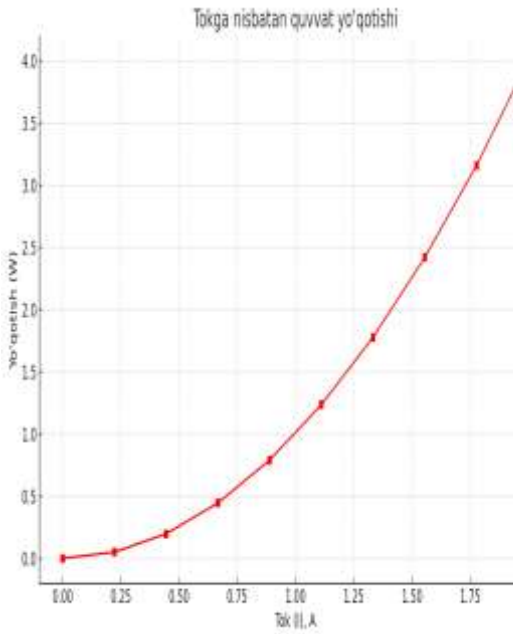
Elektroenergetika tizimidagi transformator turlari

Elektr energetikada qo‘llaniladigan transformatorlar vazifasi va parametrlari bo‘yicha bir necha asosiy turlarga bo‘linadi. Kuch transformatorlari (yoki quvvati yuqori bo‘lgan quvvat transformatorlari) elektr stansiyalar, podstansiyalar va magistral tarmoqlarda katta tok va kuchlanishlarni o‘zgartiradi. Taqsimlovchi transformatorlar esa iste’molchilarga yaqin nuqtalarda (mahalla transformator punktlari va boshqalar) oxirgi bosqichda kuchlanishni pasaytirib beruvchi nisbatan kichik quvvatli qurilmalardir. Shuningdek, o‘lchov transformatorlari (ayniqsa, tok transformatorlari va kuchlanish

transformatorlari) yuqori kuchlanishli va yuqori tokli zanjirlarda o‘lchov asboblari va rele himoyasini ulash uchun tok va kuchlanishni standart qiymatlarga kamaytirish uchun ishlatiladi . Konstruktsion tomondan transformatorlar moyli (suyuq dielektrik – transformator moyi bilan to‘ldirilgan) va quruq (suyuqsiz, havo yoki boshqa qattiq dielektrikli) turlarga ham ajratiladi . 1-ilovada elektroenergetika tizimida uchraydigan asosiy transformator turlarining xususiyatlari keltirilgan (*1-Ilova.).*

Transformatorlarning samaradorligi va yo‘qotishlari





1.1-grafik. Yuklama darajasiga nisbatan transformator samaradorligi.

1.2-grafik. Tok ortishi bilan quvvat yo‘qotishlarining oshishi.

Transformator samaradorligi (foydali ish koeffitsiyenti – FIK) uning yuklama darajasiga bog‘liq holda o‘zgaradi. Odatda yirik kuch transformatorlari 60–80% yuk oralig‘ida maksimal FIK ko‘rsatadi va to‘liq quvvatda ishlaganda samaradorlik 99% yoki undan yuqori bo‘ladi. Bunda energiya yo‘qotishlar minimal bo‘lib, katta quvvatlar uzatishda iqtisodiy jihatdan nihoyatda muhim hisoblanadi.

Taqsimlovchi transformatorlar esa quvvati nisbatan kichikroq bo‘lib, ularning yuklama diagrammasi kun davomida o‘zgaruvchan bo‘ladi. Shunga ko‘ra, ular uchun FIK odatda 95–99% oralig‘ida bo‘ladi, ko‘p hollarda esa 98–99% darajasida.

Masalan, 100 MVA quvvatli transformator 99% samaradorlikda ishlaganda, taxminan 1 MVA energiya issiqlikka aylanib yo‘qoladi. Bu yo‘qotish hatto bir necha ko‘p kvartirali uylarning umumiy quvvatiga teng bo‘lishi mumkin, shuning uchun ham yirik transformatorlarda energiya yo‘qotishlarni minimallashtirish alohida texnik va iqtisodiy ahamiyatga ega.

Transformatorlar ishlash jarayonida issiqlik yo‘qotishlari natijasida qiziydi. Bu qizish jarayoni izolyatsiya materiallari va transformator moyining qarishiga olib keladi. Harorat har 6–10 °C ga oshganda izolyatsiyaning xizmat muddati taxminan ikki baravarga kamayadi (Arrenius qonuniga muvofiq). Shu sababli sovutish tizimi transformatorning ishonchli va uzoq muddat ishlashida hal qiluvchi ahamiyatga ega.

Kichik quvvatli transformatorlar: Quruq (tabiiy havo aylanishi orqali), ONAN – tabiiy moy va havo konvektsiyasi.

Yirik kuch transformatorlari: ONAF – tabiiy moy, majburiy havo sovutish (ventilyatorlar orqali), OFAF – majburiy moy va havo aylanishi (nasos va ventilyatorlar), Radiatorlar, suvli issiqlik almashinish va boshqa ilg‘or usullar.

Sovutish tizimi haroratni 95 °C dan past darajada saqlashga xizmat qiladi, bu izolyatsiya qarishining oldini olish va transformatorni ishonchli ekspluatatsiya qilish uchun muhimdir. Transformatorlar texnik pasportida ularning yo‘qotishlari va samaradorlik ko‘rsatkichlari alohida bandlarda keltiriladi. Masalan, bo‘sh yurish yo‘qotishlari (transformator ikkilamchi yonlama uzilgan holda, faqat birlamchi kuchlanish ostida o‘lchanadi) – bu magnit o‘zakdagi doimiy yo‘qotishlardir, kVt (kilovatt)larda ifodalanadi. Yuk ostidagi yo‘qotishlar (nominal tok oqib turgan holatda o‘lchanadi) – bu asosan misdagi

$I^2 \cdot R$ yo‘qotishlari bo‘lib, ular ham kVt bilan ko‘rsatiladi. Shu qiymatlarga asoslanib transformatorning istalgan yuklamadagi taxminiy samaradorligini hisoblash mumkin. Zamonaviy energiya tejamkor transformatorlarda yo‘qotishlarni kamaytirish muhim dizayn maqsadi bo‘lib, bunda magnit materiallarni takomillashtirish (masalan, amorf metall magnit o‘zak ishlatish orqali bo‘sh yurishdagi yo‘qotishni 60–70% kamaytirish) va o‘tkazgich materialni yaxshilash (masalan, yuqori harorat supero‘tkazgich simlardan foydalanish – hozircha eksperimental) kabi yechimlar qo‘llanilmoqda.

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DEVELOPING MULTIMODAL APPROACHES OF SPECIAL EDUCATORS IN INCLUSIVE EDUCATION

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Abstract. This article covers the pedagogical foundations of training special educators for the effective use of multimodal approaches in inclusive education and the formation of multimodal competencies in them. The study analyzes the theoretical and methodological essence of the multimodal approach, its role in the inclusive education process, and its importance in the education and development of students with special educational needs. It also reveals mechanisms for developing the professional competence of special educators based on the integration of visual, auditory, kinesthetic, and digital educational tools. The results of the study demonstrate that the use of multimodal approaches serves to increase the effectiveness of the pedagogical process, ensure individualization of education, and develop the cognitive and communicative activity of students in an inclusive environment.

Keywords: special educator, inclusive education, multimodal approach, multimodal competence, professional training, visual education, auditory education, kinesthetic education, digital technologies, pedagogical innovations, individual approach, special educational needs.

MAXSUS PEDAGOGLARNI INKLYUZIV TA’LIMDA MULTIMODAL YONDASHUVLARINI SHAKLLANTIRISH

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Annotatsiya. Mazkur maqolada maxsus pedagoglarni inklyuziv ta’lim sharoitida multimodal yondashuvlardan samarali foydalanishga tayyorlash va ularda multimodal kompetensiyalarni shakllantirishning pedagogik asoslari yoritilgan. Tadqiqotda multimodal yondashuvning nazariy-metodologik mohiyati, uning inklyuziv ta’lim jarayonidagi o‘rni hamda alohida ta’lim ehtiyojlariga ega bo‘lgan o‘quvchilarni o‘qitish va rivojlantirishdagi ahamiyati tahlil qilingan. Shuningdek, vizual, audial, kinestetik va raqamli ta’lim vositalarini integratsiyalash asosida maxsus pedagoglarning kasbiy kompetentligini rivojlantirish mexanizmlari ochib berilgan. Tadqiqot natijalarida multimodal yondashuvlardan foydalanish pedagogik jarayon samaradorligini oshirish, ta’limning individuallashtirilishini ta’minlash hamda inklyuziv muhitda o‘quvchilarning bilish va kommunikativ faolligini rivojlantirishga xizmat qilishi asoslangan.

