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ВЛИЯНИЕ ОБРАБОТКИ СЕМЯН АРБУЗА РАЗЛИЧНЫМИ ПРЕПАРАТАМИ НА КАЧЕСТВЕННЫЕ ПОКАЗАТЕЛИ ПЛОДОВ

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Аннотация. *В данной статье описывается влияние препаратов, для предпосевной подготовки семян арбуза на биохимический состав плодов. Результаты исследований показали, что обработка семян арбуза перед посевом следующими препаратами: водорастворимым концентратом Нанокремний (1 мл/л) и препаратом Максим XL (3,5%, 5 мл/кг) в рекомендованной дозе положительно влияла на содержание нитратов, аскорбиновой кислоты и водорастворимых сухих веществ в плодах. При этом общее содержание сахара было на 0,4% выше по сравнению с плодами в контроле (без обработки).*

Ключевые слова: *арбуз, плоды, аскорбиновая кислота, водорастворимое сухое вещество, общее содержание сахара, нитраты.*

Введение. Центрами происхождения арбуза являются южная и центральная тропическая Африка. Основным центром формирования и распространения арбуза считается Египет. Остатки арбузных семечек и листьев находили в гробницах древних египтян с XI в. до н.э. В исторических источниках упоминается, что арбуз был широко известен в Египте 4000 лет назад, и арбуз широко выращивался в этом регионе за 1500 лет до н.э. В 1–2 тысячелетиях до н.э. арбуз распространился из Египта в страны Ближнего Востока, а позже и в Среднюю Азию [1].

Значение предпосевной подготовки семян в овощеводстве очень велико. Особенно важно получить ранние входы, поскольку нередко случается так, что влаги в почве очень мало или, наоборот, почва переувлажнена, наступает похолодание или длительное время сохраняется высокая температура. В таких условиях прорастание семян затруднено. Для ослабления отрицательного влияния неблагоприятных погодных условий, проводят предпосевную подготовку семян, с тем, чтобы добиваться получения максимальной всхожести семян в более короткие сроки. Задачи предпосевной подготовки семян разнообразны. Главными же обычно считают защиту их от патогенной микрофлоры, повышение скорости и дружности прорастания, полевой всхожести, а также целенаправленное воздействие на рост и развитие растений, на их скороспелость и урожайность.

Предпосевная обработка семян растворами солей, содержащих микроэлементы, может способствовать повышению устойчивости бахчевых культур к болезням. Такие

микроэлементы, как бор, медь, применяемые в 0,02% концентрации, снижают поражаемость антракнозом. Хорошее влияние на прорастание семян и развитие растений оказывают стимуляторы роста — биопрепараты Эмистим С и Фумар, применять которые следует согласно инструкции. Изучение действия этих препаратов показало, что появление всходов из обработанных семян наступало на 3-4 дня раньше, чем из необработанных. Более интенсивно происходило и накопление биомассы. Вместе с тем, нужно учитывать, что семена, подвергающиеся той или иной обработке, пробуждаются еще до посева, и поэтому их нужно быстро высеять, причем во влажную и теплую почву [2].

Методика исследования. С целью определения влияния различных препаратов на семена арбуза мы провели исследования в этом направлении. На районированном в республике сорте арбуза "Ширин" опыты проводились в следующих вариантах: 1. Контроль-1 (сухие семена); 2. Контроль-2 (замачивание семян в воде); 3. Водорастворимый концентрат нанокремния, 1 мл/л; 4. Смачивающийся порошок Триходермина, 1 г/кг; 5. Максим XL 3,5%, концентрат суспензии, 5 мл/кг; 6. Селест Топ 31,2%, концентрат суспензии, 5 мл/кг. Эти варианты сравнивали с контролем-1 (необработанным) и изучали их влияние на биохимический состав плодов. При этом содержание водорастворимых сухих веществ в плодах определяли с помощью рефрактометра (%), содержание сахара - методом Бертрана (%) [3], аскорбиновую кислоту (витамин С) - методом Мурри, мг %, содержание нитратов - методом "дисульфофенола" [4].

Результаты исследования. В 2021-2022 годах в Агрохимической лаборатории Научно-исследовательского института Овоще-бахчевых культур и картофеля был изучен биохимический состав плодов арбуза, полученных из семян, обработанных вышеуказанными препаратами (таблица 1).

Согласно полученным результатам, варианты Контроль-2, Триходермин и Селест Топ превосходили контроль-1 по содержанию аскорбиновой кислоты, водорастворимых сухих веществ и общего сахара в плодах арбуза. Наблюдалось снижение содержания нитратов на 0,2-0,6 мг/кг по сравнению с контролем (14,4 мг/кг).

Таблица 1.

Влияние применения средств предпосевной подготовки семян арбуза сорта Ширин на биохимический состав плодов
(2021-2022 гг.)

№ п/п	Опыт варианты	Норма применения	Аскорбиновая кислота, мг/%	Водорастворимое сухое вещество, %	Общее содержание сахара, %	$N\text{-}NO_3$ мг/кг
1.	Контроль (сухие семена)	-	14,8	8,2	7,4	14,4
2.	Контроль-2 (замочка в воде)	-	15,0	8,3	7,6	13,8
3.	Нанокремний	1 мл/л	16,4	8,9	7,8	13,1
4.	Триходермин	1 г/кг	15,0	8,3	7,6	14,1

5.	Максим XL, 3,5%	5 мл/кг	16,0	8,6	7,8	13,1
6.	Селест Топ, 31.2%	5 мл/кг	14,8	8,4	7,4	14,2

В вариантах с Нанокремнием и Максим XL содержание аскорбиновой кислоты (16,0-16,4%) в плодах было выше на 1,2-1,6%, водорастворимого сухого вещества (8,9-8,6%) на 0,4-0,7% по сравнению с контролем. Общее содержание сахара в плодах составило 7,8%, что на 0,4% выше контроля. Нитраты составили 13,1 мг/кг, что на 1,3 мг/кг ниже, чем в контроле. Во всех вариантах опыта содержание нитратов в плодах арбуза не превышало допустимого уровня МДУ (45 мг/кг) [5].

Выводы. При применении средств предпосевной подготовки семян арбуза сорта Ширин отрицательного влияния на качественные показатели плодов не наблюдалось. При обработке водорастворимым концентратом Нанокремния (1 мл/л) и концентрированной суспензией Максим XL 3,5% (5 мл/кг) наблюдалось положительное влияние на качественные показатели плодов: отмечено увеличение общего содержания сахара в плодах на 0,4% и снижение содержания нитратов по сравнению с контролем-1.

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Theoretical study of the ability of two concrete layers to interact under load

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To date, the method of increasing the load-bearing capacity of load-bearing reinforced concrete structures of buildings by laying an additional layer of concrete on top of them has also been widely used in the practice of bridge construction in our republic. This method serves not only to increase the load-bearing capacity of bridge spans in operation (repair), but also to ensure flexibility during the design period for future increases in temporary loads, as well as to ensure savings in material consumption.
Theoretically, laying a new layer of concrete creates an additional limiting moment, which leads to an increase in load-bearing capacity.
Two types of prismatic reinforced concrete samples are used for theoretical and practical research: Sample 1. The sample is 10x180x1000 cm in size, made of ordinary concrete of concrete class B35 (cast based on the composition of concretes produced at the enterprises of the Bridge Construction Trust), and used as reinforcement a periodic profile of class A-III with a diameter of 12 mm (Figure 1). The design parameters of the construction materials are selected based on the data given in SHNK 2.05.03-22 Bridges and pipelines.
Sample 2. The sample is a structure consisting of two layers of concrete with dimensions of 10x250(180+70)x1000cm, the concrete class in both layers is B35. The 1st layer is made of 180mm thick ordinary concrete (made based on the composition of concretes produced at the enterprises of the bridge construction trust), its design parameters are selected based on the data given in SHNK 2.05.03-22 “Bridges and Pipes”, the 2nd layer is made of 7cm thick fine-grained KMB (based on the composition determined through experimental testing), its design parameters are selected based on the results obtained from experimental testing (Table 1).
Table 1
Accounting indicators of the KMB

1	Accounting indicators	R_b	R_{bt}	$R_{bt,sh}$	E_b
2	Accounting values	19,6 MPa	1,2 MPa	6,1 MPa	$39,6\times10^3$,MPa

The reinforcement in the structure was made of A-III class periodic profile reinforcement with a diameter of 12 mm (Figure 2). The calculation parameters of ordinary concrete are based on the data provided in SHNK 2.05.03-22 “Bridges and Pipes”, the 2nd layer of concrete

Based on the conclusion that two concrete layers should have the same concrete class to ensure that they work together under mutual load [5], both layers are poured from the same B35 concrete class, and the original and new concrete layers are connected using a mechanical cutting method. That is, in the cutting method, the surface of the original sample is cut, and the resulting voids are filled with a new concrete layer, forming a single structure. Due to the presence of basalt fiber in the composition of the new concrete layer, structural reinforcement is not used.

Sample 1

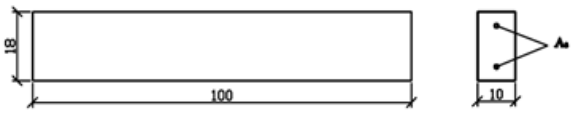

Figure 1. Sample model made of ordinary concrete

Sample 2

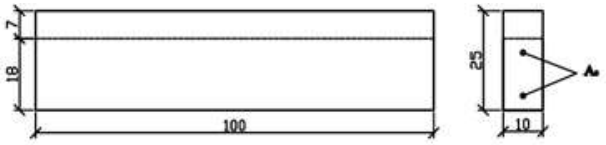

Figure 2. Sample model with additional complex modified concrete laid on top

Theoretical calculations.

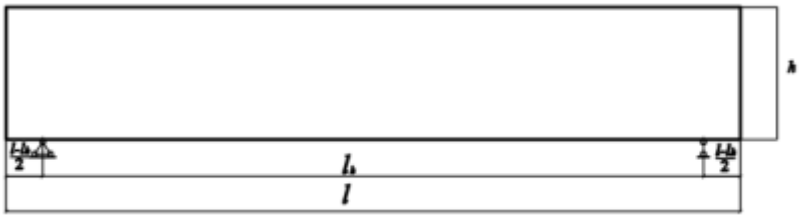

Figure 3. Sample selected as a beam.

The calculations begin by determining the working height of the structure, i.e. the distance from the center of gravity of the reinforcement to the compressed surface of the section, h0=h-a. The height of the compressed zone of the concrete is determined by x.

We determine the height of the compacted area of concrete using the following formula

$$R_s \cdot A_s = R_b \cdot b \cdot x$$

$$x = R_s \cdot A_s / R_b \cdot b$$

The formula for determining the reinforcement surface area is:

$$A_s = \pi d^2/4$$

We determine the strength of the sample in terms of the ultimate bending moment using the following formula.

$$M \le R_b \cdot b \cdot x \cdot (h_0 - 0{,}5x)$$

The ultimate bending moment when the specimen height is increased as a result of placing an additional concrete layer is determined using the following expression.

$$M \le R_{b,q} \cdot b \cdot x \cdot \left(h_0 + h_q - 0{,}5x\right)$$

Where: $R_{b,q}$- design resistance of the new concrete layer.

h_q- height of the new concrete layer

$$x = \frac{R_s \cdot A_s}{R_{b,q} \cdot b}$$

If the above formula is not valid, i.e. $x \ge h_q$[2]:

$$M \le R_b \cdot b\left(x - h_q\right)\left(h_0 + 0.5h_q - 0.5x\right) + R_{b,q} \cdot b \cdot h_q(h_0 + 0.5h_q)$$

$$R_s \cdot A_s = R_{b,q} \cdot b \cdot h_q + R_b \cdot b \cdot (x - h_q)$$

The deformation that occurs in a sample under load, i.e., its vertical deflection, is determined using the following formula.

$$f_v = \frac{5M_{ch}l_h}{48KE_bI_{kel}}$$

Moment of inertia:

$$I_{kel} = \frac{b \cdot h^3}{12} + n \cdot A_s$$

When two-layer concrete is used in structures, their vertical stiffness is determined by the following formula[5].

$$f_v = \frac{M_{ch}}{b_1 \cdot h_0^2\left[\frac{R_{b,ser1} \cdot A_{kel1}}{A_{kel}} + \frac{R_{b,ser2} \cdot A_{kel2} \cdot E_{b2}/E_{b1}}{A_{kel}}\right]}$$

Theoretical calculations were performed based on the above conditions and formulas and are presented in Table 2.

Table 2

Sample	**x, m**	**h, m**	**As, m²**	**I**	**M, kNm**	**P, kN**	**f,m**
Theoretical calculations, ordinary concrete	0,0047	0,18	0,00032	5,3095E-05	13,25	58,90	0,0005
Theoretical calculations, KMB	0,0045	0,25	0,00032	0,00014027	18,48	82,16	0,0002

By laying a new layer, an additional load appears on the specimen along with an additional ultimate moment. In this case, the values of the ultimate and bending moments in specimens 1 and 2 and the differences between them are given in Table 3, respectively.

Table 3

Sample	h	b	l	p	m	M xususiy	M chegaraviy	M
Theoretical calculations, ordinary concrete	0,18	0,1	0,9	2500	40,5	4,10	13,25	9,15
Theoretical calculations, KMB	0,25	0,1	0,9	2500	56,25	5,70	18,48	12,79

The data in Table 2-3 show that by laying an additional concrete layer on the structure, the structure was strengthened.

• by theoretical studies – 30%.

The following reduction in the deformation values of the samples was achieved.

• by theoretical studies – 40%.

