



ISSN: 3060-4613



MAKTABGACHA
VA MAKTAB
TA'LIMI VAZIRLIGI



O'zbekiston
Milliy Pedagogika
Universiteti



№1
2026

- 13.00.00 Pedagogika fanlari
- 13.00.01 Pedagogika nazariyasi. Pedagogik ta'limotlar tarixi
- 13.00.02 Ta'lim va tarbiya nazariyasi va metodikasi (sohalar bo'yicha)
- 13.00.03 Maxsus pedagogika
- 13.00.04 Jismoniy tarbiya va sport mashg'ulotlari nazariyasi va metodikasi
- 13.00.05 Kasb-hunar ta'limi nazariyasi va metodikasi
- 13.00.06 Elektron ta'lim nazariyasi va metodikasi (ta'lim sohaları va bosqichlari bo'yicha)
- 13.00.07 Ta'limda menejment
- 13.00.08 Maktabgacha ta'lim va tarbiya nazariyasi va metodikasi
- 13.00.09 Ijtimoiy pedagogika
- 07.00.00 Tarix fanlari
- 19.00.00 Psixologiya fanlari
- 01.00.00 Fizika-matematika fanlari
- 02.00.00 Kimyo fanlari
- 03.00.00 Biologiya fanlari
- 09.00.00 Falsafa fanlari
- 10.00.00 Filologiya fanlari
- 11.00.00 Geografiya fanlari

M

MAKTABGACHA VA MAKTAB TA'LIMI

Pedagogika, psixologiya fanlariga ixtisoslashgan ilmiy jurnal



MAKTABGACHA VA MAKTAB TA'LIMI



Elektron nashr. 326 sahifa,
5-yanvar, 2026-yil.

BOSH MUHARRIR:

Karimova E'zoza Gapirjanovna – O'zbekiston Respublikasi Maktabgacha va maktab ta'limi vaziri

BOSH MUHARRIR O'RINBOSARI:

Ibragimova Gulsanam Ne'matovna – Pedagogika fanlari doktori, professor

TAHRIRIYAT KENGASHI A'ZOLARI

Ibragimov X.I. – pedagogika fanlari doktori, akademik
Shoumarov G'.B. – psixologiya fanlari doktori, akademik
Qirg'izboyev A.K. – Tarix fanlari doktori, professor
Jamoldinova O.R. – pedagogika fanlari doktori, professor
Sharipov Sh.S. – pedagogika fanlari doktori, professor
Shermuhhammadov B.Sh. – pedagogika fanlari doktori, professor
Ma'murov B.B. – pedagogika fanlari doktori, professor
Madraximova F.R. – pedagogika fanlari doktori, professor
Kalonov M.B. – iqtisodiyot fanlari doktori, professor
Nabiyev D.X. – iqtisodiyot fanlari doktori, professor
Qo'ldoshev Q. M. – iqtisodiyot fanlari doktori, professor
Ikramxanova F.I. – filologiya fanlari doktori, professor
Ismagilova F.S. – psixologiya fanlari doktori, professor (Rossiya)
Stoyuxina N.Yu. – psixologiya fanlari nomzodi, dotsent (Rossiya)
Magauova A.S. – pedagogika fanlari doktori, professor (Qozog'iston)
Rejep O'zyurek – psixologiya fanlari doktori, professor (Turkiya)
Wookyu Cha – Koreya milliy ta'lim universiteti rektori (Koreya)
Polonnikov A.A. – psixologiya fanlari nomzodi, dotsent (Belarus)
Mizayeva F. O. – Pedagogika fanlari doktori, dotsent
Baybayeva M.X. – pedagogika fanlari doktori, professor
Muxsiyeva A.T. – pedagogika fanlari doktori, professor
Aliyev B. – falsafa fanlari doktori, professor
G'afurov D. O. – falsafa fanlari doktori (Phd)
Shomurodov R.T. – iqtisodiyot fanlari nomzodi (PhD), dotsent
Mirzayeva F. O. – pedagogika fanlari doktori (DSc), dotsent
Jalilova S.X. – psixologiya fanlari nomzodi (PhD), dotsent
Bafayev M.M. – psixologiya fanlari bo'yicha falsafa doktori (PhD), dotsent
Usmonova D.I. – Samarqand iqtisodiyot va servis institute dotsenti
Saifnazarov I. – falsafa fanlari doktori, professor
Nematov Sh.E. – pedagogika fanlari nomzodi (PhD)
Tillashayxova X.A. – psixologiya fanlari nomzodi (PhD), dotsent
Yuldasheva F.I. – pedagogika fanlari bo'yicha falsafa doktori (PhD), dotsent
Doniyorov S. M. – "Yangi O'zbekiston" va "Pravda Vostoka" gazetalarini tahririyati DM bosh muharriri, O'zbekiston Respublikasida xizmat ko'rsatgan jurnalist, filologiya fanlari nomzodi (PhD)
Yuldasheva D.B. – filologiya fanlari bo'yicha falsafa (PhD) doktori, dotsent
Tangriyev A. T. – Toshkent davlat iqtisodiyot universiteti kafedra professori
Ashurov R. R. – psixologiya fanlari bo'yicha falsafa doktori (PhD), dotsent
Panjiyev M. A. – Qashqadaryo viloyati Maktabgacha va maktab ta'limi boshqarmasi boshlig'ining birinchi o'rinbosari
Xudayberganov N. A. – Xorazm Ma'mun akademiyasi Tabiiy fanlar bo'limining katta ilmiy xodimi, biologiya fanlari bo'yicha falsafa doktori (PhD)
Vaxobov Anvar Abdusattor o'g'li – Pedagogika fanlari bo'yicha falsafa doktori, dotsent