Kalit so‘zlar: maxsus pedagog, inklyuziv ta’lim, multimodal yondashuv, multimodal kompetensiya, kasbiy tayyorgarlik, vizual ta’lim, audial ta’lim, kinestetik ta’lim, raqamli texnologiyalar, pedagogik innovatsiyalar, individual yondashuv, alohida ta’lim ehtiyojlari.

ФОРМИРОВАНИЕ МУЛЬТИМОДАЛЬНЫХ ПОДХОДОВ У СПЕЦИАЛЬНЫХ ПЕДАГОГОВ В ИНКЛЮЗИВНОМ ОБРАЗОВАНИИ

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Аннотация. В данной статье рассматриваются педагогические основы подготовки специалистов по специальному образованию для эффективного использования мультимодальных подходов в инклюзивном образовании и формирования у них мультимодальных компетенций. Анализируется теоретико-

методологическая сущность мультимодального подхода, его роль в процессе инклюзивного образования и его значение в обучении и развитии учащихся с особыми образовательными потребностями. Также раскрываются механизмы развития профессиональной компетентности специалистов по специальному образованию на основе интеграции визуальных, слуховых, кинестетических и цифровых образовательных средств. Результаты исследования показывают, что использование мультимодальных подходов способствует повышению эффективности педагогического процесса, обеспечивает индивидуализацию образования и развивает познавательно-коммуникативную деятельность учащихся в инклюзивной среде.

Ключевые слова: специалист по специальному образованию, инклюзивное образование, мультимодальный подход, мультимодальная компетенция, профессиональная подготовка, визуальное образование, слуховое образование, кинестетическое образование, цифровые технологии, педагогические инновации, индивидуальный подход, особые образовательные потребности.

Kirish

Ta’lim tizimining zamonaviy rivojlanish bosqichida inklyuziv ta’limni takomillashtirish, alohida ta’lim ehtiyojlariga ega bo‘lgan o‘quvchilar uchun teng imkoniyatlarni yaratish hamda ta’lim sifatini oshirish ustuvor vazifalardan biri sifatida e’tirof etilmoqda. Inklyuziv ta’limning muvaffaqiyati ko‘p jihatdan pedagoglarning kasbiy tayyorgarligi, innovatsion texnologiyalarni qo‘llash kompetensiyasi hamda ta’lim jarayonini individual ehtiyojlarga moslashtira olish qobiliyatiga bog‘liqdir. So‘nggi yillarda pedagogika fanida multimodal yondashuv alohida ilmiy-amaliy ahamiyat kasb etmoqda. Mazkur yondashuv ta’lim mazmunini bir vaqtning o‘zida bir nechta kommunikativ kanallar – vizual, audial, kinestetik va raqamli vositalar orqali yetkazishni nazarda tutadi. Bu esa o‘quvchilarning axborotni qabul qilish va qayta

ishlash imkoniyatlarini kengaytiradi, o‘quv motivatsiyasini oshiradi hamda bilimlarni mustahkam o‘zlashtirishga xizmat qiladi.

Inklyuziv ta’lim sharoitida multimodal yondashuvlarning qo‘llanilishi ayniqsa muhimdir. Chunki alohida ta’lim ehtiyojlariga ega bo‘lgan bolalar turli sensor kanallar orqali axborotni turlicha qabul qiladilar. Shu sababli maxsus pedagoglarni multimodal yondashuvlardan samarali foydalanishga tayyorlash va ularda tegishli kompetensiyalarni shakllantirish dolzarb ilmiy muammo hisoblanadi. Maqolaning maqsadi maxsus pedagoglarda inklyuziv ta’lim jarayonida multimodal yondashuvlardan foydalanish kompetensiyalarini shakllantirishning nazariy va amaliy asoslarini yoritishdan iborat.

Adabiyotlar tahlili va metodologiya

Multimodallik nazariyasi G.Kress, T.Van Leeuwen, R.Mayer kabi olimlarning tadqiqotlarida keng yoritilgan. Ularning ilmiy qarashlariga ko‘ra, bilimlarni turli modal vositalar orqali uzatish o‘quvchilarning o‘quv faoliyatidagi faolligini oshiradi va o‘rganish samaradorligini kuchaytiradi.

H.Gardnerning ko‘p qirrali intellekt nazariyasi har bir insonning bilimlarni o‘zlashtirish usuli individual ekanligini asoslaydi. Mazkur nazariya multimodal yondashuvning metodologik asoslaridan biri hisoblanadi. Inklyuziv ta’lim sohasida esa M.Ainscow, T.Booth, L.Florian kabi olimlar barcha o‘quvchilar uchun moslashuvchan ta’lim muhitini yaratish zarurligini ta’kidlaydilar.

O‘zbekistonda maxsus va inklyuziv pedagogika sohasida M.Y.Ayupova, L.R.Muminova, P.M.Po‘latova, G‘.B.Shoumarov va boshqa olimlar tomonidan qator ilmiy tadqiqotlar amalga oshirilgan. Biroq maxsus pedagoglarning multimodal kompetensiyalarini shakllantirish masalasi hali yetarli darajada o‘rganilmagan.

Tadqiqot metodologiyasining asosini tizimli yondashuv, kompetensiyaviy yondashuv, faoliyatga yo‘naltirilgan yondashuv hamda shaxsga yo‘naltirilgan ta’lim

tamoyillari tashkil etdi. Ushbu yondashuvlar maxsus pedagoglarni zamonaviy ta’lim texnologiyalaridan foydalanishga tayyorlash jarayonini kompleks tahlil qilish imkonini berdi.

Tadqiqot metodlari

Tadqiqotda quyidagi metodlardan foydalanildi: ilmiy-pedagogik va metodik adabiyotlarni o‘rganish; qiyosiy tahlil; pedagogik kuzatuv; anketa va suhbat metodlari; ekspert baholash; tajriba-sinov ishlari; statistik ma’lumotlarni qayta ishlash.

Tajriba-sinov ishlari davomida maxsus pedagoglarning multimodal yondashuvlar bo‘yicha bilim va amaliy ko‘nikmalari o‘rganildi. Shuningdek, ularga mo‘ljallangan treninglar, seminarlar va amaliy mashg‘ulotlarning samaradorligi baholandi.

Tahlil va natijalar

Tadqiqot natijalari maxsus pedagoglarning multimodal yondashuvlardan foydalanish bo‘yicha tayyorgarlik darajasi turlicha ekanligini ko‘rsatdi. Dastlabki diagnostika natijalariga ko‘ra, pedagoglarning katta qismi vizual vositalardan foydalanishga nisbatan yuqori tayyorgarlikka ega bo‘lsa-da, audial, kinestetik va raqamli texnologiyalarni integratsiyalash bo‘yicha yetarli ko‘nikmaga ega emasligi aniqlandi.

Tajriba-sinov jarayonida pedagoglar uchun multimodal kompetensiyalarni rivojlantirishga qaratilgan maxsus dastur ishlab chiqildi. Dastur quyidagi yo‘nalishlarni qamrab oldi: vizual taqdimotlar va infografikalardan foydalanish; audio va video materiallarni ta’lim jarayoniga integratsiyalash; kinestetik faoliyat va amaliy topshiriqlarni tashkil etish; raqamli ta’lim platformalaridan foydalanish; inklyuziv sinf uchun moslashtirilgan o‘quv resurslarini yaratish.

Tajriba yakunida pedagoglarning multimodal kompetensiyalari sezilarli darajada rivojlangani kuzatildi. Ular darslarni tashkil etishda bir nechta modal vositalardan

kompleks foydalanishga erishdilar. Natijada o‘quvchilarning darsdagi faolligi, o‘quv motivatsiyasi va bilimlarni o‘zlashtirish ko‘rsatkichlari oshdi.

Muhokama

Tadqiqot natijalari multimodal yondashuvlarning inklyuziv ta’lim samaradorligini oshirishdagi ahamiyatini tasdiqladi. Pedagoglar tomonidan turli modal vositalarning uyg‘un qo‘llanilishi o‘quvchilarning individual ehtiyojlarini hisobga olish imkonini yaratadi.

Alohida ta’lim ehtiyojlariga ega bo‘lgan o‘quvchilar uchun axborotni faqat bitta kanal orqali emas, balki bir necha sensor tizimlar orqali yetkazish bilimlarni o‘zlashtirish jarayonini yengillashtiradi. Shu bilan birga, multimodal yondashuv pedagoglardan yuqori darajadagi metodik tayyorgarlik va ijodkorlikni talab etadi.

Tadqiqot shuni ko‘rsatdiki, multimodal kompetensiyalarni rivojlantirish bo‘yicha maxsus treninglar va amaliy seminarlar pedagoglarning kasbiy rivojlanishiga ijobiy ta’sir ko‘rsatadi. Bu esa inklyuziv ta’lim sifatini oshirishning muhim omillaridan biri hisoblanadi.