Based on the graphs in Table 3, it can be concluded that as the height of the structure increases, the bending moment value increases, as well as the specific gravity increases symmetrically. Considering that the thickness of the newly poured concrete layer should not be less than 60 mm[5], we can consider the thickness of 70 mm proposed by us as the optimal value for the structure.

Conclusion.Another main goal of the experimental test was to determine the sequence of simultaneous failure of both layers when cracks appear in the sample, as well as the opening of the joint boundary of the two concrete layers and the appearance of vertical cracks. During the loading process, vertical cracks first appeared in the sample and continued to the upper part. The opening of the two concrete layers appeared after the vertical cracks. Therefore, in this case, the two concrete layers have the property of working together under the influence of the load.

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Oila shaxs tarbiyasi va kamolotining subyekti sifatida.

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Oila jamiyatning tabiiy va asosiy hujayrasini tash kil etadi. Jamiyat kattakichik oilalardan iborat. Bu oilalar qanchalik mustahkam bo‘lsa, jamiyat ham shunchalik mustaham bo‘ladi. Darhaqiqat, otaona va farzand lar orasidagi axloqiy muhitning buzilishlari salbiy sifatlarning paydo bo‘lishiga olib keladi. Ayni shu ma’noda, oilada bolalarning yoshligidan boshlab yaxshi sifatlarini shakllantirib borishga jiddiy e’tibor berish lozim, hayotiy masalalarni xal qilishda otaona ning bilimi, ma’naviyati, o‘zini tutishi, yurishturishi katta ahamiyatga egadir.Oilada yuksak g‘oyaviytarbiyaviy bilimlarni oshirish orqali bolalarning Vatan tuyg‘usi bilan yashash fazila tini, milliy mas’uliyatini shakllantirish mumkin. Ayni shu ma’noda oilaviy mas’uliyat odamning har bir amali, faoliyati mahsulini to‘liq tasavvur qilgan holda, uning o‘zi va oilasi uchun nima naf keltirishini anglay olish qobiliyatidir. Mas’uliyatni his qilgan odam o‘z ishini doimo puxta rejalashtirib, uning oqibatlarini ol dindan tasavvur qila oladi va zarur natijaga erishish uchun butun kuchi va salohiyatini safarbar etishga qodir bo‘ladi. Bunga erishishning eng qulay yo‘li – avvalo ota onalarning g‘oyaviy bilimlarini oshirish, ularda sog‘lom tafakkur va yangi ilmiy dunyoqarashni shakllantirishdir. Bu esa, otaonalardan farzandlarning elyurt oldidagi ma’naviy burchini to‘g‘ri anglashi, oilaviy munosabatlar doirasida milliy urfodat va an’analarimizni tur mushga singdirishi orqali bolalar ongida milliy g‘oyaga mehrmuhabbat uyg‘otish, ularni mustaqil fikrlaydigan kishilar qilib tarbiyalashini taqozo etadi.

Odatda inson hayot evolyusiyasining tirik tabiat dunyosini inson madaniyati va tarixi dunyosidan ajratib turadigan chegarasi deb tushuniladi. Bizning birortamiz uchun inson hayot tarzida tabiat zarur sharoit bo‘lganini uqtirish shart bo‘lmasa kerak. Inson ham xuddi boshqa bar cha jonivorlar singari o‘ziga qulay bo‘lgan atrof tabiat muhitida unga kerakli havo, oziqovqat, suv, issiqlik, xom ashyo, energiya va axborot bo‘lgan sharoitlardagina yashashi mumkin. Biroq, boshqa barcha tirik mavjudotlardan farqli ravishda inson o‘zi uchun sun’iy dunyosini – madaniyat dunyosini yaratish imkoniga egadir. Aynan mada niyat dunyosigina odam bilan tabiat munosabatida vosita bo‘lib xizmat qiladi. Uzoq vaqtlar oralig‘ida odamlar tabiiy yashash muhitida bo‘lganlari holda sun’iy muhitni yaratib keldilar, bu muhit ularning turmush tarzlarini sezilarli o‘zgartirib yubordi. Hozir insonning inson bo‘lish uchun bosib o‘tgan

uzundanuzoq madaniytarixiy yo‘lini tasavvur qilish mushkul ishdir. Shunchaki odamlar buni o‘ylab ham o‘tirmaydilar. Tug‘ilgan har bir inson dastlab o‘z oila a’zolari munosabatlari ichida bo‘ladi, o‘z tilini, muomala ko‘nikmalari, qaror topgan an’analar ni o‘rgangachgina, o‘z jamiyati bilan madaniy aloqalarga kirishadi. O‘zining butun hayoti davomida har bir inson moslashadi, o‘qiydi, o‘rganadi, mehnat qiladi, atrofida gilarga o‘z ta’sirini o‘tkazadi va o‘z madaniyati dunyosini yaratadi. Madaniyat va jamiyatning turlituman dunyolari bilan duch kelib, ularning ta’sirini sezadi va o‘zgaradi. Biroq insonlardan birortasi o‘z hayotining mazmu ni to‘g‘risida o‘ylab ko‘rganda ham o‘zini avval o‘tgan va kelgusi avlodlar bilan bog‘lovchi bir bo‘g‘in sifatida ko‘rishi qiyin. Alohida inson umrining qisqa muddat liligi birbirining o‘rnini oluvchi o‘zaro bog‘langan av lodlarning madaniytarixiy birligi bo‘lgan insoniyat hayoti bilan taqqoslashni qiyinlashtiradi. Har qanday insonning olamda alohida yashashi sodda bo‘lib ko‘rinsa da, aslida uning tana va psixik tuzilishi, hayot tarzining evolyusiyasidan tortib to uning xulqodobi nihoyatda uzoq muddatli va murakkabligini kuzatish mumkin. Ayni shu ma’noda, hozirgi vaqtda insonning hayotiy evolyusiya bilan bir qatorda uning axloqiy madaniyatini hisobga olmaydigan inson haqidagi ta’limotni ko‘rsatish qiyin. Axloqiy madaniyat strukturasi xususida gapirishdan oldin etika fanining axloq, axloqiy madaniyat katego riyalariga ta’rif bersak. Axloq – ijtimoiy ongning bir formasi bo‘lib, axloqiy me’yorlar, qonunqoidalar yig‘indisi. Axloqiy madaniyat – insonning axloq qo nunlarini, qoidalarini, me’yorlarini, fazilatlari ni bilishi, egallashi va ularga boshqa insonlar bilan bo‘lgan munosabatlarda rioya etish darajasi. Axloqiy madaniyatni amaliy axloq deyish mumkin.

Har qanday odam ham umrining bir marta o‘tishini va o‘zining boshqa imkoniyati yo‘qligini inkor qila olmaydi. Bolalikda u odatda o‘ynaydi, o‘spirinlik va yoshlikda o‘qiydi, yetuk yoshlarda ishlaydi va keksaygan da qanday imkon topsa, shunday dam oladi. O‘zining bu tun umri davomida u turlituman hayotiy vaziyatlarda bo‘ladi, o‘zini u uchragan vaziyatlarga muvofiq tutadi, duch kelgan qiyinchiliklarni yengishga intiladi, bir necha marta o‘zining hayotiy qadriyatlarini baholaydi va qayta bog‘laydi, boshqa odamlar bilan muloqotda bo‘ladi. Uning hayoti voqealarga to‘libtoshgan, o‘zining va boshqalarning qilgan ishlariga to‘g‘ri keladi, turli masalalar borasida ular bilan munosabatga kirisha di, birlari bilan do‘stlashadi, birovini sevadi, oila quradi, o‘z bolalarini tarbiyalaydi, xizmat zinalari dan ko‘tariladi, o‘z ishlarida yutuqlarga erishib, yuqori mansablarga ko‘tariladi. Inson o‘zining hayotiy dunyosi bilan qorishib ketadi, bu dunyo uning ichki dunyosiga ay lanadi, bu yerda u o‘zini xo‘jayin deb biladi va odatda o‘zining istiqboldagi hayoti to‘g‘risida o‘ylagani o‘ylagan. Insonga rejalar tuzib, o‘zining istiqboldagi hayotini mulohaza qilish xosdir. O‘zining kelajagiga befarq

qaraydigan odamni topish qiyin. Odatda inson kela jak haqidagi tasavvurlardan uning hayotiy dunyosining holati va istiqboldagi rivoji bevosita yoki bilvosita bog‘liq ekanini tushunib yetadi. Bu jarayon umuminsoniy tamoyillar bilan bevosita bog‘liq. Ayni shu ma’no da, umuminsoniy axloqiy madaniyat ham har bir inson hayotida muhim ahamiyat kasb etadi. Umuminsoniy axloqiy madaniyat – bu insonning mil lati, irqi, diniy e’tiqodi, qaysi hunar egasi ekanligi, ijtimoiy kelib chiqishi, jamiyatdagi o‘rni, yer yuzining qaysi xududida yashashidan qat’i nazar, axloqiy qoida, me’yorlarga rioya etish, axloqiy fazilatlarga ega bo‘lish darajasidir.

Umuminsoniy axloqiy madaniyat tamoyillari quyi dagilar: insonparvarlik, vatanparvarlik, millatpar varlik, mehnatsevarlik, jamoatchilik, erkparvarlik, tenglik, hushyorlik, saxovatlilik, izlanuvchanlik, tashab buskorlik, qonun ustuvorligi, inson haqhuquqlari, tur li millat vakillariga hurmat va ular bilan bahamjihat yashash, bag‘rikenglik (tolerantlik),ma’rifatparvar lik, o‘zga xalqlarning ilg‘or tajriba va madaniyati ni o‘rganish. Insonparvarlik – insonning boshqalarga hurmat, g‘amxo‘rlik, yordam, mehrmuruvvat ko‘rsatishidir.

Umuminsoniy axloqiy madaniyatning barcha tamoyillari insonparvarlikning muayyan ko‘rinishlaridir. Bizning fikrimizcha, oila tarbiyasida insonparvar likni shakllantirish uchun quyidagi usullardan foyda lanish kerak: oilada barcha uy yumushlarini birgalikda bajarish, o‘zaro birbiriga yordam, katta avlodning yosh avlodga o‘z bilim, tajribasini o‘rgatishi, o‘zaro mod diy va ma’naviy qo‘llabquvvatlash, qariyalarga mehr muruvvat bilan g‘amxo‘rlik qilish, oila a’zolarini himoya qilish, qo‘niqo‘shni, mahalladoshlar bilan iliq muomalada bo‘lish, saxiy bo‘lish, bemorlar, muhtojlar holidan xabar olish, ularga moddiy, ma’naviy yordam ko‘rsatish.

Vatanparvarlik – insonning o‘zi tug‘ilibo‘sgan ona Vatani, oilasi, otaonasi, qarindoshurug‘lari, tabiat, millati, uning urfodatlari, tili, madaniyatiga mehr muhabbati, g‘amxo‘rligi, ularni e’zozlashi, avaylabas rashi, ravnaqi uchun fidoyi bo‘lishi, himoya qilishi va sodiqligidir.

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MODERN METHODS OF TEACHING FOREIGN LANGUAGES IN PRESCHOOL AND SCHOOL EDUCATION

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Annotation: This article explores modern methodologies for teaching foreign languages in preschool and school education. It examines communicative, immersive, and technology-driven approaches that enhance language acquisition and learning effectiveness. The study also provides an analysis of best practices and offers recommendations for improving foreign language instruction among young learners.
Keywords: foreign language teaching, preschool education, school education, communicative approach, immersive learning, technology-enhanced learning.
Annotatsiya: Ushbu maqolada maktabgacha va maktab ta’limida chet tillarini o‘rgatishning zamonaviy metodologiyalari o‘rganiladi. U tilni o'zlashtirish va o'rganish samaradorligini oshiradigan kommunikativ, immersiv va texnologiyaga asoslangan yondashuvlarni o'rganadi. Tadqiqot shuningdek, ilg‘or tajribalar tahlilini o‘z ichiga oladi va yosh o‘quvchilar o‘rtasida chet tilini o‘qitishni takomillashtirish bo‘yicha tavsiyalar beradi.
Kalit so‘zlar: chet tillarini o‘rgatish, maktabgacha ta’lim, maktab ta’limi, kommunikativ yondashuv, immersiv ta’lim, texnologiyali ta’lim.
Аннотация: В этой статье рассматриваются современные методики преподавания иностранных языков в дошкольном и школьном образовании. В ней рассматриваются коммуникативные, иммерсивные и технологически ориентированные подходы, которые повышают эффективность усвоения языка и обучения. В исследовании также дается анализ передового опыта и предлагаются рекомендации по улучшению обучения иностранным языкам среди учащихся младшего возраста.

Ключевые слова: преподавание иностранных языков, дошкольное образование, школьное образование, коммуникативный подход, иммерсивное обучение, обучение с использованием технологий.

Introduction

The process of foreign language learning has significantly evolved over the years due to globalization and advancements in pedagogy. Early exposure to a foreign language enhances cognitive development and fosters multilingual competencies. This article investigates modern teaching methodologies that facilitate effective foreign language acquisition in preschool and school education.

Literature Review Several scholars have analyzed the most effective approaches to language teaching in early education. Vygotsky's theory of social interaction [1.45] suggests that language learning is most effective in a communicative environment. Chomsky's theory of language acquisition [2.67] emphasizes the innate ability of children to learn languages naturally.

Recent studies highlight the effectiveness of:

a) Communicative Language Teaching (CLT): Focuses on real-life communication and interaction [3.23].

b) Total Physical Response (TPR): Uses movement and actions to teach language concepts [4.78].

c) Immersive Learning: Engages children in full-language environments [5.90].

d) Technology-enhanced learning: Utilizes apps and digital tools to facilitate language acquisition [6.112].