Muassis: "Tadbirkor va ishbilarmon" MChJ

Hamkorlarimiz: O'zbekiston Respublikasi Maktabgacha va maktab ta'limi vazirligi, O'zbekiston milliy pedagogika universiteti

EDITOR-IN-CHIEF:

Karimova E'zoza Gapirzhanovna – Minister of Perschool and School Education of the Republic of Uzbekistan

DEPUTY EDITOR-IN-CHIEF:

Ibragimova Gulsanam Ne'matovna – Doctor of Pedagogical Sciences, Professor

EDITORIAL BOARD MEMBERS:

Ibragimov X.I. – Doctor of Pedagogical Sciences, Academician

Shoumarov G'. B. – Doctor of Psychological Sciences, Academician

Qirg'izboyev A. K. – Doctor of Historical Sciences, Professor

Jamoldinova O.R. – Doctor of Pedagogical Sciences, Professor

Sharipov Sh.S. – Doctor of Pedagogical Sciences, Professor

Shermuhhammadov B.Sh. – Doctor of Pedagogical Sciences, Professor

Ma'murov B.B. – Doctor of Pedagogical Sciences, Professor

Madraximova F.R. – Doctor of Pedagogical Sciences, Professor

Kalonov M.B. – Doctor of Economic Sciences, Professor

Nabiyev D.X. – Doctor of Economic Sciences, Professor

Koldoshev K. M. – Doctor of Economic Sciences, Professor

Ikramxanova F.I. – Doctor of Philological Sciences, Professor

Ismagilova F.S. – Doctor of Psychological Sciences, Professor (Russia)

Stoyuxina N.Yu. – Candidate of Psychological Sciences (PhD), Associate Professor (Russia)

Magauova A.S. – Doctor of Pedagogical Sciences, Professor (Kazakhstan)

Rejep O'zyurek – Doctor of Psychological Sciences, Professor (Turkey)

Wookyu Cha – President of the National University of Education, Korea (South Korea)

Polonnikov A.A. – Candidate of Psychological Sciences (PhD), Associate Professor (Belarus)

Mizayeva F. O. – Doctor of Pedagogical Sciences, Professor

Baybayeva M.X. – Doctor of Pedagogical Sciences, Professor

Muxsiyeva A.T. – Doctor of Pedagogical Sciences, Professor

Aliyev B. – Doctor of philosophy, professor

Gafurov D. O. – Doctor of Philosophy (PhD)

Shomurodov R.T. – Candidate of Economic Sciences (PhD), Associate Professor

Mirzayeva F. O. – Doctor of Pedagogical Sciences (DSc), Associate Professor

Jalilova S.X. – Candidate of Psychological Sciences (PhD), Associate Professor

Bafayev M.M. – Doctor of Philosophy in Psychological Sciences (PhD), Associate Professor

Usmonova D.I. – Associate Professor, Samarkand Institute of Economics and Service

Saifnazarov I. – Doctor of philosophy, professor

Nematov Sh.E. – Candidate of Pedagogical Sciences (PhD)

Tillashayxova X.A. – Candidate of Psychological Sciences (PhD), Associate Professor

Yuldasheva F.I. – Doctor of Philosophy in Pedagogical Sciences (PhD), Associate Professor

Doniyorov S. M. – Editor-in-Chief of the Editorial Board of the newspapers "Yangi Uzbekiston" and "Pravda Vostoka", Honored Journalist of the Republic of Uzbekistan, Candidate of Philological Sciences (PhD)

Yuldasheva D.B. – Doctor of Philosophy (PhD) in Philological Sciences, Associate Professor