Xulosa

Tadqiqot natijalari asosida quyidagi xulosalarga kelindi: multimodal yondashuvlar inklyuziv ta’lim samaradorligini oshirishning muhim pedagogik vositasidir; maxsus pedagoglarning multimodal kompetensiyalarini shakllantirish kasbiy tayyorgarlikning ustuvor yo‘nalishlaridan biri hisoblanadi; vizual, audial, kinestetik va raqamli vositalarning integratsiyasi ta’lim jarayonini individuallashtirish imkonini beradi; multimodal yondashuvlardan foydalanish o‘quvchilarning bilish faolligi, kommunikativ kompetensiyasi va ijtimoiy integratsiyasini rivojlantiradi; pedagoglarni tayyorlash dasturlariga multimodal texnologiyalar bo‘yicha maxsus modullarni kiritish maqsadga muvofiqdir.

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ANALYTICAL STUDY OF ONE-WAY FUNCTIONS AND THEIR IMPACT ON SECURE DIGITAL COMMUNICATION

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Abstract

This thesis investigates the mathematical foundations, computational properties, and applied significance of one-way functions within the domains of modern cryptography and information security. Defined by their asymmetric computational behavior, one-way functions permit efficient forward computation while rendering inverse computation computationally intractable in the absence of auxiliary secret knowledge. The security of numerous cryptographic constructs—including public-key encryption algorithms, digital signature schemes, authentication protocols, and cryptographic hash functions—is intrinsically dependent on the complexity assumptions underlying these functions. A comprehensive evaluation of prominent one-way paradigms, including modular exponentiation, integer factorization, discrete logarithm problems, and hash-based constructions, is presented. Furthermore, the study assesses the relevance of one-way functions in post-quantum cryptographic frameworks and the development of resilient secure communication systems. The results demonstrate that one-way functions remain indispensable theoretical and practical components for maintaining confidentiality, integrity, authentication, and trust in modern digital infrastructures.

Keywords

one-way function, cryptography, hash function, RSA, discrete logarithm, modular arithmetic, public-key cryptography, cybersecurity, post-quantum cryptography, computational complexity.

The continuous growth of digital technologies has intensified the need for effective information security mechanisms across communication networks, cloud services, e-commerce environments, financial systems, and IoT infrastructures. Cryptography plays a central role in protecting sensitive information and ensuring secure digital communication [1].

One-way functions constitute one of the most fundamental mathematical concepts underlying modern cryptography. These functions are characterized by efficient forward computation combined with computationally infeasible inversion under current computational models [2]. Such asymmetry forms the basis of numerous cryptographic constructions, including public-key encryption, digital signatures, and authentication protocols.

The security of major cryptographic systems, including RSA and Diffie–Hellman, depends on mathematical problems exhibiting one-way properties, such as integer factorization and discrete logarithms [3,4]. However, the emergence of quantum computing and algorithms such as Shor's algorithm poses serious challenges to these traditional assumptions [5]. As a result, the development of quantum-resistant one-way functions has become an important research direction within post-quantum cryptography [6]. Therefore, this article focuses on the theoretical principles, mathematical characteristics, and practical applications of one-way functions in modern cryptographic systems.

In computational complexity theory, a one-way function can be formally defined as a function:

$$f: X \to Y$$

that satisfies the following conditions:

The function $f(x)$ can be computed efficiently for every input $x \in X$.

Given the output $y = f(x)$, it is computationally infeasible to determine the

original input x.

The term "computationally infeasible" generally means that no known polynomial-time algorithm exists for solving the inverse problem efficiently [7]. In practical cryptography, the security of a system often depends not on the impossibility of inversion, but on the enormous computational resources required to perform inversion attempts.

One-way functions differ from ordinary mathematical functions because of their asymmetrical computational complexity. Multiplication of large prime numbers, for example, is computationally simple, while factoring the resulting composite number into its prime components is significantly more difficult. This asymmetry provides the security foundation for many cryptographic mechanisms.

Computational Complexity and Security

The security strength of one-way functions is closely related to computational complexity theory. Complexity classes such as P, NP, and NP-complete problems play an important role in evaluating cryptographic security [8]. If a mathematical problem belongs to a class that lacks efficient solving algorithms, it may serve as a suitable basis for constructing a one-way function.

For example, the integer factorization problem involves finding prime factors of a composite number:

$$n = pq$$

where p and q are large prime numbers. Computing n from p and q is easy, but recovering p and q from n becomes extremely difficult when the primes are sufficiently large.

Types of One-Way Functions

One-way functions can be classified into several categories depending on their structural properties and cryptographic applications.

Integer Factorization-Based Functions

Integer factorization-based functions form the basis of the RSA cryptosystem. In RSA, encryption and decryption operations rely on modular exponentiation:

$$c \equiv m^e (\mathrm{mod} n)$$

where m is the plaintext message, e is the public exponent, and $n = pq$ is the RSA modulus. The difficulty of recovering the private key depends on the infeasibility of factoring n into its prime components [9].

Discrete Logarithm-Based Functions

Another important category involves the discrete logarithm problem. Given a generator g, a modulus p, and a value:

$$y \equiv g^x (\mathrm{mod} p)$$

it is computationally difficult to determine the exponent x. This property is utilized in the Diffie-Hellman key exchange protocol and the ElGamal cryptosystem [10].

Hash-Based One-Way Functions

Cryptographic hash functions are another widely used class of one-way functions. A hash function transforms input data of arbitrary size into a fixed-length output:

$$h = H(m)$$

where H represents the hash algorithm and h is the resulting hash value. Hash functions possess several important security properties:

Preimage resistance;

Second preimage resistance;

Collision resistance.

Applications in Modern Cryptography

One-way functions represent indispensable building blocks of modern cryptographic architectures, with practical applications spanning multiple domains of information security.

Public-Key Cryptography

Public-key cryptographic systems are fundamentally based on one-way mathematical transformations. Within asymmetric encryption frameworks, public keys may be openly distributed, whereas private keys remain confidential. The computational infeasibility of deriving a private key from its corresponding public key constitutes the principal security guarantee of such systems.

Digital Signatures

Digital signature schemes employ one-way functions to ensure authentication, integrity, and non-repudiation. In a conventional digital signature process, a message digest is first produced using a cryptographic hash function and subsequently encrypted with the signer's private key.

Password Security

Modern authentication mechanisms typically store cryptographic password hashes rather than plaintext credentials. During authentication, the system computes the hash of the submitted password and compares it with the stored value. Even in cases of database compromise, recovering the original passwords remains computationally challenging.

To strengthen security, supplementary techniques such as salting, key stretching, and memory-hard computations are commonly employed. Algorithms including bcrypt, PBKDF2, and Argon2 offer improved resistance against brute-force and dictionary-based attacks [12].

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IMMUNOMODULATORY AND ANTI-INFLAMMATORY EFFECTS OF SGLT2 INHIBITORS IN CARDIOVASCULAR PATHOLOGY

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Relevance. Cardiovascular diseases (CVDs) have long remained the leading cause of disability and mortality worldwide. The modern concept of cardiology views chronic low-grade systemic inflammation as a fundamental pathogenic mechanism that triggers and accelerates atherosclerosis, myocardial remodeling, and fibrosis [3, 4]. Consequently, the search for drugs possessing synergistic metabolic and anti-inflammatory properties represents a strategic imperative. The discovery of pronounced extra-pancreatic effects of sodium-glucose cotransporter 2 (SGLT2) inhibitors has radically transformed therapeutic approaches to heart failure and ischemic heart disease [5]. This class of drugs (dapagliflozin, empagliflozin, etc.) not only optimizes hemodynamics and energy metabolism but also exhibits powerful immunomodulatory potential. Specifically, SGLT2 inhibitors are capable of regulating the phenotypic polarization of macrophages, suppressing the activity of the pro-inflammatory M1 pool and activating the protective anti-inflammatory M2 pool. This results in a reduction in serum levels of key cytokines (interleukins 1\(\beta \) and 6, tumor necrosis factor-alpha) and mitigates inflammatory infiltration in cardiac and vascular tissues. A profound study and systematization of the molecular and cellular mechanisms underlying this anti-inflammatory action are essential for expanding the indications for SGLT2 inhibitors and developing targeted programs for personalized cardioprotection.

Keywords: SGLT2 inhibitors, immunomodulation, anti-inflammatory effect, macrophages, cytokines, cardiovascular pathology, myocardial remodeling, cardioprotection.