Research Methodology This study employs a mixed-methods approach, combining qualitative and quantitative research methods:

a) Surveys: Conducted among preschool and schoolteachers in Uzbekistan to assess the effectiveness of different teaching methods.

b) Classroom Observations: To evaluate the implementation of communicative and immersive techniques.

c) Student Assessments: Measuring language proficiency before and after exposure to specific teaching methodologies.

Analysis and Results

Communicative Approach in Language Learning Observations showed that classrooms employing CLT had more engaged students who were confident in

speaking. For example, a school in Tashkent using role-playing exercises demonstrated a 30% improvement in students' speaking proficiency [7.56].

Immersive Learning for Preschoolers Preschools implementing full-language immersion programs saw faster vocabulary retention. A comparative study indicated that children in immersive settings outperformed their peers in bilingual vocabulary tests by 40% [8.72].

Role of Technology in Language Learning Digital applications such as Duolingo and LingQ were introduced in several schools, leading to increased motivation and self-learning among students. Schools that integrated technology into their curriculum recorded an 18% improvement in reading comprehension tests [9.88].

Effectiveness of Total Physical Response (TPR) Preschools employing TPR techniques experienced a significant improvement in children's listening and response skills. Teachers reported that students who learned through movement and action were able to retain words 25% better than those taught through traditional methods [10.102].

Conclusions and Recommendations

The study finds that modern teaching methodologies significantly improve language acquisition in young learners. The most effective approaches include communicative and immersive learning, while technology plays an essential role in engaging students.

Recommendations:

1. Increased Teacher Training: Teachers should be trained in CLT and immersive learning techniques.
2. Integration of Digital Tools: Schools should incorporate language-learning applications into their curriculum.
3. Government Support for Language Programs: Policies should encourage the development of bilingual and immersive programs.
4. Early Language Exposure: Foreign language teaching should begin as early as preschool to maximize retention and fluency.

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Переводная литература стала неотъемлемой частью национального духовного богатства узбекского народа

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Аннотация: Максуд Шейхзаде многочисленные переводы отмечены высоким художественным качеством. Он ознакомил узбекских читателей с шедеврами более пятидесяти авторов. Художественный перевод играет огромную роль в развитии культуры и литературы нашей страны и в интернационализации общественного коммунистического сознания.
Ключевые слова: поэт, произведение, переводчик, Максуд Шейхзада, книга, поэма, жанр, стихи.

Художественный перевод играет огромную роль в развитии культуры и литературы нашей страны и в интернационализации общественного коммунистического сознания. Неоценимо его значение и во взаимообогащении национальных культур. Упорно искать новые, отвечающие сегодняшним требованиям методы и формы работы, позволяющие сделать еще более плодотворным взаимное обогащение культур, открыть всем людям еще более широкий доступ ко всему лучшему, что дает культура каждого из наших народов"*. Огромную пользу в этом благородном деле приносит переводческая деятельность талантливых служителей муз.

Глубоко осознавая важность такой работы, узбекские литераторы постоянно знакомятся с достижениями литератур братских народов, с произведениями мировой классики, и все наиболее значительное, идейно-поэтически ценное переводят на свой родной язык. Переводная литература стала неотъемлемой частью национального духовного богатства узбекского народа, она активно и положительно воздействует на разум и сердце читателей. Среди тех, кто внес большой вклад в становление и развитие переводческого дела в Узбекистане, следует назвать имя заслуженного деятеля искусств Максуда Шейхзаде. Его перу принадлежат многие высокохудожественные произведения, переведенные на родной язык с русского и азербайджанского; он вполне удачно

Его многочисленные переводы отмечены высоким художественным качеством. М.Шейхзаде ознакомил узбекских читателей с шедеврами более пятидесяти авторов. В фонде архива Института рукописей им. Х.Сулейманова обнаружили

множество стихотворений, переведенных с родного языка на русский. Переводческая работа, таким образом, занимала значительную часть творчества Шейхзаде, который прекрасно звал историю народов Востока, был знатоком мировой художественной литературы, создавал интересные литературные портреты представителей как отечественной, так и зарубежной классики. Его литературные взгляды исследованы в ряде специальных работ*.

Перу Шейхзаде принадлежит более двадцати сборников на узбекском, русском и азербайджанском языках, ряд баллад и поэм. Грани его поэтического творчества стали предметом изучения многих исследователей.

Круг поэтов, произведения которых интересовали Максуда Шейхзаде, составляет две группы:

1) поэты, чьим творчеством он углубленно занимался всю жизнь или обращался к ним множество раз (В.Шекспир, Ш.Руставели, А.С.Пушкин, М.Ю.Лермонтов, В.В.Маяковский, Н.Хикмет, Е.Ча-ренц, А.А.Сурков, М.Ф.Ахундов, Я.Колас, С.Рустам);

2) поэты, к кому он обращался эпизодически (Д.Байрон, Р.Тагор, Валлатхал, Мухаммед Камаль, Адам Мицкевич, Р.И.Бехер, С.Щипачев, М.Рыльский, А.Исаакян, И.Чавчавадзе, Н.А.Некрасов, Т.Г.Шевченко, Н.Гильен, Абулькасым Лахути, Расул Рза, Эдуард Багрицкий, Янка Купала и другие). Таковы масштабы переводческой работы Максуда Шейхзаде, отдавшего наибольшую часть своих творческих сил произведениям В.Шекспира. И это не случайно. Известный английский художник Джон Драйден, определяя заслуги Шекспира в истории литературы, подчеркивал, что "Шекспир был Гомером или отцом наших драматических поэтов"*. Он был им и для М.Шейхзаде. Его произведения покоряли переводчика "своим гуманистическим пафосом, страстным разоблачением зла, царящего в мире, защитой высоких моральных принципов, выдвинутых эпохой величайше

Максуд Шейхзаде - выдающийся узбекский поэт и драматург, публицист и педагог. Он поистине крупнейший и талантливейший переводчик. Исследованию его многогранного творчества посвящено много капитальных и частного характера работ. Есть исследования и некоторых аспектов его р переводческой деятельности . Однако до сих пор эта важнейшая сторона его творчества оставалась за пределами пристального внимания науки. Специального изучения творчества Максуда Шейхзаде - переводчика пока нет, что, собственно, и побудило диссертанта в какой-то мере восполнить этот пробел.

Рассмотрим кратко работы, посвященные переводам Шейхзаде, чтобы показать: темы и проблемы, раскрываемые и решаемые в данной диссертации, еще не нашли всестороннего исследования.

Опыт научного обобщения проблемы художественного перевода в аспекте сопоставительной стилистики (на примере узбекских переводов английской и американской литератур). Ташкент, 1981. водах Чулпана (Абдулхамида Сулейманова)1 и Максуда Шейхзаде2, выявляет удачи и неудачи обоих переводов, но при этом не рассматривает образы главных героев. Мы же уделяем особое внимание проблеме воссоздания характеров Гамлета, Ромео, Джульетты и других героев трагедий на узбекском языке.

Э.С.Азнаурова анализировала известный монолог Гамлета "Быть или не быть?", сравнивая два перевода Максуда Шейхзаде (издания 1948 г. и i960 г.) с их английским и русскими переводами. Автор работы уделяет внимание переводу "Короля Лира", сделанный Гафуром Гулямом, особенно речи шута, его шуткам, игре слов, каламбурам; высказывает свое отношение к некоторым особенностям (больше лингвистическим) перевода. Естественно, что в пределах статьи она не в силах была затронуть и вопросы, связанные с передачей характера Гамлета.

М.Шейхзаде одно из почетных мест в освоении шекспировского наследия, впервые в науке анализирует переводы Шейх-заде некоторых сонетов Шекспира, оценивает их качество. В последние годы в Узбекистане появился ряд научных работ, посвященных изучению художественного мастерства переводчиков.

Что же касается перевода трагедии "Ромео и Джульетта", то он не нашел сколько-нибудь заметного отражения в критике и не удостаивался специального исследования. Однако это вовсе не значит, что он не заслуживает особого и подробного изучения. Наоборот, трагедия и ее перевод так значительны, что слабое внимание к ним вызывает удивление. Характеры главных героев, проблема их воссоздания в переводе. Этот выбор не стихиен. Что исследование любого произведения не может считаться полным, если характеры его образов не нашли глубокого рассмотрения, ибо идейно-тематическое содержание, композиция, сюжет, фабула, обстоятельства, взаимоотношения героев, образный строй произведения - все, что составляет "форму жизни", сцементировано характерами героев,обусловлено стремлением художника к их полному и правдивому раскрытию. Правдивое воссоздание характеров обусловливает адекватность "формы жизни" перевода и оригинала"Воссоздание характера в переводах "Гамлет" и "Ромео и Джульетта". Эта основная проблема решается

параллельно с исследованием художественных особенностей названных трагедий; соискателя интересует, как переводчик решает вопрос сохранения фразеологизмов, игры слов, каламбуров, "говорящих имен", какие эквиваленты находит он тем изобразительным средствам, которые невозможно воссоздать на родном языке.

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Mass and composition of rails

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Annotation: This article provides information about rails, which are the main element of the railway. Here we will talk about the mass and their composition, depending on the type of rails.

Keywords: Mass, steel, carbon, hidden defects, pits and cavities, deformations, sutures.

Entrance part: The overhead structure of the track is designed to receive the load from the moving content wheels and give it a slippery handling, as well as to guide the motion of the moving content wheels along the rail sleeve. These goals are achieved when all elements work as one and the same, as a single construction.The most stringent requirements for the elevated structure of the line are: all its elements should be robust and reliable operation, ensure safe movement of trains at the specified maximum speed; the service life should be long and it should not be expensive to look at and maintain. Rails are the head element of the upper device. they take pressure from the moving content wheels and transmit it to the elements in the well, as well as diverting its wheels as the moving content moves. On autoblogged plots, the rails also act as conductors for the signal current, and on electric traction – for the reverse torque.

On World Railways, long rails as well as welded rail plates tend to be used more widely. Therefore, due to the decrease in the number of eclipses, this situation and the content in motion will improve the conditions of their interaction and have a great economic effect. For example, if similar but 25 m rails are laid instead of R65 type rails with a length of 12.5 m, 3,902 t of metal is saved every 1,000 km due to a decrease in the need for grip attachments. In addition, the reduction in the number of junctions reduces the resistance to train traffic by about 10%, reducing the absorption of the moving content wheels as well as the current maintenance costs of the track.

The standard length of modern rails is between 10 m and 60 m in different countries, equivalent to: 25 m in the CIS countries; 24 and 48 m in the Czech Republic, 30, 45 and 60 m in Germany; 18, 24 and 36 m in France; 18, 29 m in England; 25 m in Japan; 11, 89 and 23, 96 m in the USA. In the countries of the Commonwealth of independent

states, a limited number of rails with a length of 12.5 M are produced for threaded conductors.

In addition to standard length rails, length-shortened rails are also used for laying on the Inner Line of curved sections of the road. Such rails will be shortened by 80 and 160 mm, and for rails 12.5 m long – by 40, 80 and 120 mm.

The rail mass is determined by:

- the greater the load on the axis of the railway crew, the speed of the movement of trains and the scale of the load carried on the line, the greater the mass of the rails, along with the same other conditions;
- the larger the Rail Mass, the greater the cost of use on larger lines (to maintain the track, to overcome the resistance of train traffic) when other conditions are the same.

Today, there are various proposals to determine the rail mass empirically, depending on a limited number of factors.

The data in the available reports and literature, reference materials, scientific research and the results of the feasibility analysis determine the relationship between the Pogon mass of the rail, q and the main parameters of use listed below.

The quality of rail steel is determined by its chemical composition, micro-and macro-corrosion.

Carbon increases the hardness and wear resistance of rail steel. However, the greater the amount of carbon in the composition, the greater the fracture strength of the steel even when other conditions are the same, and the more complex it is to straighten it in a cold State. Therefore, the metal rail is distributed relatively evenly throughout the cut, requiring strict adherence to its chemical composition, especially in the case of phosphorus and sulfur. Manganese increases the hardness and wear resistance of steel, ensuring its sufficient viscosity. Silicon also increases the metal hardness, increasing its resistance to absorption.

Phosphorus and sulfur are harmful mixtures that make steel brittle: when the content of phosphorus increases — the rails become brittle in the cold, and when the sulfur content increases – when heated.

Arsenic increases the hardness and wear resistance of rail steel several times, but its excess reduces the degree of viscosity to the tattoo.

The rails are prepared according to the established technology regulation, in accordance with GOST R 51685-2000.

The rails are made of quiet (Spokane) Steels made in marten, converter or electropechs. The quality of rail steel is characterized by its micro - and macrospection. The steel microtusion is detected by magnifying it 100-200 times under a microscope. Typical

rail steel components are Ferrite and ferrite, composed of carbon-free iron, and perlite, constructed from the addition of cementite.

A study of rail steel microtussion suggests that it will have the potential for severe resistance to absorption as well as the property of tightness when it has a sorbite structure in the result of special thermal processing.

Volumetric polishing of rails is common today. It increases the plasticity and tightness of the rails, increasing the resistance of the rails against the formation of snoring roughness and transverse snoring fractures. The durability of such rails in use will be 1.3-1.5 times higher than that of non-polished rails in use.

For the quality of rail steel, its macro-structure (structure at the fracture site, which is visible when viewed without a tool or using a magnifying glass) plays an extremely important role. Steel should have a uniform structure," hair", plene and slag-free, with no traces of uneven distribution of chemical compounds by cross section. The improvement of steel quality is achieved by strict adherence to technical conditions and continuous improvement of steel preparation and rolling technology of rails. In the CIS countries, the density of rail steel was assumed to be 7.83 tons/m3.