Tangriyev A.T. – is a professor of Tashkent State University of Economics

Ashurov R. R. – Doctor of Philosophy (PhD) in Psychology, Associate Professor

Panjiyev M. A. – First Deputy Head of the Department of Preschool and School Education of the Kashkadarya Region

Khudaiberganov N. A. – Senior Researcher of the Department of Natural Sciences of the Khorezm Mamun

Academy, Doctor of Philosophy (PhD) in Biological Sciences

Vakhobov Anvar Abdusattor oglu – Doctor of Philosophy in Pedagogical Sciences, Associate Professor

“Maktabgacha va maktab ta’limi” jurnali O‘zbekiston Respublikasi Oliy attestatsiya komissiyasining quyidagi qarorlariga asosan pedagogika va psixologiya fanlari bo‘yicha falsafa doktori (PhD) hamda fan doktori (DSc) ilmiy darajasiga talabgorlarning dissertatsiyalaridagi asosiy ilmiy natijalarni chop etish uchun milliy ilmiy nashrlar ro‘yxatiga kiritilgan:

Pedagogika fanlari bo‘yicha: OAK Kengashi tavsiyasi (26.08.2024-y., №11-05-4381/01) asosida:

- Ekspert kengashi (29.10.2024-y., №10)
- Rayosat qarori (31.10.2024-y., №363/5)

Psixologiya fanlari bo‘yicha: Toshkent davlat pedagogika universiteti murojaatiga asosan OAK tavsiyasi (24.04.2025-y., №11-05-2566/01):

- Ekspert kengashi (25.05.2025-y., №10)
- Rayosat qarori (08.05.2025-y., №370/5)

“Maktabgacha va maktab ta’limi”
jurnali

26.09.2023-yildan

O‘zbekiston Respublikasi Prezidenti
Administratsiyasi huzuridagi Axborot
va ommaviy kommunikatsiyalar
agentligi tomonidan **№C-5669363**
reyestr raqami tartibi bo‘yicha
ro‘yxatdan o‘tkazilgan.

Litsenziya raqami: **№136361**

MUNDARIJA

Talabalarda tolerantlikni shakllantirish zarurati va samaradorligi.....	28
Bafayev Muxiddin Muxammadovich	
Muhandislik grafikasi bo'yicha raqamli kompetensiyalarni shakllantirishda grafik dasturlardan foydalanish metodikasini yaratish	34
Axmatova Asila Akmaljon qizi	
Investigation on the Efficacy of Pedagogical Approaches in Virtual Learning	37
Burkhonova Zarafuz Qobilovna, Makhmudov Shaxboz Muzzafarovich	
The Role of Input And Interaction in Second Language Acquisition.....	40
Dilorom Poyonova	
Muhandislik yo'nalishida kartografiya fanini integratsiyalashgan holda o'qitish	45
Kazakbayeva Muxabbat Turabayevna	
Incorporation of Moocs Into the Digital Educational Framework for the Development of Professional Speech Culture.....	49
Kudrat-Zoda Kamola Alisherovna	
Pedagogical Strategies for Enhancing Students' Creative Thinking Throughout the Learning Process	52
Makhmudova Ugliy Baxtiyarovna	
Kognitiv yondashuv asosida bo'lajak o'qituvchilarning media savodxonligini rivojlantirish	57
Mirzayeva Mayramxon Zaynobiddinova	
Transformatsion yondashuv asosida bo'lajak o'qituvchilarning sun'iy intellekt savodxonligini rivojlantirish.....	61
Mirzayeva Ziyoda Uktamjonovna	
Maktabgacha yoshdagi bolalarni tanqidiy fikrlashga o'rgatish	65
Qurbonboyeva Gulnoza Mahmud qizi	
An Online Service that Integrates Up-To-Date Content From Well-Known Mooc Platforms	68
Rakhimberdiyev Rustam Abdunasirovich, Abdurahmonova Osiyo Jahongirovna	
The Fourth Phase of Distance Education: Integrated Technologies and Moocs	71
Rahimberdiyev Rustam Abdunasirovich, TaranenkoTatyana Viktorovna	
Gamifikatsiya orqali iqtidorli o'quvchilarning o'quv motivatsiyasini oshirish	74
Rustamova Manzura Mirkamolovna, Xaytbayeva Malika Qobil qizi	
Boshlang'ich ta'lim fanlarini didaktik o'yinlar orqali tushuntirish	77
Rustamova Manzura Mirkamolovna, Shomaxsudova Diyora Dilshod qizi	
O'smirlar orasida alkogolizm, giyohvandlik va toksikomaniya profilaktikasi	80
Sh. F. Mustafayeva	
Educational Physics Experiments: Methods and Didactic Strategies for Developing Critical Thinking in Students	85
Turayev Alimjan Bahriddinovich	
The Problems of Remote Learning Technology and Global Trends in University Education Development.....	88
Tursunov Begzod Sherzodovich, Shukurova Madina	
A Case Study of Humanities Disciplines Using Massive Open Online Courses as a Resource for Blended Learning.....	91
Tursunov Begzod Sherzodovich, Eshkabilov Kodirali Davlatmuratovich	
Modern Education and Training Practices for Future Dentists	94
Turumova Marjona Bahodirovna	
Kommunikativ yondashuv asosida nutqiy kompetensiyani shakllantirish.....	98
Tuxtayeva Mehriyo Shavkatovna	