ИММУНОМОДУЛИРУЮЩИЕ И ПРОТИВОВОСПАЛИТЕЛЬНЫЕ ЭФФЕКТЫ ИНГИБИТОРОВ SGLT2 ПРИ СЕРДЕЧНО-СОСУДИСТОЙ ПАТОЛОГИИ

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Актуальность. Сердечно-сосудистые заболевания (ССЗ) на протяжении многих лет остаются ведущей причиной инвалидизации и смертности во всем мире. Современная концепция кардиологии рассматривает хроническое вялотекущее системное воспаление как фундаментальный патогенетический механизм, запускающий и ускоряющий процессы атеросклероза, ремоделирования миокарда и фиброза [1, 2]. В связи с этим поиск препаратов, обладающих синергетическим метаболическим и противовоспалительным действием, представляет собой стратегическую задачу. Открытие выраженных внепанкреатических эффектов у ингибиторов натрий-глюкозного котранспортера 2-го типа (SGLT2) кардинально изменило подходы к терапии сердечной недостаточности и ишемической болезни сердца [5]. Данный класс препаратов (дапаглифлозин, эмпаглифлозин и др.) не только оптимизирует гемодинамику и энергетический обмен, но и демонстрирует мощный иммуномодулирующий потенциал. В частности, ингибиторы SGLT2 способны регулировать фенотипическую поляризацию макрофагов, подавляя активность провоспалительного пула M1 и активируя защитный противовоспалительный пул M2. Это приводит к снижению сывороточного уровня ключевых цитокинов (интерлейкинов 1\(\beta \) и 6, фактора некроза опухоли альфа) и ослаблению воспалительной инфильтрации в тканях сердца и сосудов. Глубокое изучение и систематизация молекулярно-клеточных механизмов этого противовоспалительного действия необходимы для расширения показаний к применению ингибиторов SGLT2 и создания таргетных программ персонализированной кардиопротекции.

Ключевые слова: ингибиторы SGLT2, иммуномодуляция, противовоспалительный эффект, макрофаги, цитокины, сердечно-сосудистая патология, ремоделирование миокарда, кардиопротекция.

Research Objective To study the immunomodulatory and anti-inflammatory effects of SGLT2 inhibitors (using dapagliflozin as an example) in patients with chronic heart failure (CHF) and to evaluate their impact on markers of systemic inflammation and myocardial remodeling processes.

Materials and Methods: The prospective study enrolled 86 patients with a verified diagnosis of CHF NYHA functional class (FC) II–III (mean age 64.2 ± 5.8 years). All patients exhibited signs of systemic inflammation, confirmed by a baseline elevation of high-sensitivity C-reactive protein (hs-CRP > 3 mg/L).

The patients were divided into two groups: 44 patients in the study group received standard CHF therapy combined with an SGLT2 inhibitor (dapagliflozin 10 mg/day), while 42 patients in the control group received standard therapy alone (ACE inhibitors/ARNI, beta-blockers, mineralocorticoid receptor antagonists). The follow-up period was 6 months.

Serum levels of pro-inflammatory cytokines, including hs-CRP, interleukin-1\(\beta \) (IL-1\(\beta \)), interleukin-6 (IL-6), and tumor necrosis factor-alpha (TNF-\(\alpha \)), were evaluated in dynamics (at baseline and after 6 months) using an enzyme-linked immunosorbent assay (ELISA). Transthoracic echocardiography was also performed to monitor the left ventricular mass index (LVMI) and atrial volumes. Statistical analysis was performed using SPSS Statistics software with the Wilcoxon and Mann-Whitney U tests.

Results and Conclusions: At baseline, the groups were comparable in terms of age, sex, and the severity of the inflammatory profile. After 6 months of treatment, the study group receiving dapagliflozin demonstrated a statistically significant reduction in the concentration of key pro-inflammatory markers: hs-CRP levels decreased by 34.2% (\(p < 0.05\)), IL-6 by 28.6% (\(p < 0.05\)), and TNF-\(\alpha \) by 22.4% (\(p < 0.05\)) compared to baseline values. In the control group, the dynamics of these cytokines were

clinically and statistically insignificant. The reduction in the intensity of the inflammatory process in the study group was associated with an improvement in echocardiographic parameters: a reduction in LVMI by 8.6% (\(p < 0.05\)) and a significant decrease in CHF FC were observed in 65.9% of patients. No significant changes in LVMI were noted in the control group.

Conclusions: SGLT2 inhibitors (dapagliflozin) possess a pronounced extra-pancreatic anti-inflammatory and immunomodulatory action, significantly reducing the levels of systemic cytokines (hs-CRP, IL-6, TNF-\(\alpha \)) in patients with CHF. The anti-inflammatory potential of this drug class is closely linked to the processes of reverse myocardial remodeling, which is clinically manifested by a reduction in left ventricular mass and an improvement in the functional status of patients, justifying their early initiation in cardiovascular pathology.

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Women in Islamic Law: Rights, Responsibilities, and Contemporary Challenges of Implementation

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Abstract. The history of women in Islam is studied through Quranic verses, hadiths, and scholarly research on family relations in order to understand the legal status of women. This article examines the status of women in pre-Islamic Arabia and in Islam, as well as their position after the revelation of the Quran, including property rights, mahr, the right to separate residence of spouses, and the interaction between cultural traditions and religious values. The study also discusses contemporary practices that contradict Islamic law, as well as the imposition of duties on women that are not prescribed by Islam. The article concludes that the Islamic legal system was among the first to provide women with comprehensive social and property protection.

Keywords: Islam, women, mahr (marital gift), Sharia (Islamic law), family, women's rights, Jahiliyyah (pre-Islamic period), property rights, family relations.

Женщина в исламском праве: права, обязанности и современные проблемы реализации

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Аннотация. История женщин в исламе изучается как в коранических аятах, хадисах, так и в научных исследованиях семейных отношений, чтобы понять женщин как юридических лиц. Рассматривается статус женщин в доисламской Аравии и статус женщин в исламе, а также их положение после откровения Корана, включая имущественные права, махр, раздельное проживание супругов, а также

вопрос, когда культурные традиции и религиозные ценности сталкиваются. Обсуждаются также современные практики, противоречащие исламскому праву, а также требование к женщинам выполнять обязанности, не предусмотренные исламом. Делается вывод, что правовая система в исламе впервые предоставила женщинам хорошую социальную и имущественную защиту.

Ключевые слова: ислам, женщина, махр (свадебный подарок), шариат (исламское право), семья, права женщин, джахилия (доисламский период), имущественные права, семейные отношения.

Введение. Сегодня вопрос объективного изучения статуса женщин в исламе сохраняет свою актуальность. Восприятие ислама в мире часто не основано на надежных источниках, а под влиянием культурных традиций некоторых обществ и неправильного толкования религиозных текстов. В результате недопонимания о правах и обязанностях женщин возникает из-за дезинформации религиозных норм в некоторых семьях, где от женщин ожидается выполнение не только семейных, но и общественных обязанностей, а также выполнение домашних обязанностей для согласия семьи. Эти представления противоречат нормам исламского права. С приходом ислама женщинам были гарантированы права и свободы в рамках правовой системы для защиты их достоинства; имущество, наследство, образование, участие в общественной жизни и махр (свадебный подарок) от мужа. Женщины считались автономными в общественных и семейных отношениях с начала ислама. Таким образом, это исследование является вопросом различения религиозных предписаний и культурных традиций, которые часто считаются исламскими законами. Особое внимание уделяется анализу прав и свобод в исламе, включая ее право на имущество, свободу собственности и независимость женщин (например, ее право на отдельное жилье, право иметь собственное имущество, право продавать свои активы, право

распоряжаться своими деньгами и право жить, не совершая действий, которые могли бы быть восприняты как нарушение ее человеческого достоинства).

Для понимания значимости преобразований, осуществленных исламом по отношению женщин, необходимо обратиться к их положению во времена джахилии – в доисламский период истории Аравии, женщины не были полностью развиты в арабском обществе. Статус женщин не был полностью урегулирован в правовом статусе арабского общества, женщины все еще считались собственностью мужчин и чаще всего так и обращались. В арабском обществе женщины считались собственностью мужчин, и их статус определялся волей отца, мужа или племени. Женщину могли продать или выдать замуж за другого мужчину без ее согласия, и она не могла наследовать свое право по рождению. В доисламском обществе рождение девочки было позором и причиной горя, а в некоторых племенах новорожденных девочек закапывали заживо [1]. Эти практики были связаны с экономическими трудностями и представлениями о “чести” клана. Священный Коран явно отверг их: “Когда спросят закопанную заживо девочку: “За какой грех она была убита?””. Этот аят говорит нам не только о настоящей ситуации, но и дает моральное мнение. Доисламский период также был временем, когда существовали браки, нарушающие права женщин. Принудительные браки, обмен женами, временные браки и браки без согласия женщины были среди них. Женщины не имели возможности иметь автономию в своей жизни. Ислам изменил все это. Женщины получили право на согласие на брак, получение махра, имущественную независимость и уважительное отношение.