Thus, the requirements and conditions for rails are, at the same time, important, necessary and opposite. Therefore, in this case, rails that satisfy most of the requirements specified under certain conditions are found to be the optimal option.

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STUDY OF THE PROPERTIES OF NON-WOVEN THERMALLY BONDED MATERIALS

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Annotation. *The influence of the main technological parameters and the content of modifiers and plasticizers on the physical and mechanical properties of non-woven thermally bonded materials has been studied. The optimal values for the content of binder, plasticizer, modifier, catalyst and thermal bonding conditions have been established*

The development of technology for thermal bonding of chemical fibers requires solving the problem of increasing their adhesive ability.

To do this, it is necessary to develop an effective method for modifying the surface of industrial chemical fibers, which will increase the strength of adhesive joints and improve the properties of non-woven thermally bonded materials based on them.

To evaluate the performance properties of fibers and nonwovens produced by thermal bonding, tests were carried out in accordance with standard methods. IR spectroscopy methods were used to assess the physicochemical properties of modifiers.

The most well-known theories of polymer adhesion are considered: adsorption, diffusion, chemical, electrical, which explain in different ways the mechanism of formation of adhesive bonds.

The amount of adhesion depends not only on the presence, but also on the number of bonds between the contacting bodies. In turn, the number of bonds is determined by the contact area between the adhesive and the substrate. The most important factors influencing the strength of the adhesive bond are: temperature, pressure, contact time, polymer compatibility, molecular weight, crystallinity, surface topography, etc. All methods of increasing the adhesive ability of polymers come down to activation, aimed at changing the morphology and energy state of the fiber surface, and modification, based on the introduction of various functional groups into the surface layers of the polymer. Chemical fibers generally have low adhesive ability. One of the promising methods is to modify the surface of chemical silicon fibers with organic compounds, in particular oligovinylethoxysiloxanes.

It has been shown that for the production of non-woven thermally bonded materials with increased physical and mechanical properties, it is relevant to develop new, effective and inexpensive modifiers from domestic raw materials for industrial chemical fibers and binders that increase their adhesive ability.

The effect of processing polypropylene and polyester fibers, as well as the binder - thermoplastic polyamide powder, with organosilicon modifiers and industrial plasticizers - dibutyl phthalate and dioctyl sebacate on their deformation-strength properties - has been studied.

It has been shown that treating chemical fibers and polyamide powder with plasticizers in a small amount (up to 2 wt. %) increases the breaking load by 20% and the elongation at break by 10%. With a further increase in the content of plasticizers, the deformation-strength properties of fibers and powder deteriorate, which is associated with a significant decrease in intermolecular interaction and viscosity of the fiber polymer and binder. Optimal technological parameters for processing chemical fibers and binders with plasticizers were obtained: a) for polypropylene fiber: DOC content - 2-2 .5 wt.%; b) for polyester fiber: DOS content - 1.5-2% by weight; b) for polyamide powder: DWF content - 1.5-2% wt.

The influence of the main technological parameters and the content of modifiers and plasticizers on the deformation-strength properties of non-woven thermally bonded materials obtained using binders and the autohesive bonding method was studied. It has been established that the dependences of breaking load, elastic modulus, stiffness and elongation at break are extreme. It has been shown that an increase in the binder content in the fibrous web leads to an increase in the number of gluings in the nonwoven material and, as a consequence, an increase in the breaking load and a decrease in elongation at break. Increasing the temperature and pressing pressure to the optimal value also helps to increase the deformation-strength properties of the nonwoven material, which is explained by the increase in the adhesive strength of the adhesives and their quantity in the canvas. With a further increase in temperature and pressure, partial destruction of the binder polymer occurs, a decrease in the strength of the adhesives, or the destruction of some of the adhesives in the non-woven material.

It was revealed that the process of plasticization of the surface layer of fibers intensifies the interdiffusion of macromolecules of the connected fibers, and as a result increases the strength of adhesive bonds and the deformation-strength properties of the nonwoven material. Decrease in temperature. melting of the fiber contributes to an increase in the intensity of thermal movement of its molecules and their segments,

which in turn leads to accelerated diffusion and better interaction of contacting surfaces.

A further increase in the plasticizer content leads to a decrease in the cohesive strength of chemical fibers and binders and the strength of their adhesive connections in the material.

The optimal conditions for the production of non-woven thermally bonded materials from plasticizer-treated chemical fibers and binders have been determined. The influence of the content of decavinyl dodecaethoxysiloxane (compound (IV)), as the most effective, on the physical and mechanical properties of non-woven thermally bonded materials from polyester fibers obtained using either polypropylene fibers as a binder has been studied. fibers, or thermoplastic polyamide powder, as well as non-woven materials from polyester and polypropylene fibers obtained by autohesive bonding. Research has shown that the dependences of breaking load, elongation at break, elastic modulus, and rigidity of nonwoven materials on the content of compound (IV) are extreme. In addition to chemical bonds, which increase the strength of adhesive connections at the contact boundary, physical forces (dispersion, orientation, induction) also act.

The optimal conditions for producing non-woven thermally bonded materials with increased physical and mechanical properties from polypropylene and polyester fibers and polyamide powder modified with decavinyl dodecaethoxysiloxane were determined:

a) non-woven material made of polypropylene fibers: modifier content - 0.2% by weight; catalyst content - 1.5% wt, mod.; pressing temperature - 155 °C; pressing pressure - 4.0 MPa; canvas feed speed - 7 m/min;

b) non-woven material made of polyester fibers: modifier content - 0.2-0.25% by weight; catalyst content - 1.5% wt, mod; pressing temperature - 230°C; pressing pressure - 2.0 MPa; canvas feed speed - 7 m/min;

v) non-woven material made of polyester fiber and polyamide powder: modifier content - 0.25% by weight; binder content -45% mass; heat treatment temperature – 1200C; pressing temperature - 130 °C; pressing pressure - 3.5 MPa; canvas feeding speed -7 m/min

g) non-woven material made from a mixture of polyester and polypropylene fibers: modifier content -0.25% mass; catalyst content -1.5% wt, mod.; binder content -35% mass; pressing temperature - 160 °C; pressing pressure - 4.0 MPa; canvas feeding speed - 7 m/min.

A comparative analysis of the physical and mechanical properties of non-woven thermally bonded materials obtained using industrial plasticizers and new oligovinylethoxysiloxanes (table) showed that

Table

Physical and mechanical properties of non-woven thermally bonded materials obtained using various types of binders

Compound	Modifier/plasticizer content	Temperature pressing, °C	Tearing load, N	Rel Length at break, %	Modulus of elasticity, MPa	Hardness, Sn	Air permeability, Dm^3/cm^2	Wet loss coefficient, %
PP	0,25	155	135	15	4,0	4,0	1150	5
PET	0,20	230	140	12	4,0	4,0	950	5
PET+PA powder	0,25	130	115	20	4,5	8,5	850	6
PET+PE	0,25	160	100	20	3,0	4,5	1100	5
PP	2,0	160	60	30	2,5	8,0	1000	10
PET	2,0	235	65	25	1,5	7,0	900	10
PET+PP	2,0	160	75		1,5	8,5	1000	10
PET+PP powder	2,0	130	90	35	3,5	10,0	800	15

that the use of decavinyldodecaethoxysiloxane (compound (IV)) as a modifier of chemical fibers and polyamide powder makes it possible to obtain on their basis non-woven thermally bonded materials with increased physical and mechanical properties: breaking load and elastic modulus increase by 2 - 2.5 times, relative elongation at break, rigidity and strength loss coefficient in the wet state are reduced by 2 times. At the same time, the high breathability and elasticity of nonwoven materials is maintained.

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KVALIFIKATATIV SINTAKSEMALAR HAQIDA UMUMIY TUSHUNCHA

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Annotatsiya: Mazkur maqolada kvalifikativ sintaksemalarning tabiati, ularning gap tuzilishidagi o‘rni hamda semantik-funksional xususiyatlari haqida umumiy tahlil berilgan. Shuningdek, o‘zbek va ingliz tillarida kvalifikativ sintaksemalarning ifodalanishi qiyosiy tahlil asosida yoritilgan.
Kalit so‘zlar: Sintaksema, kvalifikativ, semantika, funksiya, qiyosiy tahlil, ot sintaksemalari, sifatlovchi birliklar.
Abstract: This article provides a general analysis of the nature of qualificative syntaxemes, their syntactic functions, and semantic features within sentence structures. A comparative approach is used to analyze how qualificative syntaxemes are represented in Uzbek and English languages.
Keywords: Syntaxeme, qualificative, semantics, function, comparative analysis, noun syntaxemes, descriptive units.
Аннотация: В статье дается общий анализ природы оценочных синтаксем, их синтаксических функций и семантических особенностей в структурах предложений. Для анализа того, как оценочные синтаксемы представлены в узбекском и английском языках, используется сравнительный подход.
Ключевые слова: синтаксема, оценочный, семантика, функция, сравнительный анализ, синтаксемы существительных, описательные единицы.

Kirish

Til sintaksisi — bu so‘zlar va ularning birliklar orqali gap tuzish qonuniyatlarini o‘rganadigan tilshunoslik sohasi. Sintaktik birliklardan biri sifatida sintaksema tushunchasi tilning zamonaviy nazariyalarida alohida o‘rin tutadi. Kvalifikativ sintaksemalar esa gapda aniqlovchi, sifatlovchi, ta’riflovchi ma’no yuklovchi birliklar sifatida qaraladi.

Asosiy qism

Kvalifikativ sintaksema tushunchasi va uning mohiyati

Kvalifikativ sintaksema (lotincha *qualificare* — “ta’rif bermoq”) — bu gapda asosiy ot yoki predmetga nisbatan belgi, holat, ta’rif yoki boshqa xususiyatni bildiruvchi

sintaktik birlikdir. Ular sintaksis darajasida gapning mazmuniy aniqligini ta’minlaydi va predmet haqida qo‘shimcha ma’lumot beradi.

Kvalifikativ sintaksemalar turli so‘z turkumlarida ifodalanishi mumkin:

a) **Sifatlar orqali:** *yaxshi o‘qituvchi, chiroyli ayol*
b) **Ravishlar orqali:** *juda tez yugurdi, nihoyatda dono*
c) **Sifatdoshlar orqali:** *kelayotgan mehmon, o‘qigan bola*
d) **Sonlar orqali:** *uchta kitob, besh yigit*

Bu birliklar gapda aniqlovchi (atributiv) vazifasini bajaradi va ko‘pincha o‘zidan keyin keluvchi ot bilan birikadi.

Ingliz tilida ham xuddi shunday vazifani **adjectives**, **participles**, **adverbs**, va **quantifiers** bajaradi:

a) *a red apple, three young boys, quickly written letter, very smart student*

Bu elementlar gapdagi otni tavsiflab, unga nisbatan qo‘shimcha semantik yuk beradi.

2. Kvalifikativ sintaksemalarning grammatik va semantik-funksional xususiyatlari

a) Grammatik xususiyatlar:

O‘zbek tilida:

a) Belgilovchi birliklar (sifat, ravish) har doim aniqlanayotgan otning oldida keladi: *yashil daraxt, baland bino*.
b) Sifatlar ko‘plikda yoki jinsga qarab o‘zgarmaydi, ammo ot o‘zgaradi: *yaxshi bola – yaxshi bolalar*.

Ingliz tilida:

a) Adjective har doim otning oldidan keladi: *old house, beautiful girl*
b) Sifatlar grammatik ravishda o‘zgarmaydi: *a young man – young men*

b) Semantik-funksional xususiyatlar:

Kvalifikativ sintaksemalar quyidagi semantik vazifalarni bajaradi:

Funktsiya	**Tushuntirish**	**Misol (O‘zbekcha)**	**Misol (Inglizcha)**
Ta’riflovchi	Predmetning tashqi yoki ichki sifatini bildiradi	katta uy	a big house
Baholovchi	Subyektiv baho bildiradi	yomon odat	a bad habit
Holat ifodalovchi	Predmetning vaqtinchalik holatini bildiradi	charchagan bola	the tired boy
Nisbiy belgini bildiruvchi	Nisbiy so‘zlar orqali aniqlik kiritadi	tosh yo‘l	a stone road

3. O‘zbek va ingliz tillarida kvalifikativ sintaksemalarning qiyosiy tahlili

O‘zbek va ingliz tillari morfologik tuzilishi jihatidan farq qilgani sababli, kvalifikativ sintaksemalar har ikkala tilda turlicha ifodalanadi. Quyidagi jadvalda ularning asosiy farqlari ko‘rsatilgan:

Aspekt	**O‘zbek tili**	**Ingliz tili**
So‘z tartibi	Sifat + Ot: *chiroyli ayol*	Adjective + Noun: *beautiful woman*
Ko‘plik	Sifat o‘zgarmaydi: *yaxshi bolalar*	Adjective o‘zgarmaydi: *good boys*
Tarkibi	Bitta yoki bir nechta so‘zli: *juda chiroyli*	Bitta yoki bir nechta so‘zli: *very beautiful*
Bog‘lanish	Mustaqil yoki otga bog‘langan holda	Har doim otga bevosita bog‘langan
Talaffuzdagi urg‘u	Ma’no yukiga qarab o‘zgaradi	Stress asosan otga yaqin joylashadi

4. Gapdagi roli va sintaktik funksiyasi

Kvalifikativ sintaksemalar gapda quyidagi sintaktik rollarni bajaradi:

a) **Aniqlovchi (determinant):** *aqlli bola* – bu yerda “aqlli” aniqlovchi sifatida xizmat qiladi.

b) **Kesimning tarkibiy qismi:** *U charchagan edi* — bu yerda sifatdosh kesimga bog‘langan.

c) **Hol vazifasida:** *U tez yugurdi* – ravishli kvalifikativ hol sifatida xizmat qiladi.