Maktabgacha ta'lim jarayonida mutaxassislik fanlarini o'qitishda zamonaviy pedagogik yondashuvlar: amaliy muammolar va ularning innovatsion yechimlari	102
<i>Xabibulayeva Shaxrizoda O'ktam qizi</i>	
Maktabgacha ta'lim yo'nalishi talabalarda nutq o'stirish darslari orqali Soft Skills ko'nikmalarini rivojlantirishning nazariy pedagogik psixologik asoslari	106
<i>Xoldarova Mubina Qudratbek qizi</i>	
Maktabgacha ta'lim tashkilotlarida rivojlantiruvchi muhit va uning turlari	110
<i>Xolmirzayeva O'g'iloy Murotali qizi</i>	
Развитие компетенций студентов-биологов в изучении языков	114
<i>Абдуллаева Нигора Курбановна</i>	
Формирование интереса и повышение эффективности школьного урока физической культуры	118
<i>Мукимов Олим Эргашевич</i>	
Incorporation of Massive Open Online Courses Into the Higher Education Framework	122
<i>Rakhimberdiyev Rustam Abdunasirovich, Nasrullayev Javlonbek Tal'atjonovich</i>	
Совершенствование инновационной методики социально-педагогической деятельности будущих педагогов в полилингвальной среде с использованием искусственного интеллекта	125
<i>Хужаниязова Гузаль Юлдашевна</i>	
Bo'lajak boshlang'ich sinf o'qituvchilarining kreativ faoliyatini xalq og'zaki ijodi asosida rivojlantirish	130
<i>Abduraximova Muxabbat Allayevna</i>	
Boshlang'ich sinf matematika darslarida o'rganiladigan nostandart masalalar	133
<i>Karimova Kunduz Ruzibayevna, Yo'ldosheva Tojigul Ulug'bek qizi</i>	
Video-marketingning iste'molchilar jalb qilinishiga ta'siri: Tiktok va Youtube misolida.....	138
<i>Rustamova Ma'mura Asqar qizi</i>	
Maktabgacha yoshdagi bolalarning kognitiv jarayonlarini diagnostika qilish	141
<i>Shorustamboyeva Shahnoza Ulug'bekovna</i>	
The use of Visualization Technology as a New Trend in Teaching the English Language	144
<i>Tursunoy Ortiqova</i>	
Didaktik drama asosida kasbiy kompetensiyalarni shakllantirishda narrativ yondashuvning asosiy tushunchalari tahlili	149
<i>Xolbayeva Dildora Azizovna, Sadiyeva Shaxnoza Xusanovna</i>	
Tibbiyot oliy ta'lim muassasalarida biokimyo fanini o'qitishda work-based learning metodikasini qo'llash ..	153
<i>Mamadaliyeva Zarina Raxmat qizi</i>	
Bo'lajak shifokorlarni tibbiy amaliyotga tayyorlash metodikasini takomillashtirish.....	156
<i>Murtazayeva Nasiba Komiljonovna</i>	
Autizm spektri buzilishi bo'lgan bolalar uchun inklyuziv ta'limni tashkil etish	159
<i>Xusnidinova Saodat</i>	
Muloqot madaniyati asosida liderlik fazilatlarini shakllantirishning samarali usullari	163
<i>Djumayeva Dildora Isroilovna</i>	
Integrating Quizlet, Kahoot, and Padlet Into Vocabulary Instruction: An Experimental Study With Undergraduate Philology Students.....	167
<i>Inoyatova Umida Boxadir qizi</i>	
Advantages and Disadvantages of Teaching Students Via Competent Based Approach in Order to Improve Their Listening and Speaking in Finland	171
<i>Abdukhakimova Kamola Akmalovna, Rahmatova Mohijahon Ahmad qizi</i>	
Kimyo ta'limida iqlim o'zgarishlariga oid ilmiy ma'lumotlar asosida qaror qabul qilish kompetensiyasini rivojlantirish	175
<i>Akbarova Saidaxon Rustamovna</i>	
Tibbiyot oliy ta'limida pediatriya talabalari klinik fikrlashini rivojlantirishda muammoli ta'lim metodlarining roli.....	180
<i>Atadjanova Shaira Xalilovna, Umardulov Muxtorali Islomkulovich</i>	