Статус женщин изменился после откровения аятов Корана. Ислам предоставил женщинам равенство во всем с мужчинами. Коран говорит: “О люди! Бойтесь вашего Господа, который создал вас из одной души и создал из нее ее

супругу, и распространил из них обоих много мужчин и женщин” [3]. Это подчеркивает, что женщины и мужчины имеют одно происхождение и человеческую природу. Ислам отверг представление о том, что женщины являются существами второго сорта. На самом деле, в суре “Ниса” (Женщины) обсуждаются семейные отношения, наследство, имущественные права и здоровье и благополучие женщин. Было ниспослано более 100 аятов о положении женщин [4]. Женщинам было разрешено получать образование, владеть имуществом, получать наследство, заниматься предпринимательской деятельностью и участвовать в общественной жизни. Исламское право закрепило за женщиной право распоряжаться своим имуществом, независимо от воли или согласия мужа [5]. История Хадиджи бинт Хувайлид является примером того, как женщины экономически независимы в исламе. Она была успешной предпринимательницей и сама управляла своим торговым деятельностью. Тем, что она занималась, показывает, что ислам не запрещает женщинам работать, владеть бизнесом или владеть собственным имуществом и самостоятельно распоряжаться своими финансовыми средствами.

Одним из самых спорных вопросов современности является распределение домашних обязанностей. Во многих обществах от женщин требуется выполнять все в домашнем хозяйстве, независимо от их состояния, работы и социального положения. Но эти вопросы требуют большего анализа. Ислам рассматривает семейную жизнь как взаимную ответственность, а не одностороннее обслуживание женщин. Если в доме родителей женщины у нее были помощницы или слуги, то согласно положениям исламского права муж обязан предоставить ей помощницу, слугу либо обеспечить для нее комфортные условия после брака [6]. В исламской традиции женщина не обязана выполнять чрезмерное количество работы, если у нее не было социального статуса, чтобы выйти замуж за мужчину

из обеспеченной семьи. Если жена выросла в доме, где были помощники, то муж должен учитывать ее обычный уровень жизни. Если материальное положение мужа позволяет, то он обязан нанять домработницу или няню для детей, обеспечив женщине привычный уровень бытового обслуживания. Это часть принципа уважения к человеческому достоинству женщины и поддержания ее физического и психологического здоровья. Семья должна строиться на сотрудничестве, милосердии и взаимопонимании, а не на возложении всех обязанностей исключительно на женщину.

Сегодня проблемы реализации прав женщин остаются актуальными. Большинство из них связано не с исламскими предписаниями, а с культурными традициями и социальным давлением. Женщины ограничены в образовании, вынуждены вступать в брак с принуждением своих родителей, их имущественные права нарушаются, и они сталкиваются с психологическим давлением в некоторых обществах. Глобализация и изменение социальных ролей создают напряжение между традиционными представлениями и современными идеями о правах женщин [7]. Однако исламская правовая система изначально стремилась найти баланс между правами и обязанностями супругов. Женщины заслуживают уважения, безопасности, материальной поддержки и достоинства. Современный мир должен глубоко изучить ситуацию, если мы хотим отделить религиозные нормы от культурных стереотипов. Из исследований можно сделать вывод, что правовая система в исламе изначально предоставила женщинам высокий уровень социальной, имущественной и моральной защиты. Женщины были полноправными субъектами социальных и семейных отношений в исламе, в отличие от доисламского общества, где женщины считались собственностью мужчин. Женщинам был предоставлен доступ к образованию, наследованию, владению имуществом, махру (приданому) и участию в общественной жизни.

Исламская система основана на финансовой независимости женщин как их основном средстве. Их имущество принадлежит только им, и они не обязаны содержать своего мужа или его родственников. Право женщины на отдельное жилье также является важным элементом ее социальной защиты. Жена не будет вынуждена жить с родителями мужа, если ее беспокоят условия проживания. Более того, ислам не требует от женщин выполнения унизительных культурных действий, которые даже не связаны с исламом. Таким образом, многие ограничения, с которыми женщины сталкиваются сегодня, не связаны с исламом как религией, а с культурными убеждениями и ошибочными представлениями. Объективное исследование этих вопросов и проблем показало бы, что ислам не унижает женщин, а сохраняет их достоинство, имущество и безопасность, а также полное участие в обществе.

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MODERNIST ELEMENTS IN UZBEK SHORT STORIES

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Annotation: This thesis analyzes the artistic interpretation of modernism in contemporary Uzbek short stories, its specific features, and its role in national literature. It demonstrates how writers strive to express a person's inner spiritual experiences through the modernist approach, using stream of consciousness, symbolism, and individual thinking. It also substantiates that in contemporary short stories, traditional realism is being replaced by new artistic explorations.

Keywords: modernism, short story writing, stream of consciousness, psychological depiction, artistic thinking, symbolism, individualism, contemporary literature.

O'ZBEK HIKOYALARIDA MODERNIZM UNSURLARI

Meyliyeva Gulhayo Quvat qizi

Osiyo texnologiyalar universiteti O'zbek tili va adabiyoti yo'nalishi, 1-kurs magistranti

Annotatsiya: Ushbu tezisda zamonaviy o'zbek hikoyachiligida modernizmning badiiy talqini, uning o'ziga xos xususiyatlari hamda milliy adabiyotdagi o'rni tahlil etiladi. Modernistik yodashuv orqali yozuvchilar insonning ichki ruhiy kechinmalarini, ong oqimi, ramziylik va individual tafakkur orqali ifodalashga intilganliklari ko'rsatib beriladi. Shuningdek, zamonaviy hikoyalarda an'anaviy realizm o'rnini yangi badiiy izlanishlar egallayotgani asoslab beriladi.

Kalit so'zlar: modernizm, hikoyachilik, ong oqimi, ruhiy tasvir, badiiy tafakkur, ramziylik, individualizm, zamonaviy adabiyot.

Аннотация: В данной статье анализируется художественная интерпретация модернизма в современной узбекской новеллистике, его своеобразные особенности и место в национальной литературе. Показано, что писатели

посредством модернистского подхода стремятся выразить внутренние духовные переживания человека через поток сознания, символизм и индивидуальное мышление. Также обосновывается, что в современных рассказах традиционный реализм уступает место новым художественным поискам.

Ключевые слова: модернизм, новеллистика, поток сознания, психологическое изображение, художественное мышление, символизм, индивидуализм, современная литература.

Bugun o’zbek adabiyoti yangicha shaklda yashab, yangicha ijod qilmoqda. Modernizm o’zbek hikoyachiligiga yangi tasvir usullarini kiritdi. Ayrim yozuvchilar asarlarida realizm bilan bir vaqtda ramziy va falsafiy qatlamlarni uyg’unlashtirgan modernistik unsurlar bilan boyitilgan asarlarga murojaat qilishmoqda. “… Demak, istiqlol davri yangi o’zbek asarlarining asosiylari, albatta, an’anadan uzilgan g’uddalar emas, aksincha, o’sha silsilaning davomi o’laroq dunyoga keldi, kelmoqda. Shu bilan birga, erkin badiiy tafakkur mahsuli sifatida o’zini (olam ichra olam, ya’ni bir butun tizim o’laroq) namoyon qilayotgani kishini behad quvontiradi. Bugun yurtimiz ijodkori o’z nuqtayi nazarini qadim Sharq adabiyotida bo’lgani kabi olami sug’ro – mukarram Insonga, uning qalbiga qaratgan. Hamda botindagi murakkab jarayonlarni bayonchilik yo’li bilangina emas (chunki bunday usul bor, bo’ladi va bu tabiiydir), ayni paytda, umuminsoniy va umumzamoniy mezonlarga suyangan holda Majoz vositasida ham qog’ozga tushirmoqdalar, san’atga aylantirmoqdalar…”[1]. Avvalo, tahlillarga yuzlanishdan oldin modernizm istilohi ustidagi bahslarga yuzlansak. Bu istiloh biz uchun, Sharq uchun begona tushuncha sifatida qaraydiganlar ham, Cho’lpon ta’biri bilan aytganda: “ko’ngil yangilik qidiradir…” deganidek yangilik istovchilar uchun kerakli deb qaraydiganlar ham bo’ldi. “Modernizm nima?” degan savolga dunyo va o’zbek olimlari ko’pdan beri javob berib kelishadi, aytish joizki, haligacha bu masala ustida

[1] Ulug’bek Hamdam, Abdug’opur Qosimov. Jahon adabiyoti. – Toshkent: Akademnashr, 2024. – B.241.

bahslar yakunlangani yo'q. Zero modernizm o'zbek olimi, professor Ozod Sharafiddinov ta'kidlab aytganidek, "modernizm jo'n hodisa" emas. O'zbek adabiyotshunosligida, ayniqsa, istiqlol yillarida modernizm atrofida qizg'in bahslar bo'ldi. Bahslarda modernizmni o'zbek mentalitetiga butunlay yot mafkura yoki, aksincha, modernizm insoniyat badiiy-tafakkur tadrijining bir bosqichi, uni o'qib o'rganishning hech bir zarari yo'q degan turli qarashlar aytildi…"[2]

Yigirmanchi asrning oxirgi choragiga kelib, milliy nasrda zamonaviy G'arb san'atida keng tarqalgan modernizmga xos bo'lgan badiiy ijod namunalari yuzaga kela boshladi. Shuningdek, yozuvchilarimiz badiiy shakl va uslub borasida izlanishlar olib borib, yangi ijod namunalar yaratishmoqda. Dramaturgiya, nasr, va nazmda bu harakatlar birdek ilgarilab borayotganligini dramatug Sharof Boshbekov, nisbatan yosh shoir va yozuvchilar Nazar Eshonqul, Xayrullo, Bahrom Ro'zimuhammad, Go'zal Begim, Isajon Sulton, Bahor va boshqalar ijodlarida ko'rish mumkin.