Ingliz tilida ham bu rollar mavjud:

a) *A smart child* – attributive role

b) *He is tired* – predicate adjective

c) *He ran quickly* – adverbial modifier

5. Kvalifikativ sintaksemalarning nutq ifodasi va uslubiy boyligi

Kvalifikativ sintaksemalar tildagi estetik, badiiy va emotsional ifodaning asosiy vositalaridan biridir. Adabiy til va publitsistik uslubda ularning qo‘llanilishi matnni boyitadi:

a) O‘zbek adabiyotida: *O‘tkir Hoshimov asarlaridagi “mehribon ona”, “sabrli chol” kabi iboralar*

b) Ingliz adabiyotida: *Charles Dickens’ work: “a miserable boy”, “a gloomy morning”*

Xulosa

Kvalifikativ sintaksemalar til strukturasi va mazmuniy ifodaning muhim bo‘g‘ini hisoblanadi. Ular gapda predmet yoki hodisani aniqlashtirish, unga ta’rif berish, estetik va emotsional baho yuklash kabi asosiy vazifalarni bajaradi. Bu sintaktik birliklar vositasida tilning tasviriy va funksional imkoniyatlari kengayadi, nutq esa aniq, obrazli va ifodali tus oladi.

O‘zbek va ingliz tillarida kvalifikativ sintaksemalarning o‘rganilishi tilshunoslik sohasida ham nazariy, ham amaliy jihatdan muhim ahamiyatga ega. Har ikki tilga xos fonetik, morfologik va sintaktik xususiyatlar, shuningdek, nutqdagi ifoda usullari taqqoslanganida, ularning umumiyliklari bilan birga farqlari ham yaqqol namoyon bo‘ladi. Ayniqsa, so‘z tartibi, grammatik moslashuv, va urg‘u kabi omillar bu birliklarning tilda qanday ishlatilishini aniqlaydi.

Tadqiqot natijalari shuni ko‘rsatadiki, kvalifikativ sintaksemalarning chuqur tahlili nafaqat sintaksis nazariyasini boyitadi, balki tarjima nazariyasi, adabiy tahlil, nutq madaniyati va lingvodidaktik faoliyatda ham qo‘llanilishi mumkin. Shu sababli, ushbu sintaktik birliklarning har ikki tildagi tadqiqoti kelgusida xalqaro lingvistik tadqiqotlar uchun ham poydevor bo‘lib xizmat qiladi.

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ОБРАЗОВАНИЕ СТРОЕНИЕ И ПРОЕКТИРОВАНИЕ УТОЧНОВОРСОВЫХ ТКАНЕЙ

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Аннотация. *В статье приведены сведения изготовления уточноворсовых тканей образуюўихся на основе одна система основных и одна система уточных нитей. Поэтому уточноворсовые ткани вырабатываются на ткацих станках с одного навоя.*
Отличительные особенности строения уточновосовых тканей заключаются в том, что уток данных тканей выполняет двояную функцию: грунтового и ворсового утка.
.**Annotatsiya.** *Maqolada bir sistema танда iplari va bir sistema арқоқ iplari asosida hosil qilingan арқоқ туклиматолар ishlab chiqarish haqida ma'lumotlar berilgan. Shuning uchun арқоқ тукли matolari bir тўқув ғалтакли to'quv dastgohlarida ishlab chiqariladi.*
To'qilgan gazlamalar strukturasining o'ziga xos xususiyatlari shundan iboratki, bu gazlamalarning арқоқ uni ikkuma vazifani bajaradi:асос ва тук арқоқ ипини.
Abstract. *The article provides information on the production of weft pile fabrics formed on the basis of one system of warp threads and one system of weft threads. Therefore, weft pile fabrics are produced on weaving machines from one beam. Distinctive features of the structure of weft pile fabrics are that the weft of these fabrics performs a dual function: ground and pile weft.*

Ткани данного вида переплетения имеют на лицевой поверхности ворс, полученный после разрезания уточных нитей в отделочном производстве.
Уточноворсовые ткани вырабатываются в хлопчатобумажной промышленности. Для получения шелковистого, блестящего ворса на поверхности ткани в утке используется хлопчатобумажная пряжа, полученная из хлопка специальных сортировок, в основе ткани чаще всего используется крученая хлопчатобумажная пряжа [1].
Для изготовления уточноворсовых тканей требуется одна система основных и одна система уточных нитей. Поэтому уточноворсовые ткани вырабатываются на одночелночных станках с одного навоя.

Отличительные особенности строения уточновосовых тканей заключаются в том, что уток данных тканей выполняет двоякую функцию: грунтового и ворсового утка.

При выполнении функции грунтового утка он переплетается основой переплетениями с короткими перекрытиями (полотняным, саржевым и другими) и образует грунт ткани.

При выполнении функции ворсового утка он переплетается с основой переплетениями с длинными уточными перекрытиями и образует ворсовые настилы, которые разрезаются в процессе отделки.

Таким образом, для изготовления уточноросовых тканей используются два различных вида переплетения, а именно: переплетение для грунтового утка и переплетение для ворсового утка. Раппорт уточноворсовых тканей зависит от видов использованных переплетений и от соотношения между утками.

Раппорт по основе определяется как наименьшее общее краткое раппортов по основе переплетений грунтового и ворсового утка. Раппорт по основе ворсового утка $R_{ОГ}$ равен сумме основных нитей, которые он перерывает при образовании ворсового настила $n_{ОВ}$ и которыми он закрепляется $n_{ОЗ}$, т. е. $R_{ОВ}=n_{ОВ}+n_{ОЗ}$.

При выборе переплетения для грунтового утка следует стремиться к тому, чтобы его раппорт по основе $R_{ОГ}$ был равным или был кратным раппорту по основе переплетения ворсового утка $R_{ОВ}$. Например, при $R_{ОВ}=6$ переплетение грунтового утка с основой может быть с раппортом $R_{ОГ}=2$, $R_{ОГ}=3$ или $R_{ОГ}=6$.

Ворсовый уток при образовании ворсового настила может перекрывать различное число основных нитей, т. е. $n_{ОВ}=3$ до 7 и более нитей. Закрепляется ворсовый уток также различным числом основных нитей, т. е. $n_{ОЗ}$ равен от 1 до 3 и более нитей (чаще всего $n_{ОВ}=1$ н или $n_{ОЗ}=3$ н).

Раппорт по утку уточноворсовых тканей равен произведению раппорта по утку переплетения грунта ткани $R_{УГ}$ и суммы соотношения между утками. Соотношение между грунтовым $n_{УГ}$ и ворсовым $n_{УВ}$ утками может быть от 1:2 до 1:6 и более, т. е. после одной прокидки грунтового утка может быть от двух до шести и более прокидок ворсового утка. Так как эти настилы ворсового утка разрезаются в отделочном производстве, то уточноворсовые ткани должны иметь очень большую плотность ткани по утку, которая примерно в 2 – 3 раза больше плотности ткани по основе [2, 3].

По расположению ворса на поверхности уточноворсовые ткани делятся на ткани со сплошным ворсом и на ткани с ворсом в виде продольных полос.

Сплошной ворс на поверхности имеют уточноворсовые ткани: плис, вельвет, полубархат. Ворс располагается в виде продольных полос на поверхности тканей вельвет-корда. Вельвет-рубчика.

Для того, чтобы на поверхности ткани получать сплошной ворс, необходимо места закрепления ворсового утка равномерно распределить на площади раппорта.

Ворс в виде продольных полос будет образовываться на поверхности ткани в том случае, если места закрепления ворсового утка будут образовывать продольные полосы.

При выработке данных тканей чаще применяется рядовая проборка основных нитей в ремиз, иногда используется проборка по рисунку. В зуб берда пробирается по два, реже по три нити. Например, необходимо построить заправочный рисунок уточноворсовой ткани со сплошным ворсом на поверхности и имеющей следующие параметры.

$n_{ОВ}$= 5, $n_{ОЗ}$ = 1, $n_{уч}$: $n_{УВ}$ = 1 : 3.

Для построения заправочного рисунка ткани необходимо определить раппорт по основе переплетения ворсового утка.

$R_{ОВ}=n_{ОЗ}+n_{ОЗ}=5+1=6$,

Далее выбирается переплетение грунтового утка с основой, которое при $R_{ОВ}=6$ может быть полотняным саржевым с $R_{О}=3$. Выбирается для грунта полотняное переплетение, раппорт которого $R_{ОГ}=R_{УГ}-2$.

Раппорт уточноворсовой ткани по основе $R_{О}=6$, по утку – $R_{У}=2$ (1:3)8. Заправочный рисунок этой ткани изображён на рис. 1а. Из схемы разреза ткани по направлению утка видно, что при выполнении функции ворсового утка он образует на поверхности ткани длинные уточные настилы, которые закрепляются одной основной нитью.

a)

b)

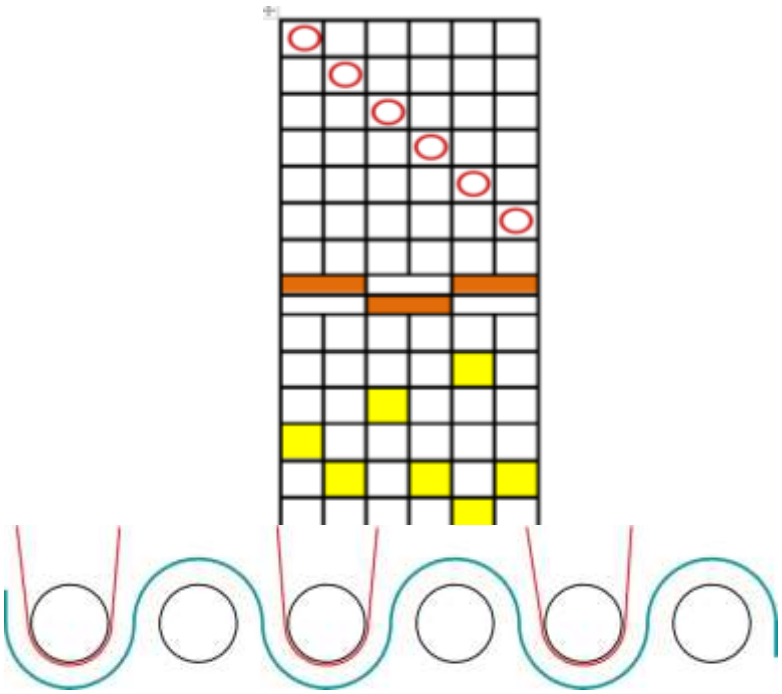
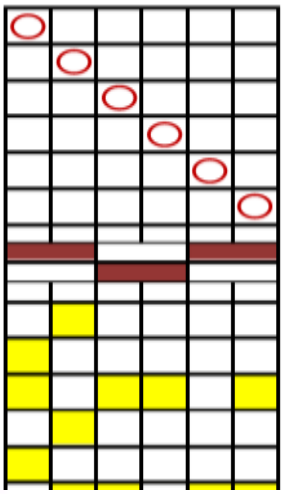


Рис. 1. Заправочный рисунок уточноворсовой ткани по изображению *а* и *б*.

Заправочный рисунок переплетения ткани, имеющий на поверхности ворс в виде продольных полос, изображён на рис. 1б. Анализ данных этого заправочного рисунка позволяет определить параметры его построения, а именно $n_{ОВ}=5$, $n_{О3}=1$, $n_{УГ}:n_{УВ}=1:2$, $R_{ОВ}=6$, $R_{ОГ}=3$, $R_{О}=6$, $R_{У}=3+2=9$. Изменение способа закрепления ворсового утка и изменение длины ворсового настила за счёт увеличения или уменьшения числа основных нитей, которые он перекрывает, вызывают изменение свойств и строения ткани, а также изменяют параметры построения рисунка переплетения.

a)



b)

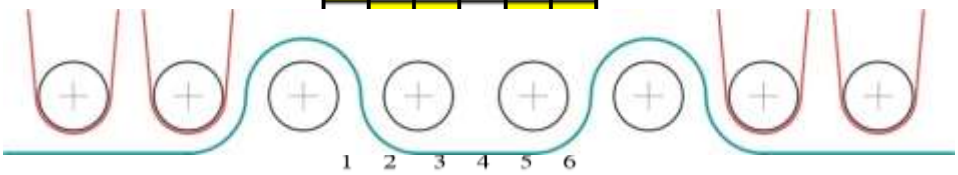


Рис.2.

Заправочный рисунок уточноворсовой ткани по изображению *v* и *g*.

Заправочные рисунка уточноворсовых тканей с различными способами закрепления ворсового утка изображены на рис. 2a, b. Сравнение рисунков переплетения этих тканей показывает что на рис. 2в ворсовый уток закреплён одной нитью, т. е. n_{O3}=1 и перекрывает семь нитей основы, т. её. n_{OB}=7, а на рис. 2 b ворсовый уток закреплён тремя нитями, т. е. n_{O3}=3 и перекрывает пять нитей основы, т. е. n_{OB}=5. Все остальные параметры построения этих тканей одинаковы [4, 5].