Individual ta'lim muhiti asosida bo'lajak maktabgacha ta'lim tarbiyachilarini kasbiy-metodik tayyorlashni takomillashtirish.....	185
<i>Azamatova Dildora Shuxrat qizi</i>	
Boshlang'ich ta'lim-tarbiya tizimida raqamli ta'limni joriy etishning innovatsion yondashuvlari va samaradorlik omili.....	189
<i>Babayeva Dilnoz Xaydarovna</i>	
O'qish savodxonligini oshirishda xalqaro tadqiqotlarning o'rni (PISA va PIRLS)	192
<i>Barakayeva Shahnoza Fazliddin qizi</i>	
Yosh rahbarlarda boshqaruv stressining namoyon bo'lishi va boshqaruv faoliyatiga moslashuv muammolari: ta'lim tizimi sharoitida psixologik holat tahlili.....	195
<i>Djavgarova Dilfuza Shuxrat qizi</i>	
Sun'iy intellekt va katta ma'lumotlardan foydalanish asosida oliy ta'lim muassasalarida boshqaruv samaradorligini oshirish strategiyalari.....	199
<i>Duvlayeva Nozigul Xolmuxammad qizi</i>	
Enhancing English Learners' Pronunciation Through AI-Based Language Applications.....	203
<i>Egamova Munisa Khakim kizi</i>	
Maktab ta'lim tizimining dars jarayonlarida elektron qo'llanmalardan samarali foydalanish.....	208
<i>Kodirov Akbar Shuxratovich</i>	
Improving the Methodology of Teaching Biochemistry in Medical Higher Education Institutions Through Virtual Laboratory Tools	213
<i>Mamadaliyeva Zarina Rakhmat kizi</i>	
O'smirlarda kommunikativ tolerantlik muammosining nazariy-metodologik asoslari.....	218
<i>Mirsidikova Aziza Mirvohidovna</i>	
Boshlang'ich sinf o'quvchilarining sog'lom turmush tarzini tashkil etishning nazariy asoslari	221
<i>Muxtorova Xusnidaxon Abdug'oprovna</i>	
Improving the Theoretical and Methodological Foundations for Integrating Generative Artificial Intelligence Technologies Into English Language Teaching in Higher Education.....	226
<i>Nigmatova Nozimakhon Ulugbek kizi</i>	
Maktabgacha ta'lim va oila hamkorligi: zamonaviy yondashuvlar va ilmiy asoslar.....	229
<i>Omondavlatova Diyora Otabekovna</i>	
Oliy ta'lim muassasalarida iqtidorli talabalarning ilmiy va ijodiy kompetensiyalarini aniqlashga yo'naltirilgan axborot tizimini yaratish	233
<i>Ovxunov Iqboljon Abdunabiyevich, Ro'zimatova Saidaxon Abdivoxid qizi</i>	
O'quvchilarni o'zbek xalq og'zaki ijodi namunalari vositasida vatanparvarlik ruhida tarbiyalash pedagogik muammo sifatida.....	237
<i>Qodirqulov Nodirbek Hamroqul o'g'li</i>	
Oliy ta'lim tizimida talaba-qizlarning kasbiy, madaniy va kommunikativ faoliyatlarini samarali tashkil etish	242
<i>Qurbonova G. M.</i>	
Kasbiy tayyorgarlik jarayonida refleksiv yondashuvning metodologik asoslari	245
<i>Raxmatova Shaxnoza Oybek qizi</i>	
Inkluziv ta'limda pedagogik diagnostika: maxsus ehtiyojli o'quvchilarning o'quv yutuqlarini baholash	248
<i>Norqobilova Rayxona Davlatovna</i>	
Maktabgacha ta'lim tashkiloti tarbiyachilarining umummadaniy kompetensiyalarini rivojlantirish texnologiyalari.....	252
<i>Saidova Nigora Olimovna, Jo'rayeva Nilufar Rustamjon qizi</i>	
Pedagogical Strategies for Enhancing Students' Creative Thinking Throughout the Learning Process	254
<i>Shaymatova Aziza</i>	
Dasturiy-metodik majmuani ishlab chiqish bosqichlari hamda pedagogik talablar.....	259
<i>Soliyeva Gavharoy Yodgorjon qizi</i>	
Nutq kamchiliklarini bartaraf etishda maktabgacha ta'lim yoshidagi bolalarda pedagogik metod va o'yinlarning samaradorligi	265
<i>Suyarova Orzigul Sodiq qizi</i>	