Kichik detallar orqali ularni ramz darajasiga ko'tara olgan va bu bilan hikoyaga katta kuch yuklay olgan yozuvchi Bahor hikoyalari o'zining yangicha tabiati bilan o'quvchi etiborini tortadi. "Shamol hikmati" hikoyasida ramz asar ichiga singib ketgan deyish mumkin. Chunki hikoyadagi so'z o'yini va shamol vositasida anglatmoqchi bo'lingan ma'no chuqur mohiyatni yuzaga chiqarib bermoqda. Hikoyada omonatgina ilingan "Bozor" so'zining har shamol esgandagi boshda turgan harfning uzilib yerga tushishida ramziy ma'no chizig'i yuzaga keladi. "Ozor", "zor", "or", "r" so'z o'yinlarining hosil bo'lishi ,avvalo, bozorning ozorsiz bo'lmasligi, ortiqcha ehtiyojlarga erk berilsa ,ruhning ozor chekishi; hikoyani rivojlantirib turgan mo'ysafid obrazi bozordan "qadr" izlab, uni topolmasdan "zor" bo'lishi, mo'ysafidning izlaganini topolmasdan xo'rlanganidan kelib chiqadigan tuyg'u "or" ning nomidir bu. Shu vaqtda shamol kelib yana bir harfni uchirib ketadi va hech qanday ma'no anglatmaydigan "r" harfining o'zi

[2] Ulug'bek Hamdam, Abdug'opur Qosimov. Jahon adabiyoti. – Toshkent: Akademnashr, 2024. – B.227.

qoladi. Endi insonning insoniyligi ojizlashib, hayvoniyligi kuchaygani, hayvoniy irillashga o'xshash tovush chiqarishiga ishora ko'rsatilyapti. Yerga uchib tushgan harflarning o'zgacha ko'rinishda tizilib qolishi ham yangi mazmunni chiqarib beradi. Boshqa peshtoqdan uchib tushgan harf (parvoz qilib borayotgan qushning qanotlarini eslatuvchi boshqa harf- m)ning qo'shilib "Mozor" bo'lib tizilib qolishida esa, bozorga tirikchilikning vositasi sifatida emas, tiriklikning oliy maqsadiga aylantirish bir kun insonni mozorga yetaklashiga ishora qilib kelinmoqda. "Tongda shamol tindi. Tuproqda abgor yotgan harflar g'alati bir tasodif tufayli avval qanday yozilgan bo'lsa, darvoza yoniga o'shanday terilib qolgan, ammo kechagi bo'ron ko'chadagi boshqa shu kabi yozuvlarni ham uchirib tashlagani bois bozor ostonasiga so'zning bosh harfigina parvoz qilib borayotgan qushning qanotlarini eslatuvchi boshqa bir harf bilan almashib qolgan edi. Hammayoq alg'ov- dalg'ov, faqat mag'ribga tomon bir tomonlama ketgan qadam izlari orasida yangi paydo bo'lgan yolg'izoyoq izgina shundayligicha saqlangan, dovul unga hech bir putur yetkazmagan edi. Bozor yana qizidi…Ammo odamlar yonginalarida SHAMOL qoldirib ketgan HIKMATni sezmadilar…"[3]

O'zbek adabiyotida bundan oldin ham zamondosh kishilarning fojiyaviy qismatidan hikoya qiluvchi asarlar yaratilgan. Ularda ko'proq fojealarning kelib chiqish ildizlari, ichki mohiyati o'zgacha shaklda bayon qilingan. Ko'proq realizmga asoslangan voqealar bilan boyitilgan. Bu kabi asarlarda qahramonlar hayot yo'lida adashgan, adolat, ezgulik yo'lida jiddiy qarshiliklarga duch kelgan insonlar sifatida akslantirilgan. Modernizm adabiyotida esa inson yuqoridagidek holatlar bilan bog'liqlikda gavdalanmaydi.

"…Nazar Eshonqulning "Istilo", "Tobut" hikoyalarida asli be'mani g'oyalar – adolatsizlik" shafqatsizlik, zo'ravonlik asosiga qurilgan, inson hayoti va qalbini zabt etib undagi tabiiy, boqiy qadriyatlarni mahv etishga qaratilgan, oqibat- natijada esa halokatga mahkum totalitar tuzum va yakkahokim mafkuraning daxshatli majoziy manzaralari chiziladi. …Nazar Eshonqulning bu tur hikoyalarida qahramonlarning nomi yo'q- ular faqat "u" yoki hayotdagi amali, kasb-hunari nomi bilan "Kotib", "Qorovul",

[3] Sharq yulduzi jurnali, 2014-yil, 5-son.

Me’mor” deb yuritiladi. Insonning ichki va tashqi qiyofasini chizishda anchagina tajriba orttirgan muallif bu xil personajlar tasviriga kelganda bu borada bir qarashda hafsalasizlik qilganday taassurot qoldiradi. Aslida esa shu xil “hafsalasizlikdan” muayyan bir maqsad bor: hikoya personajlari bema’ni, shafqatsiz hayot tazyiqi ostida shu hayotdan begonalashgan , shaxsini, insoniy qiyofasini yo’qotgan yoki yo’qotayozgan kimsalardir…”[4]

Yuqoridagilarga xulosa qilib aytish mumkinki, modernizm o’zbek adabiyoti uchun, qolaversa, hikoyachiligi uchun begona emas. O’zbek yozuvchilari badiiy tafakkur tarziga, ijodiga, o’qiguvchi talabiga o’z ta’sirini ko’rsatib kelayotgan adabiy oqimlardan biridir. Zamonaviy o’zbek hukoyachiligida modernizm badiiy tafakkurning yangilanishiga xizmat qilmoqda. Shuningdek, asarlarimizda inson ruhiyati, ichki monolog, psixologizm, ramziy obrazlar va falsafiy mushohada orqali modernistik tamoyillar yorqin namoyon bo’ladi. Yuqoridagi adiblar ijodi modernizmni milliy ruh va mentalitet bilan uyg’unlashtirganligi bilan ahamiyatli sanaladi. Natijada zamonaviy o’zbek hikoyachiligida inson qalbining murakkab olami, ma’naviy izlanishlari va ruhiy kechinmalari yangi badiiy shakllarda ifoda etilmoqda.

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THE RELEVANCE OF USING DIGITAL TECHNOLOGIES AND ARTIFICIAL INTELLIGENCE IN TEACHING PHYSICS

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Abstract

This article analyzes the significance of modern teaching methodologies based on digital technologies and artificial intelligence (AI) in physics education. The study highlights opportunities to improve the effectiveness of the educational process through the use of virtual laboratories, interactive simulations, and AI-powered platforms in teaching physics. In addition, the article presents scientific and practical recommendations aimed at developing students’ digital competencies, fostering independent learning activities, and enhancing the deep understanding of physics concepts. The integration of innovative technologies into physics education is shown to be an effective tool for increasing learner engagement, improving conceptual comprehension, and preparing students for the demands of the digital era.

Keywords

artificial intelligence, physics education, digital technologies, digital competence, virtual laboratory, interactive learning, innovative methodology.

FIZIKA FANINI O‘QITISHDA RAQAMLI TEXNOLOGIYALAR VA SUN’IY INTELLEKTDAN FOYDALANISHNING DOLZARBLIGI

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Annotatsiya. Ushbu maqolada fizika fanini o‘qitishda raqamli texnologiyalar va sun’iy intellekt (SI) asosida tashkil etiladigan zamonaviy o‘qitish metodikalarining ahamiyati tahlil qilinadi. Fizika ta’limida virtual laboratoriyalar, interaktiv simulyatsiyalar va sun’iy intellekt platformalaridan foydalanish orqali o‘quv jarayonining samaradorligini oshirish imkoniyatlari yoritilgan. Shuningdek, talabalar raqamli kompetensiyalarini rivojlantirish, mustaqil ta’lim faoliyatini shakllantirish hamda fizika fanini chuqur o‘zlashtirishga xizmat qiluvchi ilmiy-amaliy tavsiyalar keltiriladi.

Kalit so‘zlar. sun’iy intellekt, fizika ta’limi, raqamli texnologiyalar, raqamli kompetensiya, virtual laboratoriya, interaktiv ta’lim, innovatsion metodika.