При изменении способа закрепления ворсового утка в ткани изменяется высота ворса и прочность его закрепления. Так, закрепление ворсового утка тремя нитями вместо одной увеличивает прочность закрепления ворса в ткани и уменьшает высоту ворса. Высота ворса данных тканей может быть ориентировочно определена по формуле.

$$H_e = \frac{10 \cdot n_{OB}}{P_O \cdot 2};$$

где H_B – высота ворса;

n_{OB} – число основных нитей, которые перекрывает ворсовой уток;

P_O – плотность ткани по основе на 1 см.

Из формула видно, что увеличение плотности ткани по основе при прочих условиях уменьшает высоту ворса, а с увеличением числа основных нитей, которые перекрывает ворсовых уток, высота ворса увеличивается.

$$B_{см^2} = \frac{P_O \cdot P_y}{R_O \cdot R_y} \cdot K_B,$$

Где $B_{СМ}$ – число ворсинок на см^2 (густота ворса);

R_O R_Y – раппорт ткани по основе и по утку;

K_B – количество ворсинок на площади раппорта;

P_O, $P_У$- плотности ткани по основе и по утку на 1 см.

Из приведённой формулы видно, что изменить густоту ворса на поверхности ткани можно за счёт изменения раппортов переплетений или за счёт изменения плотности ткани по основе и по утку. Выпускаемые уточноворсовые ткани используются как одёжные и мебельно-декоративные.

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Shaykhzada, his literary and critical articles

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Annotation: During the 10 years she lived in Tashkent, Shaykhzoda not only mastered the Uzbek language, but also wrote poems and articles in this language, translated Pushkin's works, studied the works of Cholpon, and studied the works of Navoi with love.
Key words: Maqsud Shaikhzada, Tashkent, Oybek, Navoi, articles, scientist, Olim Sharafiddinov, poet, Tesha Salimov.

One of the contemporaries of Maqsud Sheikhzadeh writes: in his memoirs, "The spring of 1938. The rumor that a new, very knowledgeable teacher has arrived at the Department of Literature suddenly spread throughout the institute. Soon after, I had the privilege of meeting the cause of the voice directly at work..." These lines are written by Tesha Salimov, a well-known linguist who has worked at the Tashkent Pedagogical Institute for many years. Although Khotiranavis said that "the new, very knowledgeable teacher arrived at the Pedagogical Institute in 1938, in our opinion, this event happened in the spring of 1939. At that time, the department of Uzbek literature of the institute, along with other creative institutions and higher educational institutions, was hesitant about the 500th anniversary of Navoi. In this regard, an extended meeting of the department was held on the same day, where the head of the department, Scientist Sharafiddinov, gave a lecture on the study of Navoi's literary heritage. The lecture was well received by everyone, including the new teacher. Then there was a discussion on the lecture.

Among those who participated in the discussion, the speech of a young scientist attracted the attention of the audience. According to Tesha Salimov, his impassioned speech was distinguished by its "theoretical foundation, deep scientific interpretation of rich factual materials, ability to clearly and clearly express ideas." This young scholar was Maqsud Shaikhzadeh, a new member of the Department of Uzbek Literature. "Today's meeting," continues Tesha Salimov, "was of particular importance to me." Shaykhzada's thoughts about Navoi, in particular, his wonderful and moving thoughts about the poetics of Navoi's poetry, surprised everyone. But the example of Shaikhzada Navoi's lyrics opened up a whole world of sophistication for me. That's how it happened, I became a loyal fan of Sheikhzadeh. We worked together at the

institute for many years. "Sheikhzada became a shining example for me even during the pedagogical work process."

In the early 1950s, when I studied at the Faculty of Philology of the State University of Central Asia (now the National University of Uzbekistan), I listened to the lectures of Docent Tesha Salimov on linguistic issues for some time. The teacher, who knew his field thoroughly, was a very humble, cultured, wonderful person. Such a person admired the knowledge of the "young scientist" about Navoi at that time, so during the 10 years he lived in Tashkent, Sheikhzada not only mastered the Uzbek language, but also wrote poems and articles in this language, translated Pushkin's works, and researched the work of Cholpon. He studied Navoi's work with love. Even when he studied, he was able to debate with Olim Sharafiddinov, the author of the first treatise on the great poet, and was able to charm the members of the Uzbek language and literature department with his knowledge and new views on Navoi.

If we take into account that in those years the study of Navoi's work had just begun, and there were only a few literary experts in this field, such as Olim Sharafiddinov and Oybek, it is known that Shaikhzoda began to discover Navoi almost at the same time as them. So, under the influence of whom or whom, and based on what sources, he began to study Navoi's life and work? We know very well that Shaykhzoda met Oybek and Gafur Ghulam during his service in "Sharq Haqikat" newspaper and learned the Uzbek language with their help. We are aware that Shaykhzoda studied at the Institute of Language and Literature of the Science Committee, and during his short term at this institute, he had close relations with Fitrat, Otajon Hashim and Oybek.

It is known that since 1928, Oybek was interested in the personality of Navoi and began to study reliable sources about him. It can be assumed that Oibek shared the new and strange information he received from these sources during his conversations with Sheikhzadeh, and gave him the impetus to ignite his feelings of love for the great Uzbek poet. Moreover, in 1924, Cholpon, who began to study his work in Sheikhzadeh, and was in frequent communication with him, announced that the 500th anniversary of Navoi's birth was approaching and put the issue of serious study of the great poet's work on the agenda. Perhaps Cholpon also contributed a lot to the "pollination" of Shaikhzada with Navoi's work. In any case, when he came to work at the pedagogical institute, he was recognized as one of the connoisseurs of Navoi's work. When talking about Sheikhzada's rich knowledge of Navoi and the reasons for this knowledge, it is permissible to refer to Tesha Salimov again. "The secret of Sheikhzada's knowledge," he wrote, "was the excellence, breadth and depth of his reading." The main of these

three factors, which is the secret of Sheikhzadeh's knowledge, is the "excellence of reading". Sheikhzadeh, like all scholars of the past, gained knowledge through reading. He also studied Navoi's life and work through private reading.

In 1938, Sheikhzade published the articles "The great figure of our classical literature" in the "Teachers' newspaper" and "The problem of love in Khamsa" in the "Yosh Leninchi" newspaper, which revealed that he had already entered the world of Navoi in those years.

In 1938-1941, William Shakespeare, Nizami Ganjavi, Zahiriddin Muhammad Babur, Muhammad Aminkhoja Muqimi, A.N. Radishchev, M.Yu. Lermontov, N.G. Chernyshevsky, A.P. Chekhov, A.M. Gorky, V. Writers such as V. Mayakovsky, M. F. Okhundov, Henri Barbus wrote dozens of articles about writers and did not forget the great Uzbek poet. On the contrary, Navoi Sheikhzada was at the center of his literary criticism. In addition to the two articles mentioned above, he wrote "The image of a woman in Navoi" (1939), "Navoi is the most cultured person of his time", "Navoi is a patriot", "Navoi's work and socialist culture", "The passionate singer of science and enlightenment", "Navoi and Babur" (1940), "Navoi and Youth", "Great Educator", "The Matter of Honesty in Navoi", "Folklore Motifs in Navoi's Work", "Great Poet" and the brochure "Genial Poet"

Shaykhzada, with his literary and critical articles and a scientific treatise, made an important contribution to the science of Navoi studies, which began to be born in this period, and it would be no mistake to say that he was one of the founders of this science.

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Conditions for the development of next-generation technologies

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Abstract

This thesis is aimed at forming students' knowledge in the field of modern mobile communication systems, where leading scientific concepts are presented: mobile communication and the principles of its construction, classification of mobile radio systems, mobile generations, LTE system architecture, requirements for the LTE system. functionality and main components of the system architecture. This course is aimed at forming students' understanding of the principles of organizing radio communications, professional radio communication systems, mobile communication standards and generations. In this thesis, you will acquire the skills of organizing mobile communications. Many communication technologies, duplex channel schemes, organization of handover, development of cellular communication systems. 2.5G generation mobile communication systems, 2.75G generation mobile communication systems, 3G third generation standards, 3.9G or 4G generation standards to instill knowledge and skills in the younger generation.

Keywords: LTE, communication , first generation, mobile, applications, medicine, education, IoT, Security, protocols,4G, professional.

Introduction

Mobile generation technologies play a significant role in global development. Their development contributes to the expansion of mobile Internet and communication networks, increasing speed and efficiency, as well as creating innovative opportunities in various fields. Each of the mobile generations, with its new capabilities, has brought significant changes to society and the economy.

Scientific Basis of the Topic

1G (first generation) technology was designed only for voice communication and was based on analog signal transmission. 2G (digital technology) made it possible to make text messages and short video calls on mobile phones. 3G made it possible to transfer

the Internet faster. 4G significantly increased the speed of mobile Internet, allowing video chat and high-quality video viewing.

The development of mobile internet has provided an increase in the speed and quality of internet connection on mobile devices. The expansion of mobile internet networks has also led to the development of mobile applications and services. Using the internet using mobile phones has created a unique convenience and expanded the possibilities of each user to access the internet. 4G and 5G networks have accelerated this process even further. Mobile technologies have transformed the way people and societies communicate around the world. Mobile generations have created new opportunities and have led to economic, social, and cultural transformations. With the advent of 5G, smart devices, IoT, automated systems, and other advanced technologies have entered our lives. These technologies have led to major changes in areas such as medicine, education, and transportation.

Mobile technologies have created new opportunities in the economy, increasing jobs and investment opportunities around the world. As the 5G network develops, it has enabled the creation of new products and services in the manufacturing and service sectors. At the same time, network infrastructure and investment in it contribute to economic development and increase global competitiveness.

Security issues in mobile networks have been a constant focus. With 5G technology, ensuring network security will become even more complex, as more devices will be connected to the network. Cybersecurity issues are of great importance in protecting the network. The implementation of security protocols and encryption technologies is necessary to protect user data.

The integration of artificial intelligence (AI) and mobile networks creates new opportunities for mobile devices. In 5G networks, artificial intelligence technologies allow for automatic network management and optimization. For example, AI can be used to manage the network in real time, and quickly identify and resolve network problems. Mobile technology is constantly innovating. New capabilities are being created in the 5G network, and new technologies such as virtual reality (VR) and augmented reality (AR) are being used in mobile devices. Foldable screens and new chips ensure that mobile devices work more efficiently. The development of mobile technology is making our lives more interactive and digital.

5G network will combine with other advanced technologies to create new opportunities. Edge computing technology will help to accelerate the network and ensure efficient use of resources. Through this technology, data is processed far from

the center of the network and processed in real time, which will make the industry more efficient.

Mobile technology is creating new opportunities in medicine. 5G will enable remote surgeries, telemedicine, and patient monitoring. The low latency and high speed of 5G networks will play a key role in providing remote care in medicine. Mobile networks will allow healthcare applications and medical data to be managed in real time.

Mobile technologies are transforming social relationships. They allow people to communicate from anywhere in the world. Mobile networks provide education, job opportunities, and interactive communication on social networks. 5G technology will further intensify social relationships and create new forms of work, such as remote work and online education. Mobile apps play a major role in making our lives more convenient and efficient. 5G networks will accelerate these apps and create new opportunities. Through mobile services, people will be able to solve their work and daily needs more quickly and efficiently. IoT applications also allow for remote control of smart devices.

Smart devices and their integration are developing with mobile technologies. With the help of 5G networks, homes and cities will be filled with smart technologies. Mobile devices will be able to control home appliances, transportation systems, and even city infrastructure. With this technology, our lives will become more interactive and efficient.

Conclusion

In a rapidly evolving digital-first business world, global organizations are highly influenced by next generation technologies. Future technological advancements, developments, and innovations enabled by the internet, software, and services are known as next generation technologies. These include advanced robotics, AI, IoT, RPA, quantum computing, 3-D printing, 5G wireless networks, virtual reality and augmented reality, and blockchain.Next generation technologies are paving a way for network-enabled, miniature, and fully automated machines. Although enterprise applications based on such technologies are still in the nascent stages of development, they are gradually beginning to drive innovation strategies of the business and the overall impact of these technologies is expected to multifold over the coming years.

Meticulous Research has been at the focus of tracking different use cases of next generation technologies and enabling global players to direct their innovation and

product enhancement activities towards achieving stable revenue growth in this highly dynamic market environment.

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The poet's work “Jaloliddin Manguberdi " from the outstanding manifestations of his literature

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Annotation: the origin of Maqsud Shaikhzoda's “Jaloliddin Manguberdi” is mentioned, as well as the fact that the work is one of the works worth keeping up to date. Maqsud Shaikhzoda, one of the outstanding figures of Uzbek literature, was born on October seven, one thousand and eight in Akdosh, Azerbaijan. The poet Birmingham nine came to Tashkent in the twenty-eighth year and lived and worked in the capital until the end of his life.
Keywords: brave, masterpiece, commander, battle, Coast, enemy, chief, causative, in the past, child.

Why did Maqsud Shaykhzoda write the historical drama "Jaloliddin Manguberdi"in the year one thousand nine hundred and forty-fourth, the moment of the Second World War, which later led to the arrival of many geese (accused of "idealizing the feudal past" of the Uzbek people) on his head?

Maqsud Shaikhzoda, one of the outstanding figures of Uzbek literature, was born on October seven, one thousand and eight in Akdosh, Azerbaijan. The poet Birmingham nine came to Tashkent in the twenty-eighth year and lived and worked in the capital until the end of his life. He saw it as his second homeland. Shaikhzoda has created poetic collections such as" ten poems"," My consonants"," book Three"," wrestling nechun"," battle and song"," Captain Gastello"," heart says...", historical drama" Jaloliddin Manguberdi " and a number of other publicist works.