Yoshlarni nikohga tayyorlashda shaxsiy omillar va psixologik yetuklik.....	269
To'xtamatova Nargizaxon Abdullayevna, Buranova Sevara Sa'dullayevna	
O'zbekiston umumiy o'rta ta'lim tizimida rahbarlarning liderlik kompetensiyalarining hozirgi holatini diagnostika qilish	273
Taylakova Dilnoza Norbekovna, Latifova Mavjuda Xurramovna	
Ta'limga o'qib tushinishni sun'iy intellekt bilan integratsiya qilish imkoniyatlari va pedagogik strategiyalari.....	276
Umarov Bahrom Norboyevich	
Talabalar mobilligi jarayonida pedagogik qo'llab-quvvatlash mexanizmlari.....	281
Xabibullayev Alimardon Xidoyatillayevich	
Bo'lajak boshlang'ich sinf o'qituvchilarni tayyorlashda kompetensiyaviy yondashuvning roli va ahamiyati.....	286
Yo'ldosheva Iqbol Bekbo'lsin qizi	
Boshlang'ich sinflarda chet tilini o'rganishning ahamiyati va undagi zamonaviy yondashuvlar	289
Yoqubjonova Mohlaroyim Abdumalik qizi	
O'smir shaxsida refleksiyani shakllanishida ota-ona munosabatlarning ta'siri	292
Yulchiboyeva Dilfuza Ergasheva	
Boshlang'ich ta'limda geymifikatsiya orqali til kompetentligini rivojlantirish.....	297
Zakirova Sohila Muxtoraliyevna, Nurmuhamedova Dilshoda Zaynobiddin qizi	
Профессиональная этика педагога высшего учебного заведения	302
Журабекова Хабиба Мадаминовна	
Ортодонтியда миотерапиya: миогимнастик дентоальвеоляр apparatlarni qo'llashning taqqoslama tavsifi	305
Tursunov Begzod Sherzodovich, Sayfulayeva Aziza Anvarovna	
Музейная педагогика на уроках воспитания в средней школе: методика включения музейных практик в процесс обучения и воспитания подростков	308
Умрихина Виктория Игоревна	
21st Century Dental Innovation Technologies: An Overview	314
Khojimurodov Burkhon Ravshanovich	
Цели и задачи педагогических систем, основанных на конструктивизме в общеобразовательных школах	317
Шарипова Шахноза Шавкат кизи	
Способы повышения мотивации учащихся при изучении русского языка.....	321
Эшонкулов Хамрокул Маматкулович	

21ST CENTURY DENTAL INNOVATION TECHNOLOGIES: AN OVERVIEW

Khojimurodov Burkhon Ravshanovich

Assistant of the Department of Prosthetic Dentistry
Samarkand State Medical University, Samarkand, Uzbekistan

ORCID: 0009-0005-2956-9414

Abstract: Dental professionals and researchers continually seek to make dental procedures easier, faster, and more effective. Innovations such as laser whitening, transparent aligners for bite correction, and dental implants are already widely used in clinical practice. The aim of this study is to examine and evaluate the most advanced dental technologies of the twenty-first century. The field is undergoing a genuine revolution, and it is expected that in the near future only those clinics and laboratories that successfully implement digital technologies and surpass traditional approaches in terms of quality will remain competitive.

Key words: digital technologies, dentistry, innovative dentistry, clinic, innovation, revolution.

Annotatsiya: Stomatologiya sohasi mutaxassisarlari va tadqiqotchilari doimiy ravishda tish davolash muolajalarini yanada oson, tez va samarali qilishga intilmoqdalar. Lazer yordamida oqartirish, tishlarni tekislash uchun shaffof elaynerlar hamda dental implantatsiya kabi innovatsion texnologiyalar allaqachon amaliyotda keng qo'llanilmoqda. Ushbu tadqiqotning maqsadi XXI asr stomatologiyasining eng ilg'or texnologiyalarini o'rganish va baholashdan iborat. Sohada chinakam inqilobiy o'zgarishlar yuz bermoqda va yaqin kelajakda faqat raqamli texnologiyalarni samarali joriy etgan hamda xizmat sifati bo'yicha an'anaviy usullardan ustun kela olgan klinika va laboratoriyalargina raqobatbardosh bo'lib qolishi kutilmoqda.

Kalit so'zlar: raqamli texnologiyalar, stomatologiya, innovatsion stomatologiya, klinika, innovatsiya, inqilob.