So‘nggi yillarda ta’lim tizimida raqamli texnologiyalar va sun’iy intellektdan foydalanish jarayoni jadal rivojlanib bormoqda.

Ta’limni raqamlashtirish zamonaviy pedagogikaning muhim yo‘nalishlaridan biri bo‘lib, u o‘quv jarayonining samaradorligini oshirishga xizmat qiladi. Ayniqsa tabiiy fanlarni, jumladan fizika fanini o‘qitishda zamonaviy texnologiyalardan foydalanish o‘quvchilarning bilimlarini mustahkamlash va ilmiy tafakkurini rivojlantirishda muhim ahamiyat kasb etadi.

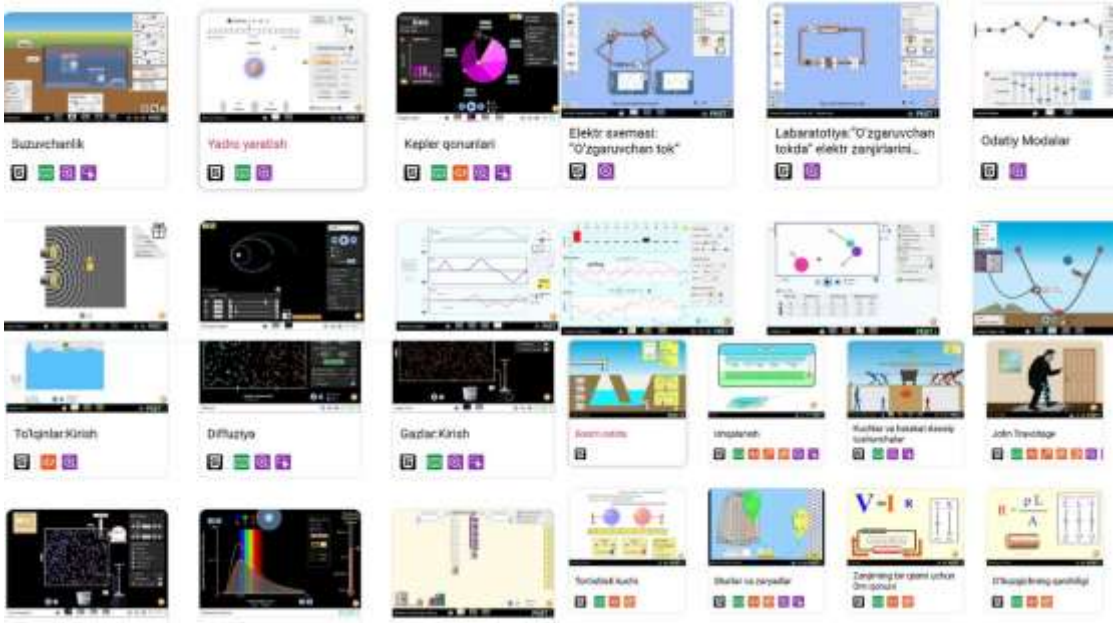
Fizika fanida ko‘plab jarayonlar va hodisalar abstrakt xarakterga ega bo‘lib, ularni faqat nazariy tushuntirish orqali to‘liq anglash qiyin bo‘lishi mumkin. Shu sababli raqamli texnologiyalar, simulyatsiyalar va virtual tajribalar orqali fizik hodisalarni vizual tarzda namoyish qilish muhim ahamiyatga ega. Bunday texnologiyalar o‘quvchilarga murakkab jarayonlarni ko‘rish, tahlil qilish va tajriba asosida xulosa chiqarish imkonini beradi [1].

Fizika ta’limida raqamli texnologiyalarning o‘rni

Raqamli texnologiyalar fizika ta’limini yanada samarali tashkil etishga yordam beradi. Xususan, interaktiv dasturlar va simulyatsiyalar yordamida fizik jarayonlarni

model qilish va tajribalarni virtual tarzda o‘tkazish mumkin. Bu esa laboratoriya jihozlari yetishmaydigan holatlarda ham o‘quvchilarga tajribaviy bilim berish imkonini yaratadi.

Masalan, PhET Interactive Simulations kabi platformalar yordamida elektr zanjirlari, mexanik harakat, to‘lqinlar va boshqa fizik hodisalarni vizual tarzda o‘rganish mumkin. Bunday simulyatsiyalar o‘quvchilarning fizik tushunchalarni chuqurroq anglashiga yordam beradi [2].(*1-rasm*)



(1-rasm)

Raqamli texnologiyalar shuningdek talabalar mustaqil ta’lim faoliyatini rivojlantirishga ham xizmat qiladi. Onlayn platformalar orqali talabalar qo‘shimcha materiallar bilan ishlashi, testlar bajarishi va o‘z bilimlarini mustahkamlashi mumkin.

Sun’iy intellekt asosida fizika fanini o‘qitish

Sun’iy intellekt texnologiyalari ta’lim jarayonini individuallashtirish imkonini beradi. SI tizimlari har bir talabaning bilim darajasi va o‘zlashtirish tezligini tahlil qilib, unga mos topshiriqlarni taklif etadi.

Sun’iy intellektdan fizika ta’limida quyidagi yo‘nalishlarda foydalanish mumkin:

1. Individuallashtirilgan o‘qitish – har bir talaba uchun mos o‘quv materiallarini tanlash.

2. Virtual laboratoriyalar – murakkab tajribalarni xavfsiz sharoitda o‘tkazish.

3. Avtomatik baholash tizimlari – test va topshiriqlarni tezkor tekshirish.

4. Masala yechishda yordamchi tizimlar – fizika masalalarini bosqichma-bosqich tushuntirish.

Bunday texnologiyalar o‘qituvchining ishini yengillashtiradi va o‘quv jarayonining samaradorligini oshiradi.

Fizika ta’limida mavjud muammolar

Amaliy tajribalar shuni ko‘rsatadiki, fizika fanini o‘qitishda ayrim muammolar mavjud. Jumladan laboratoriya jihozlarining yetishmasligi, talabalar matematik tayyorgarligining yetarli emasligi hamda zamonaviy texnologiyalardan foydalanish ko‘nikmalarining pastligi o‘quv jarayonining samaradorligiga ta’sir ko‘rsatadi. Shuningdek ayrim o‘quvchilarda fizika faniga nisbatan qiziqishning pastligi ham kuzatiladi. Raqamli texnologiyalar va sun’iy intellekt vositalari bu muammolarni bartaraf etishda muhim rol o‘ynashi mumkin.

Amaliy tavsiyalar

Fizika ta’limini takomillashtirish maqsadida quyidagi tavsiyalarni berish mumkin:

1. Fizika darslarida interaktiv simulyatsiyalar va virtual laboratoriyalardan foydalanish.

2. Sun’iy intellekt asosida ishlovchi ta’lim platformalarini joriy etish.

3. O‘qituvchilar uchun raqamli texnologiyalar bo‘yicha malaka oshirish kurslarini tashkil etish.

4. Talabalarni mustaqil ta’lim faoliyatiga jalb etish va raqamli kompetensiyalarini rivojlantirish.

5. Fizika masalalarini yechishda sun’iy intellekt yordamchi tizimlaridan foydalanish.

Xulosa

Sun’iy intellekt va raqamli texnologiyalar fizika fanini o‘qitishda katta imkoniyatlar yaratmoqda. Ushbu texnologiyalar yordamida o‘quv jarayonini

individuallashtirish, murakkab fizik jarayonlarni vizual tarzda tushuntirish hamda o‘quvchilarning bilimini samarali baholash mumkin. Natijada fizika ta’limining sifati oshadi, o‘quvchilarning ilmiy tafakkuri rivojlanadi va ularning raqamli kompetensiyalari shakllanadi.

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EFFICIENCY OF USING SOCIAL SERVICES THROUGH DIGITAL PLATFORMS (CASE OF PERSONS WITH DISABILITIES, YOUTH, AND LOW-INCOME FAMILIES IN KHOREZM REGION)

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Abstract

This thesis analyzes the efficiency of providing social services through digital platforms to persons with disabilities, youth, and low-income families, using the Khorezm region as a case study. The research examines the practical outcomes of services offered through the "Single National Social Protection" information system and the my.gov.uz portal, highlighting the advantages of proactive and composite service models. Additionally, infrastructure limitations and digital divide issues in the region are discussed, and scientific-practical recommendations are developed to further improve the system.

Keywords:

Digital platforms, social services, Khorezm region, persons with disabilities, Youth Notebook, Single Registry, proactive services, digital divide.