According to the famous literary critic Naim Karimov, during the war years, representatives of the authorities encouraged writers to write works about famous Warlords of the past. They looked at the fact that such works could invite the people and the army to learn from the brave Warlords of the past, folk heroes, educate them in the spirit of the patriotic qualities of these famous personalities. Having received such a creative order, Shaykhzoda went on to write a stage play about Jalaliddin Manguberdi, one of the brave children of the Uzbek people. The then head of the Republic, Usman Yusupov, sends him to the Fergana region, one of the khushmanzara maksans of our country, so that the poet can complete his work faster. "Do not fantasize

with other things. The people are looking forward to a work about Jalaliddin from you. Go to the Valley and return to finish it faster!"the leader inspires the poet. So Maqsud Shaykhzoda went to Fargana with his wife Sakinakhonim and wrote a historical drama in six months.

About jalaliddin Manguberdi so far a lot of historical and artistic works have been created not only in our country, but also in other countries. The famous Azerbaijani Adib Uzbek boy Maqsud Shaykhzoda was one of the first to sing the heroics of Jalaliddin in his works. He is becoming a very serene masterpiece about the great warlord, raising the spirits of our warriors about the land of the Fatherland. So far, every line, every word of it is still moving from language to language.

Genghis Khan's Army encircles Jaloliddin Manguberdi by not allowing him to cross the river. having lost an unequal battle (the Battle of the Sindh River) on the twenty-fifth of November of the twenty-first year, Jaloliddin Manguberdi, with 4,000 Warriors, jumped from an 18-20-meter ravine into the Sindh River and sailed to its right bank, entering the interior of the desert (this desert is still called Desert Jaloli). Genghis Khan Jalaliddin, impressed by Manguberdi's bravery, turned to his own sons and said, " This Is How father son should be!",. A few days later, Jaloliddin Manguberdi's army numbered 7,000. He is joined by Army leaders such as Kulbars Bahadir, Kabkuh and SA'diddin Ali ash-Sharabdor, who come with their own men. After jalaliddin Manguberdi stayed at the helm with his hungry, juldur-clad warriors in the unfamiliar desert of North India. The province of Shatra, which he intended to use this, was said to have had a khujum to the Rana i.e. King Jaloliddin Manguberdi. Rana is killed by Jaloliddin Manguberdi's sniper rifle, while his army retreats in retail. Jaloliddin Manguberdi gets a big catch. In this, the heroism of jalaliddin and the inequality of his knowledge are also vividly described.

Furthermore historian and Secretary of publisher Khorezmshokh Shihobuddin Muhammad an-nasawi also describes manguberdi in his work “siyrat as-Sultan Jaloliddin Manguberdi” as follows “Jaloliddin was a man from karacha,of medium stature, Turkic appearance and speaking in Turkey. At the same time he could speak Persian. He was brave, brave, and the best lion among the Lions, the fearless rider, the bottomiest among the armies. He was a handsome, gentle man, not angry, did not utter offensive words, did not laugh, just smiled, was clumsy.He glorified truth, justice”

Historically it is known that Jaloliddin Manguberdi was a zabardast representative of the Khwarezmshah dynasty and showed great heroism in the fight against the Mongol invaders. In particular, the Battle of one thousand two, which took place on the banks of the Indian River on the ninth of December of the twenty-first year, occupies a great

place in the life of the Great Commander. In this battle, he would give worthy resistance to the Mongol forces under Genghis Khan. But, the forces were not equal. Having fallen into the hands of the enemy and not wanting to be humiliated, sarkarda orders the entire harem to be drowned, and he himself, with his remaining soldiers, crosses the river to the other bank.

In our country, Jalaliddin Manguberdi urine is treated with great reverence. In 1999, sarkarda's 800th anniversary was widely celebrated in our country. In the same year, a monument to our great-grandfather was erected in the city of Urgench. The Order of Jaloliddin Manguberdi was instituted in 2000.

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“O‘ZBEKISTON” she’rining tahlili.

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Annotatsiya: Maqolada adib Maqsud Shayxzodaning adabiy merosi xususida so‘z boradi. Maqsud Shayxzoda she’riyatining naqadar nafis va so‘zlarning mohirona ishlatilganligi, she’rdagi satrlarning qisqacha tarifi berilgan.
Kalit so‘zlar: O‘zbekiston, she’riyat, havo, erkinlik, sandiq, orzular, tinib qolgan suv.

O‘ZBEKISTON
Yopiq sandiqda ham saqlanar havo,
Ammo u yo‘qotgan havo nafasin,
Uni havo deyish, o‘zi noravo,
Bandilik bo‘g‘ibdi orzu-havasin.
U – o‘lgan sharobdek beparvo, bejon,
Na mastlik keltirar va na hayajon.
Holbuki, bir chog‘lar erkin parvozda
Yelga sherik bo‘lib o'ynab yugurgan,
Quyunning bo‘lagi, ulkan miqyosda –
Bepoyon cho‘llarda qumlar sovurgan.
Yoki oqshom payti shabboda bilan
Chinorlar tagida qizlarni o‘pgan,
Daralar ichida yonganda gulxan,
Bir oz isingani olovga chopgan.
Bu bari bo‘lgan gap. Bari haqiqat...
Ammo eslanadi tushlarda faqat.
Sandiqda bo‘g‘ilgan bir parcha havo
Bir chog‘lar erkinman deb qilgan da’vo...
Shunday: tinib qolgan bir kosa suvda
Sellarning, soylarning afsonasi bor,
O‘ngib, xira bo‘lgan siniq ko ‘zguda
Xushro‘ylar husnining vayronasi bor,
Bugungi sukutda, tinglasang, dildor,
Kechagi to‘ylarning taronasi bor.

Maqsud Shayxzoda ushbu she’r orqali inson erkinligi, orzulari va vaqtning o'tishi bilan ularning qanday o'zgarishi haqida chuqur mulohaza yuritadi. Maqsud Shayxzodaning “Yopiq sandiqda ham saqlanar havo” she’ri chuqur falsafiy ma’noga ega bo‘lib, inson erkinligi, orzular va mavjudlikning mohiyatini aks ettiradi.

She’rning “Yopiq sandiqda ham saqlanar havo” misrasi insonning hayotdagi holati bilan bog‘liq kuchli metafora sifatida ishlatilgan. Yopiq sandiq va havo – erkinlik va qamalish timsoli. Havo – bu hayot, nafas olish, yashash ramzi. Yopiq sandiq esa qamalish, cheklovlar, ozodlik yo‘qligini anglatadi. Agar havo sandiq ichida qolsa, u asl holatini yo‘qotadi, nafas olish imkoniyati cheklanadi. Bu bandlik va erkinlik o‘rtasidagi kurashni ifodalaydi.

“Ammo u yo‘qotgan havo nafasin”. Bu misrada shoir shuni anglatmoqchi: ha, yopiq sandiq ichida havo bor, lekin u allaqachon o‘z mohiyatini yo‘qotgan – u nafas olish uchun yaroqsiz. Bu inson hayotidagi ayrim holatlar bilan bog‘liq bo‘lishi mumkin: masalan, odam jismonan yashaydi, lekin erkin fikrlash, o‘z orzularini ro‘yobga chiqarish imkoniyatidan mahrum bo‘lsa, bu haqiqiy hayot bo‘lolmaydi.

“Uni havo deyish, o‘zi noravo, Bandilik bo‘g‘ibdi orzu-havasin” Bu yerda shoir bandlik (qamalish) orzularni qanday bo‘g‘ishini tasvirlaydi. Haqiqiy havo – bu erkin harakatlanadigan, nafas olishga imkon beradigan havo. Agar havo qamalib qolsa, uni “havo” deb atash mumkin emas, chunki u endi inson uchun foyda bermaydi. Bu she’rda erkinlik va bandlik o‘rtasidagi tafovut juda aniq tasvirlangan. Shoir inson ruhining erkin bo‘lishi zarurligini, aks holda hayot o‘zining mazmunini yo‘qotishini anglatmoqchi bo‘lgan.

Maqsud Shayxzoda hayoti davomida qatag‘onlarga uchragan shoirlardan biri edi. Uning bu misralari hayotining og‘ir kechinmalaridan kelib chiqqan bo‘lishi mumkin. Orzular bandlikda ushlab turilsa, ularning qiymati qolmaydi. Xuddi shu kabi, inson ham ozod bo‘lmasa, to‘liq hayot kechira olmaydi. She’rning yakunida esa shoir sukut va xotiralar orqali vaqtning o‘tishi, inson hayotidagi o‘zgarishlar va orzularning susayishini falsafiy ma’noda anglatadi. Tinib qolgan suv va siniq ko‘zgudagi akslar — o‘tkinchi hayot, unut bo‘layotgan xotiralar va vaqtning o‘z ta’sirini o‘tkazishi haqidagi fikrni kuchaytiradi. Bu she’r inson qalbining chuqur kechinmalarini aks ettirib, har bir o‘quvchini o‘z hayoti, orzulari va erkinligi haqida o‘ylashga undaydi.

“O‘zbekiston” she’ri inson erkinligi va mavjudlik mohiyatini chuqur o‘ylashga undaydi. Shayxzoda bu she’r orqali faqat jismonan yashash yetarli emas –biz haqiqiy hayot kechirish uchun erkin bo‘lishimiz, orzularimizni amalga oshirishimiz lozim ekanligini uqtiradi.

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Maqsud Shayxzoda — millat g‘ururi va adabiy yuksalish ramzi

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Annotatsiya: Ushbu maqolada Maqsud Shayxzodaning o‘zbek milliy adabiyoti va ma’naviy hayotidagi o‘rni, uning ijodida millat g‘ururi va adabiy yuksalish g‘oyalari qanday aks etgani tahlil qilinadi. Shayxzoda o‘zining tarixiy dramalari, she’rlari va tarjimalari orqali o‘zbek xalqining tarixiy xotirasi, milliy o‘zligi va ma’naviy qadriyatlarini ulug‘lagan. Maqolada adibning milliy uyg‘onish jarayoniga qo‘shgan hissasi, uning asarlarida vatanparvarlik, adolatparvarlik va ilm-ma’rifatga intilish g‘oyalari yoritiladi.
Kalit so‘zlar: Maqsud Shayxzoda, millat g‘ururi, adabiy yuksalish, milliy uyg‘onish, tarixiy xotira, ma’rifat, vatanparvarlik, adolat, tarjimonlik, ma’naviy qadriyatlar.

Kirish

O‘zbek adabiyotining rivojlanish tarixida milliy ruhni uyg‘otgan, adabiy tafakkurni yangi bosqichga ko‘targan adiblar orasida Maqsud Shayxzoda alohida o‘rin tutadi. U o‘zining serqirra ijodi bilan o‘zbek xalqining tarixiy xotirasini, ma’naviy qadriyatlarini va millat g‘ururini badiiy ifodalab, adabiyotimizning yuksalishiga katta hissa qo‘shdi. Shayxzoda ijodi bugungi kunda ham milliy tafakkur va madaniy taraqqiyot timsoli sifatida qadrlanadi.

Shayxzodaning milliy ongni uyg‘otishdagi o‘rni

Maqsud Shayxzoda o‘z asarlarida o‘zbek xalqining tarixiy qahramonlarini ulug‘lab, milliy o‘zlikni anglatuvchi obrazlarni yaratdi. Uning **"Jaloliddin Manguberdi"**, **"Mirzo Ulug‘bek"**, **"Alisher Navoiy"** kabi tarixiy dramalari milliy g‘ururni uyg‘otishda beqiyos ahamiyatga ega bo‘ldi.

Bu asarlarda Shayxzoda shaxsiy jasorat, vatanparvarlik va adolat uchun kurashish kabi qadriyatlarni asosiy g‘oya sifatida ilgari surdi. Tarixiy qahramonlar hayoti orqali u yosh avlodga faxr va iftixor tuyg‘usini singdirdi.

Adabiy yuksalish va Shayxzoda mahorati

Maqsud Shayxzoda o‘zbek adabiyotining badiiy imkoniyatlarini kengaytirgan adibdir. U dramatik asarlarda hayotiy haqiqatni teran badiiy ifodalash, tarix va zamon ruhi uyg‘unligini yaratishda katta yutuqlarga erishdi.

Shuningdek, Shayxzoda jahon adabiyoti durdonalarini o‘zbek tiliga mahorat bilan tarjima qildi. Shekspir, Pushkin, Shiller kabi adiblarning asarlari Shayxzoda tarjimasida o‘zbek o‘quvchisiga manzur bo‘ldi. Bu ishlar orqali u G‘arb va Sharq adabiy madaniyatini bog‘lovchi mustahkam ko‘prik vazifasini bajardi.

Shayxzoda asarlarida vatanparvarlik va adolatparvarlik

Shayxzodaning asarlari vatanparvarlik ruhiga to‘la. U millat sha’ni va erki uchun kurashgan tarixiy shaxslar hayotini tasvirlar ekan, zamon va sharoit o‘zgarishidan qat’i nazar, or-nomus, vijdon va adolat uchun kurashish zarurligini ta’kidladi.

Masalan, **"Jaloliddin Manguberdi"** dramasida yurtini tashqi dushmanlardan himoya qilgan qahramon obrazi orqali adib vatan uchun jonini fido qilish fikrini ilgari suradi. Bu asarlar nafaqat tarixiy xotirani uyg‘otdi, balki zamonaviy vatanparvarlik ruhi shakllanishiga ham xizmat qildi.

Milliy uyg‘onish va ma’naviy qadriyatlar

Maqsud Shayxzoda ijodining asosiy yo‘nalishlaridan biri — milliy uyg‘onish va ma’naviy qadriyatlarni targ‘ib qilishdir. U asarlarida ilm-ma’rifatning, adolat va haqiqatning muhimligini, millat kelajagi uchun ma’naviy boyliklarning zarurligini doimo uqtirib bordi.