Аннотация: Специалисты и исследователи в области стоматологии постоянно стремятся сделать стоматологические процедуры более простыми, быстрыми и эффективными. Такие инновации, как лазерное отбеливание, прозрачные элайнеры для коррекции прикуса и дентальная имплантация, уже широко применяются на практике. Целью данного исследования является изучение и оценка передовых стоматологических технологий XXI века. В данной сфере происходит настоящая революция, и, по всей видимости, в ближайшем будущем конкурентоспособными останутся лишь те клиники и лаборатории, которые внедрят цифровые технологии на уровне, превосходящем по качеству традиционные подходы.

Ключевые слова: цифровые технологии, стоматология, инновационная стоматология, клиника, инновации, революция.

INTRODUCTION

Similar to the oral care sector, dentistry is developing rapidly. Dentistry in the twenty-first century is undergoing a profound transformation. In the near future, it is expected that only laboratories and clinics that adopt digital technologies—where these technologies surpass conventional methods in terms of quality—will be able to remain competitive. Therefore, it is essential to take a closer look at digitally advanced dentistry. The emergence of 3D technologies gave rise to the concept of “digital dentistry.” Although many patients are still uncertain about their functions, computers, milling machines, optical scanners, printers, and other modern technologies are becoming increasingly common in dental clinics. It is precisely these advanced technologies that now make it possible to treat teeth with greater comfort, speed, and quality.

LITERATURE REVIEW

Recent scholarly literature highlights a significant transformation in dentistry driven by rapid technological innovation. Researchers emphasize that digital dentistry technologies, such as CAD/CAM systems and intraoral scanners, have improved diagnostic accuracy, treatment planning, and clinical efficiency (Miyazaki



et al., 2020). Studies on artificial intelligence demonstrate its growing role in dental imaging, caries detection, and orthodontic decision-making (Schwendicke et al., 2021). Additionally, the literature indicates that 3D printing technologies have expanded possibilities in prosthodontics, implantology, and orthodontics by enabling customized and cost-effective solutions. Overall, existing research confirms that innovative dental technologies contribute to higher treatment precision, enhanced patient satisfaction, and the modernization of dental education and clinical practice.

RESEARCH METHODOLOGY

This study employs a qualitative research methodology based on a systematic review of contemporary scientific literature related to innovative dental technologies of the 21st century. Data were collected through the analysis of peer-reviewed journal articles, conference proceedings, and authoritative reports published between 2010–2025. Key sources included international databases such as Scopus, Web of Science, PubMed, and Google Scholar. The selected studies were analyzed using comparative and descriptive methods to identify major technological trends, including digital dentistry, artificial intelligence, CAD/CAM systems, 3D printing, and minimally invasive treatment techniques. The methodology focuses on synthesizing existing knowledge to provide an integrated overview of technological advancements and their impact on modern dental practice.

ANALYSIS AND RESULTS

In 1985, the Siemens company introduced the first computerized system designed for ceramic restoration. Sirona, which for a long time was the only manufacturer of computerized dental equipment, further advanced this technology. Today, a number of countries, including Russia, produce high-precision, state-of-the-art dental technologies. Digital solutions are actively applied in almost all types of dental rehabilitation, and the demand for 3D printers, optical scanners, tomographs, and shade-matching devices continues to increase annually. One of the primary advantages of digital innovation is the high quality of services provided. Patients are concerned with whether their expectations will be met and whether the cost of treatment is justified. Undoubtedly, no other approach can rival digital dentistry in terms of speed and precision of fit. Post-treatment dissatisfaction and prolonged manual crown adjustments during placement have become things of the past. Communication between the dentist and the patient is also significantly improved when a monitor is positioned next to the dental chair, allowing the patient to view a virtual model. Patients can participate in mock-up restorations, express their color preferences, and request modifications.

A significant advancement has been achieved in prosthetic (orthopedic) dentistry. The production of dental prostheses is now fully mechanized through the use of computer technologies. Researchers at Illinois Dental University in Springfield, USA, have developed a novel tooth restoration technique that may replace traditional metal and ceramic crowns. At present, dental crowns are typically manufactured either from a solid ceramic block or from a metal framework covered with a ceramic “jacket.” American scientists have introduced an innovative method for producing synthetic diamonds of various shapes, colors, and strengths. This technology makes it possible to create diamonds that are dozens of times stronger than conventional ceramic materials. These diamond-based crowns can be produced in any desired color and level of transparency, including fully translucent forms.

For several years, researchers have been developing vaccines aimed at preventing dental caries. Within the next seven years, five vaccine variants are expected to become available for testing. All of these vaccines are designed to suppress *Streptococcus mutans*, a bacterium that plays a major role in the development of dental caries. These bacteria, which constantly inhabit the oral cavity, produce lactic acid that erodes tooth enamel and leads to cavity formation. In addition, they contribute to inflammatory processes and the development of dental calculus (tartar). British scientists have developed a vaccine containing antibodies against this bacterium. The vaccine functions according to a well-established immunological principle: antibodies bind to pathogens and neutralize them. Because dental caries develops slowly and observable therapeutic effects require time, clinical trials are expected to last at least five years.