RAQAMLI PLATFORMALAR ORQALI IJTIMOIY XIZMATLARDAN FOYDALANISH SAMARADORLIGI (XORAZM VILOYATI NOGIRONLIGI BO'LGAN SHAXSLAR, YOSHLAR VA KAM TA'MINLANGAN OILALAR MISOLIDA)

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Annotatsiya. Ushbu tezisda Xorazm viloyati misolida nogironligi bo‘lgan shaxslar, yoshlar va kam ta’minlangan oilalarga raqamli platformalar orqali ijtimoiy xizmatlar ko‘rsatish tizimining samaradorligi tahlil qilingan. Tadqiqotda “Yagona milliy ijtimoiy himoya” axborot tizimi va my.gov.uz portali orqali taqdim etilayotgan xizmatlarning amaliy natijalari, proaktiv va kompozit xizmat shakllarining afzalliklari o‘rganilgan. Shuningdek, hududdagi infratuzilma cheklovlari va raqamli tafovut muammolari yoritilib, tizimni yanada takomillashtirish bo‘yicha ilmiy-amaliy takliflar ishlab chiqilgan.

Kalit so‘zlar: Raqamli platformalar, ijtimoiy xizmatlar, Xorazm viloyati, nogironligi bo‘lgan shaxslar, Yoshlar daftari, Yagona reyestr, proaktiv xizmatlar, raqamli tafovut.

Kirish Raqamli texnologiyalar asrida davlat tomonidan aholining ijtimoiy muhtoj qatlamlarini qo‘llab-quvvatlash mexanizmlarini transformatsiya qilish ustuvor vazifalardan biri hisoblanadi. O‘zbekiston Respublikasi Prezidentining PF-85-son Farmoni hamda milliy qonunchilik talablari asosida, Ijtimoiy himoya milliy agentligi tomonidan “Yagona milliy ijtimoiy himoya” axborot tizimi to‘liq ishga tushirildi. Ushbu tizim ijtimoiy yordamni taqsimlashda shaffoflikni oshirish va inson omilini kamaytirishga xizmat qilmoqda.

Xorazm viloyati o‘zining geografik joylashuvi, demografik o‘sish sur’atlari va chekka tumanlaridagi (masalan, Qo‘shko‘pir, Yangiariq, Tuproqqal’a) ijtimoiy-iqtisodiy holati sababli raqamli ijtimoiy xizmatlar qamrovini tahlil qilishda muhim hudud hisoblanadi. Bugungi kunda viloyatda nogironligi bo‘lgan shaxslar, ishsiz yoshlar va kam ta’minlangan oilalarni ijtimoiy himoya qilish, ularga raqamli platformalar (my.gov.uz, IHMA portallari) orqali xizmat ko‘rsatish dolzarb ilmiy va amaliy muammodir.

Ushbu tadqiqotning **maqsadi** — Xorazm viloyati misolida raqamli platformalar orqali nogironligi bo‘lgan shaxslar, yoshlar va ehtiyojmand oilalarga ko‘rsatilayotgan ijtimoiy xizmatlarning samaradorligini baholash va mavjud kamchiliklarni bartaraf etish bo‘yicha takliflar ishlab chiqishdan iborat.

Tadqiqot jarayonida miqdoriy tahlil, qiyosiy-statistika hamda tizimli yondashuv usullaridan foydalanildi. Ijtimoiy himoya milliy agentligining Xorazm viloyati boshqarmasi va hududiy “Inson” ijtimoiy xizmatlar markazlarining 2025-yil yakunlari hamda 2026-yilning birinchi choragiga oid statistik hisobotlari qayta ishlandi.

Aholining maqsadli guruhlari (nogironligi bor shaxslar, yoshlar, kam ta’minlanganlar) o‘rtasida raqamli savodxonlik va platformalardan qoniqish darajasini aniqlash uchun viloyatning chekka hududlarida tanlanma ijtimoiy so‘rovnoma o‘tkazildi. Shuningdek, 2025-yil oktyabr oyidan boshlab to‘liq joriy etilgan **“Nogironlikni belgilashning yangi standartlashtirilgan elektron tizimi”** monitoring qilindi.

Olingan ma’lumotlar shuni ko‘rsatadiki, Xorazm viloyatida raqamli platformalar yordamida ijtimoiy toifadagi fuqarolarga xizmat ko‘rsatish sifati tubdan yaxshilangan. Yagona milliy ijtimoiy himoya axborot tizimi orqali yordamga muhtoj qatlamlar avtomatik aniqlanib, 2025-yil augustidan e’tiboran “Saxovat va ko‘mak” jamg‘armasi mablag‘lari vaucher tizimi asosida adolatli taqsimlanmoqda.

Xorazm viloyatida 2025–2026-yillarda maqsadli guruhlar bo‘yicha erishilgan raqamli natijalar quyidagi jadvalda aks ettirilgan:

Maqsadli guruhlar va ko‘rsatkichlar (Xorazm viloyati)	**Tizimli natijalar va raqamli qamrov darajasi (2025-2026 yy.)**

Nogironligi bo‘lgan shaxslar	Tibbiy-mehnat ekspertizasi to‘liq raqamlashtirildi. Nogironlik guruhlari inson omilisiz, tibbiy ma’lumotlar bazasi integratsiyasi orqali avtomatlashtirilgan holda belgilandi. Reabilitatsiya vositalariga orderlar elektron berilmoqda.
Ehtiyojmand va kam ta’minlangan oilalar	“Yagona reyestr” platformasi orqali bolalar nafaqasi va moddiy yordam tayinlash 100% elektron formatga o‘tkazildi. Mahallalardagi ijtimoiy xodimlar planshetlar orqali xonadonbay elektron anketa yuritishni yo‘lga qo‘ydi.
Yoshlar qatlami (18-30 yosh)	“Yoshlar daftari” elektron platformasi orqali subsidiyalar ajratish, kasb-hunarga o‘qitish xarajatlarini qoplash va bandlik monitoringi my.gov.uz va idoralararo tizimlar integratsiyasi orqali hal etildi.

So‘rovnomalar natijasiga ko‘ra, elektron arizalar topshirish orqali idorama-idora yurish ko‘rsatkichi viloyat markazi (Urgench shahri) va unga yaqin tumanlarda 82% ga kamaygan. Biroq, chekka tumanlarda bu ko‘rsatkich pastroq natijani qayd etdi.

Tadqiqot natijalari raqamli ijtimoiy xizmatlarning samaradorligi bevosita **“proaktiv xizmat ko‘rsatish”** modeliga bog‘liqligini tasdiqlaydi. Ayniqsa, nogironlikni belgilashda inson omilining cheklanishi korruptsion xavflarni bartaraf etdi. Shuningdek, kam ta’minlangan oilalarni aniqlashda soliq, kadastr va DXA bazalari ma’lumotlarining sinxronizatsiyasi xizmat ko‘rsatish tezligini 3 barobarga oshirdi.

Biroq, Xorazm viloyatining o‘ziga xos sharoitida quyidagi **to‘siqlar va kamchiliklar** aniqlandi:

1. **Raqamli savodxonlik darajasi:** Chekka tumanlardagi ehtiyojmand oilalar va keksalar interaktiv xizmatlardan mustaqil foydalana olmaydilar, bu esa ularning raqamli tizimlardan uzoqlashishiga (Digital Exclusion) sabab bo‘lmoqda.

2. **Infratuzilma muammolari:** Internet tezligining pastligi va hududiy statsionar tibbiyot muassasalarida ma’lumotlar bazasini real vaqt rejimida yangilashdagi texnik uzilishlar.

Muammolarni bartaraf etish uchun mahallalardagi “Inson” markazi ijtimoiy xodimlari zimmasiga aholiga raqamli xizmatlardan foydalanishni o‘rgatish bo‘yicha qo‘shimcha mobil-konsultativ vazifalarni yuklash lozim.

Xulosa. Raqamli platformalar orqali ijtimoiy xizmatlar ko‘rsatish Xorazm viloyatida aholining zaif qatlamlarini himoya qilish tizimini yangi bosqichga olib chiqdi. Nogironligi bo‘lgan shaxslar, yoshlar va kam ta’minlangan oilalarga yordam ko‘rsatish jarayonlari shaffoflashdi va manzilli tus oldi. Tizim to‘liq va muvaffaqiyatli ishlashi uchun kelgusida chekka tumanlarda mobil aloqa infratuzilmasini yaxshilash, elektron tizimlarning interfeyslarini soddalashtirish va inklyuzivlikni oshirish talab etiladi.

Foydalanilgan adabiyotlar ro`yxati:

1. O‘zbekiston Respublikasi Prezidentining 2025-yil 8-maydagi PF-85-son "Nogironligi bo‘lgan shaxslarga ijtimoiy xizmatlar va yordamlar ko‘rsatish tizimini takomillashtirish chora-tadbirlari to‘g‘risida"gi Farmoni.

2. O‘zbekiston Respublikasi Prezidenti huzuridagi Ijtimoiy himoya milliy agentligi Xorazm viloyati boshqarmasi hisobotlari (2025–2026-yy.).

3. World Bank Report. (2025). *Opportunities and risks of digital technology in social protection systems.*

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