Shayxzoda nafaqat o‘z asarlarida, balki butun hayoti va ijodi bilan milliy uyg‘onish g‘oyalarining faol tashuvchisi bo‘ldi.

Xulosa

Maqsud Shayxzoda o‘zbek xalqining milliy g‘ururini, tarixiy xotirasini va ma’naviy boyligini ulug‘lagan ulug‘ adibdir. Uning ijodi o‘zbek adabiyotini yuksak badiiy darajaga ko‘tardi, millatning or-nomusi va mustaqillik tuyg‘usini mustahkamlashga xizmat qildi. Bugungi kunda ham Shayxzoda asarlari xalqimizga faxr, or-nomus va adolat tuyg‘ularini singdirishda o‘z ahamiyatini saqlab qolmoqda. U millat g‘ururi va adabiy yuksalishning porloq ramzi sifatida tarixda o‘z o‘rnini mustahkam egalladi.

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CLASSIFICATION OF INNOVATIVE METHODS IN EDUCATION AND SPECIAL LAWS OF TEACHING

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Annotatsiya: Ushbu maqola ta'limda qo'llaniladigan innovatsion metodlar va o'qitishning maxsus qonuniyatlari haqida batafsil tahlil qiladi. Innovatsion metodlar o'quvchilarning bilim olish jarayonini yanada samarali qilish, ularning faolligini oshirish va ta'limda shaxsiylashtirishga imkon beradi. Maqolada interaktiv metodlar, loyiha asosidagi ta'lim, masofaviy ta'lim, simulyatsiya va ro'l o'ynash metodlari, multimedia texnologiyalarining qo'llanilishi kabi zamonaviy pedagogik yondashuvlar ko'rib chiqilgan. O'qitishning maxsus qonuniyatlari, shu jumladan o'quvchilarning faol ishtiroki, motivatsiya va individual xususiyatlarni hisobga olish ta'lim samaradorligini oshirishga yordam beradi.

Kalit so'zlar: Innovatsion metodlar, Ta'lim metodlari, Interaktiv metodlar, Loyiha asosidagi ta'lim, Masofaviy ta'lim, Simulyatsiya, Ro'l o'ynash metodlari, Multimedia texnologiyalari, O'qitish qonuniyatlari, Motivatsiya, O'quvchi faoliyati, Shaxsiylashtirilgan ta'lim.

Annotation: This article provides a detailed analysis of the innovative methods used in education and the special laws of teaching. Innovative methods make the learning process more effective, increase student engagement, and allow for personalized education. The article discusses modern pedagogical approaches, including interactive methods, project-based learning, distance learning, simulation and role-playing methods, and the use of multimedia technologies. The special laws of teaching, such as student participation, motivation, and the consideration of individual characteristics, help enhance the effectiveness of teaching.

Keywords: Innovative methods, Teaching methods, Interactive methods, Project-based learning, Distance learning, Simulation, Role-playing methods, Multimedia technologies, Laws of teaching, Motivation, Student activity, Personalized education.

Аннотация: В данной статье представлен подробный анализ инновационных методов, используемых в образовании, и специальных закономерностей преподавания. Инновационные методы делают процесс обучения более эффективным, повышают активность студентов и позволяют адаптировать

обучение под индивидуальные потребности. В статье рассматриваются современные педагогические подходы, такие как интерактивные методы, проектное обучение, дистанционное обучение, методы симуляции и ролевых игр, а также использование мультимедийных технологий. Специальные закономерности преподавания, такие как участие студентов, мотивация и учет индивидуальных особенностей, помогают повысить эффективность обучения.
Ключевые слова: Инновационные методы, Методики преподавания, Интерактивные методы, Проектное обучение, Дистанционное обучение, Симуляция, Ролевые методы, Мультимедийные технологии, Законы преподавания, Мотивация, Активность студентов, Персонализированное обучение.

Introduction

In the contemporary educational landscape, teaching methods are constantly evolving to meet the needs of a diverse, technologically connected, and globally aware student population. As society changes, so too must the approaches to learning and instruction. One of the most significant shifts in education in recent decades has been the rise of **innovative teaching methods**. These methods aim to move beyond traditional, teacher-centered approaches by incorporating more student-centered, active, and engaging pedagogies. Innovations in education are driven by advances in technology, a deeper understanding of cognitive psychology, and a growing recognition of the importance of individualized learning.

This article explores the theoretical foundations of innovative methods, examines their classification, and discusses the special laws of teaching that ensure these methods are effective. The goal is to demonstrate how these modern techniques, when correctly implemented, can improve student outcomes, foster engagement, and create more dynamic, inclusive classrooms. We will also provide examples of how these methods are applied in practice, offering practical insight into their utility.

1. Theoretical Foundations of Innovative Methods

Innovative teaching methods are often grounded in several key educational theories that emphasize active learning, student engagement, and constructivist principles. One of the most important theories in the context of innovative methods is **constructivism**, which asserts that learners actively construct their own understanding based on

experiences and interactions. The educational theorist **Jean Piaget** argued that knowledge is not simply transmitted from teacher to student, but rather, learners build understanding through activities that challenge their thinking and help them solve real-life problems. For example, a student learning about biology might engage in a project that requires them to examine the environmental impact of human activities, rather than merely memorizing definitions.

Another influential theory is **social constructivism**, primarily developed by **Lev Vygotsky**, who emphasized the importance of social interaction in learning. Vygotsky's concept of the **Zone of Proximal Development (ZPD)** suggests that learners can achieve higher levels of understanding when they work with more knowledgeable peers or instructors. This principle has led to the development of group-based learning strategies, such as collaborative projects, peer teaching, and problem-based learning, where students learn from each other and through guided interaction.

Moreover, **experiential learning**, as proposed by **David Kolb**, emphasizes the importance of hands-on, real-world experiences in learning. For instance, in a classroom setting, students might engage in simulations or role-playing exercises that mimic real-life situations, which encourages them to apply theoretical knowledge in practical contexts.

***Example**: In an English language class, students might engage in a role-play activity where they simulate a business negotiation in English, incorporating the vocabulary and structures they have learned. This method taps into the principles of social constructivism and experiential learning, promoting language acquisition in a dynamic and engaging way.*

2. Classification of Innovative Methods

Innovative teaching methods can be broadly classified into several categories based on their pedagogical approaches. Below are key types of these methods:

Interactive Methods

Interactive methods focus on creating a two-way communication channel between the teacher and students, where students actively participate in their learning. These methods encourage discussion, collaboration, and problem solving, leading to higher engagement and retention. Examples of interactive methods include:

a) **Group Discussions**: Encouraging students to engage in debates or discussions helps them not only understand the material better but also learn to think critically and listen actively.

b) **Interactive Lectures**: Rather than the traditional one-way flow of information, interactive lectures incorporate Q\A sessions, live polling, and collaborative exercises to make the lecture more dynamic.

***Example**: In a history class, a teacher might ask students to take on different historical roles (e.g., political leaders, activists) and discuss a historical event from their perspective. This approach fosters critical thinking and empathy by encouraging students to consider different viewpoints.*

Project-Based Learning (PBL)

PBL emphasizes real-world application of knowledge through long-term projects that challenge students to solve complex problems. Students are given a central question or problem and work in groups or individually to research, plan, and present their solutions. This method promotes creativity, critical thinking, and teamwork.

***Example**: In a science class, students could design a sustainable urban garden that uses minimal water. They would research various plant species, irrigation methods, and environmental impact, then present their findings to the class.*

Simulations and Role-Playing

Simulations and role-playing involve students acting out real-world scenarios. These methods engage students in experiential learning, providing opportunities to apply knowledge in a controlled, yet dynamic, environment. For example, medical students use simulations to practice surgeries, while business students might simulate negotiations or market strategies.

***Example**: In a foreign language class, students might engage in a role-playing exercise where they pretend to be tourists and local guides, practicing language in practical, everyday situations.*

Technology-Enhanced Learning

The use of technology has revolutionized education by offering a range of tools that make learning more interactive and accessible. Examples include:

a) **Flipped Classrooms**: Students watch lectures or read material at home and engage in practical activities or discussions in class.
b) **Virtual Reality (VR)**: Students can explore historical sites, planets, or even biological processes using VR, providing immersive learning experiences.

***Example**: In a geography class, students could use Google Earth to virtually explore the geography of a different country, deepening their understanding of geography concepts.*

3. Special Laws of Teaching

Effective teaching follows several "laws" or principles that guide the educator's approach to instruction. These principles ensure that students engage meaningfully with the content and develop essential skills.

The Law of Active Participation

Students are more likely to retain and apply information when they actively engage with the material. Passive learning, such as listening to a lecture without interaction, often leads to limited comprehension. Active participation can take many forms, such as group work, hands-on activities, or discussions.

***Example**: In a mathematics class, instead of simply explaining a formula, the teacher could ask students to work through problems in small groups, encouraging them to explain their reasoning to one another.*

The Law of Individualization

Each student is unique, with varying strengths, learning styles, and needs. The law of individualization suggests that teaching should be adaptable to accommodate these differences, allowing all students to progress at their own pace. Differentiated instruction, where teachers use a variety of materials and strategies to address different learning styles, is key to this approach.

***Example**: In a language class, a teacher might provide visual learners with charts and diagrams, while offering auditory learners podcasts or discussions, and kinesthetic learners activities that involve movement.*

The Law of Motivation

Students who are motivated are more likely to succeed. Motivation can be intrinsic (inner desire to learn) or extrinsic (rewards or praise). Effective teachers create an environment that fosters motivation through interesting lessons, positive reinforcement, and a connection to real-world applications.

***Example**: In an art class, a teacher might motivate students by having them create a project for a local exhibition, giving them a sense of purpose and external validation.*

The Law of Feedback

Feedback is crucial to the learning process. It helps students understand their progress, identify areas for improvement, and reinforce positive behavior. Constructive feedback encourages continuous growth, both academically and personally.

***Example**: After a writing assignment, a teacher might provide detailed feedback on the structure, grammar, and creativity of a student's essay, offering suggestions for improvement.*

Conclusion

Innovative methods and special laws of teaching play a significant role in improving the effectiveness of the learning process and strengthening students' knowledge. The use of innovative methods, distance learning, and multimedia technologies is transforming the education system and bringing it to a new level. Active participation, motivation, and consideration of students' individual characteristics are essential for creating an effective learning environment. Additionally, the relationship between the teacher and students, as well as communication, further enhances the effectiveness of teaching. One of the important features of today's education system is that modern pedagogical approaches and technologies help make education more engaging and effective.

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TABLE OF CONTENTS

1	ВЛИЯНИЕ ОБРАБОТКИ СЕМЯН АРБУЗА РАЗЛИЧНЫМИ ПРЕПАРАТАМИ НА КАЧЕСТВЕННЫЕ ПОКАЗАТЕЛИ ПЛОДОВ Ахмедова Муниса Абдимажитовна, Дусмуратова Саодат Исмаиловна	3-5
2	Theoretical study of the ability of two concrete layers to interact under load Shermukhamedov U., Malikov G.	6-11
3	Oila shaxs tarbiyasi va kamolotining subyekti sifatida. Azimova Nasiba Ergashovna,, Nasullayeva Zulayho	12-15
4	MODERN METHODS OF TEACHING FOREIGN LANGUAGES IN PRESCHOOL AND SCHOOL EDUCATION Esirgapov Muhiddin Nizomiddinovich, Mirzayeva Diyora, Erkaboyeva Shaxnoza, Ravshanova Marjona Jumaniyoz qizi, Mirzayeva Diyora Azamatovna	16-19
5	Переводная литература стала неотъемлемой частью национального духовного богатства узбекского народа Бойхурозов Диярбек Шерзод углы	20-23
6	Mass and composition of rails Islomov Akbar Sadulloyevich	24-26
7	STUDY OF THE PROPERTIES OF NON-WOVEN THERMALLY BONDED MATERIALS S.Patkhullayev, F.Maxammadova,, A.Abdusamatov,, Sh.Farmonov.	27-31
8	KVALIFIKATATIV SINTAKSEMALAR HAQIDA UMUMIY TUSHUNCHA Eshtemirova Nozliya Elmurod qizi	32-35
9	ОБРАЗОВАНИЕ СТРОЕНИЕ И ПРОЕКТИРОВАНИЕ УТОЧНОВОРСОВЫХ ТКАНЕЙ Умаров Жавохир Аскарович, Хамраева Сановар Атоевна, Танибердиев Фаррух Рустамович	36-41
10	Shaykhzada, his literary and critical articles Boyxurozov Diyorbek Sherzod ugli	42-46
11	Conditions for the development of next-generation technologies Abdusayidova Fotima Abduolim qizi, Egamberdiyeva Ma'suda Nodir qizi	47-50
12	The poet's work “Jaloliddin Manguberdi " from the outstanding manifestations of his literature	51-53

	Mamurova Feruza Islamovna, Boykhurozov son of Diyorbek Sherzod	
13	“O‘ZBEKISTON” she’rining tahlili. Qodirov Islomjon Iqboljon o‘g‘li	**54-56**
14	Maqsud Shayxzoda — millat g‘ururi va adabiy yuksalish ramzi Qodirov Islomjon Iqboljon o‘g‘li	**57-58**
15	CLASSIFICATION OF INNOVATIVE METHODS IN EDUCATION AND SPECIAL LAWS OF TEACHING To'xtayeva Ra`no Oybek kizi	**59-65**
	OUTLINE	**66-67**