CONCLUSION

Dentistry in the twenty-first century is advancing rapidly. Innovative solutions frequently elevate the standard of patient care to a new level. Today, visitors to dental clinics experience less fear of pain, place greater trust in their dentists, and participate more regularly in preventive care, as they can clearly observe tangible benefits. Consequently, digital technologies continue to evolve and improve, providing dentists with increasingly advanced and effective methods for patient treatment.



References:

1. Makhmudovna, T. M., et al. The course of malformation and corneal erosion in tuberculosis patients. Open Access Repository, 2023, vol. 4, no. 03, pp. 60–66.
2. Qobilovna, B. Z., & Nodirovich, E. A. Evaluation of orthopedic treatment with removable dental prostheses for patients with paired pathology. Spectrum Journal of Innovation, Reforms and Development, 2023, vol. 11, pp. 95–101.
3. Anvarovich, E. S., & Qobilovna, B. Z. Influence of different types of retraction threads on the degree of gingival recession. Spectrum Journal of Innovation, Reforms and Development, 2023, vol. 11, pp. 84–86.
4. Tohirovna, M. L., & Qobilovna, B. Z. Optimization of complex treatment methods for inflammatory periodontal diseases. Eurasian Research Bulletin, 2023, vol. 17, pp. 138–143.
5. Shoxrux, S., Shoxrux, I., & Faxriddin, C. Prevention and treatment of oral infections in denture wearers. International Journal of Early Childhood Special Education, 2022, vol. 14, no. 4.
6. Bakhtiyorovna, M. U. Causes of removable denture breakage and allergic reactions. Spectrum Journal of Innovation, Reforms and Development, 2022, vol. 10, pp. 374–377.
7. Makhmudova, U. B. The effectiveness of the use of parapulpal pins (PPP) when restoring defects in the crown part of the frontal teeth. Asian Journal of Pharmaceutical and Biological Research, 2022, vol. 11, no. 2.

- 
- 13.00.00 Pedagogika fanlari
 - 13.00.01 Pedagogika nazariyasi. Pedagogik ta'limotlar tarixi
 - 13.00.02 Ta'lim va tarbiya nazariyasi va metodikasi (sohalar bo'yicha)
 - 13.00.03 Maxsus pedagogika
 - 13.00.04 Jismoniy tarbiya va sport mashg'ulotlari nazariyasi va metodikasi
 - 13.00.05 Kasb-hunar ta'limi nazariyasi va metodikasi
 - 13.00.06 Elektron ta'lim nazariyasi va metodikasi (ta'lim sohaları va bosqichlari bo'yicha)
 - 13.00.07 Ta'limda menejment
 - 13.00.08 Maktabgacha ta'lim va tarbiya nazariyasi va metodikasi
 - 13.00.09 Ijtimoiy pedagogika
 - 07.00.00 Tarix fanlari
 - 19.00.00 Psixologiya fanlari
 - 01.00.00 Fizika-matematika fanlari
 - 02.00.00 Kimyo fanlari
 - 03.00.00 Biologiya fanlari
 - 09.00.00 Falsafa fanlari
 - 10.00.00 Filologiya fanlari
 - 11.00.00 Geografiya fanlari



MAKTABGACHA VA MAKTAB TA'LIMI

Mas'ul muharrir: Ramzidin Ashurov

Ingliz tili muharriri: Murod Xoliyorov

Musahhih: Alibek Zokirov

Sahifalovchi va dizayner: Iskandar Islomov

2026. №1

© Materiallar ko'chirib bosilganda "Maktabgacha va maktab ta'limi" jurnali manba sifatida ko'rsatilishi shart. Jurnalda bosilgan material va reklamalardagi dalillarning aniqligiga mualliflar ma'sul. Tahririyat fikri har vaqt ham mualliflar fikriga mos kelamasligi mumkin. Tahririyatga yuborilgan materiallar qaytarilmaydi.

"Maktabgacha va maktab ta'limi" jurnali 26.09.2023-yildan O'zbekiston Respublikasi Prezidenti Adminstratsiyasi huzuridagi Axborot va ommaviy kommunikatsiyalar agentligi tomonidan №C-5669363 reyestr raqami tartibi bo'yicha ro'yxatdan o'tkazilgan.
Litsenziya raqami: № 136361.

Manzilimiz: Toshkent shahar, Yunusobod tumani
19-mavze, 17-uy.