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Tashkent International University of Education
Turin Polytechnic University in Tashkent

PROCEEDINGS

of the MMIT'25 International Conference

TA'LIMNING ZAMONAVIY USULLARI VA
INNOVATSION TEXNOLOGIYALAR

MODERN METHODS AND INNOVATION
TECHNOLOGIES IN EDUCATION

СОВРЕМЕННЫЕ МЕТОДЫ И
ИННОВАЦИОННЫЕ ТЕХНОЛОГИИ
В ОБРАЗОВАНИИ

29 May 2025, Tashkent, Uzbekistan

MAQOLALAR TO'PLAMI
СБОРНИК СТАТЕЙ



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**Современные методы и инновационные технологии в
образовании**

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ОГЛАВЛЕНИЕ

Организация образовательного процесса с интеграцией дуального образования и инновационных технологий.....	8
Modern Approaches to Educational Process Organization: Integration of Dual Education and Innovative Technologies	8
Setting up cloud based shared ARMv8 machine for Computer Architecture Education	15
The Working Principle and Polarization Curve of Hydrogen Trucks.....	18
Педагогическая компаративистика в свете глобальных перемен.....	27
Comparative pedagogy in the context of global changes.....	27
Об одной модели использования STEM методологии при организации учебного процесса.....	30
About one model of using STEAM methodology in the organization of the educational process	30
Management Innovation: Shaping the future of Business Management.....	35
O'zbekiston Respublikasi davlat boshqaruv faoliyatida raqamli texnologiyalarni rivojlantirishning huquqiy va amaliy asoslari.....	38
Legal and practical foundations for the development of digital technologies in the activities of public administration of the Republic of Uzbekistan.....	38
LMS - ta'lim jarayonini boshqarish tizimida sun'iy intellekt qo'llanilish.....	46
Application of artificial intelligence in the learning management system LMS	46
Руководитель как лидер профессионального педагогического сообщества	50
The head as the leader of the professional pedagogical community	50
Universitetlardagi tadqiqot va ishlanmalarning ta'lim sifatiga ta'siri.....	54
Impact of university research and development on the quality of education	54
Boshqaruv samaradiligini oshirishda ta'lim texnologiyalarining roli	60
The role of educational technologies in improving management effectiveness.....	60
Meva brendi pozitsiyasini shakllantirish yo'nalishlari.....	66
Directions for the formation of a fruit brand position	66
Raqamli davrda kitob savdosi: online platformalarning o'rni va afzalliklari.....	68
Book trade in the digital age: the role and advantages of online platforms	68
"Smart home" aqlli uy markaziy boshqaruv tizimida sun'iy ong va Liveness detection texnologiyalari integratsiyasi	72
Integration of Artificial Intelligence and Liveness Detection Technologies in the Central Control System of "Smart Home"	72
Tarmoq xavfsizligini ta'minlashda marshrutlash algoritmlari va protokollari.....	76
Routing algorithms and protocols for ensuring network security	76
Protokollar yordamida VPN tarmoqning xavfsizligini ta'minlash.....	79
VPN network security with protocols	79
Ethics and Education in the Context of Karl Popper's Philosophy.....	82
Mustaqil trayektoriyali obyektlarni qayta identifikatsiyalash masalasi	85
Re-identification problem for objects with independent trajectories	85

Belgilangan hududda rfid teglarining koordinatalarini aniqlash usullari tahlili	89
Analysis of methods for determining the coordinates of rfid tags in the designated area.....	89
O'quv auditoriyalarida shaxslarning holatini chuqur o'rganish orqali baholash uchun dataset yaratish	92
Creating a dataset to evaluate the condition of individuals in educational classrooms through in-depth study	92
Improving Critical Thinking Through Effective Argumentation.....	97
Oliy ta'lim tashkilotlarida masofaviy va an'anaviy ta'lim shakllarida o'quv jarayonlarini boshqarish axborot tizimi modellari	99
Models of the information system for managing educational processes in distance and traditional forms of education in higher educational institutions.	99
Oliy ta'lim tashkilotlarida o'quv jarayoniga innovatsion texnologiyalarni tatbiq etish muammolari .	102
Problems of introducing innovative technologies into the educational process in higher educational institutions.....	102
Bridging pedagogical innovation and practice: a literature review on ict adoption in higher education	105
The Evolution of Digital Payments and Its Impact on Financial Inclusion	112
Sustainable groundwater management - problems and scientific tools.....	116
Doimiy suv berishda yer osti suvlari sathining o'zgarishini modellashtirish.....	119
Modeling the change in groundwater level under constant water supply	119
Suv nasoslar orqali yarim qurg'oqchil hududlarda sug'orish amaliyotlarini uzluksiz olib borish.....	125
Continuous implementation of irrigation operations by water pumps in semi-arid regions	125
ESP32 yordamida mini server qurilmasini yaratishning usul va vositalari.....	130
Methods and tools for creating a mini server device using ESP32	130
Innovation Management: The Impact of AI on Sustainable Development and Technology in Uzbekistan.....	135
Psixodiagnostika metodikalarini psixometrika mezonlari va uning mazmun mohiyatini o'rganish....	140
Study of the criteria of psychometrics of psychodiagnostic methods and its content.....	140
Bulutli texnologiyalar asosida masofaviy ta'lim platformalarining didaktik imkoniyatlari: tahlil va rivojlantirish modeli	146
Didactic capabilities of distance learning platforms based on cloud technologies: analysis and development model	146
Obyektlarni sinflashtirishda xatoliklarni minimallashtirishga asoslangan baholarni hisoblash algoritmlari	151
Algorithms for calculating estimates based on minimizing errors in object classification	151
Obyektlarni sinflashtirishda xatoliklarni minimallashtirishga asoslangan baholarni hisoblash algoritmlari	158
Algorithms for calculating estimates based on minimizing errors in object classification	158
Hybrid Learning Models Based on ICT: Theoretical and Applied Aspects in Uzbekistan's Higher Education.....	164
Raqamli transformatsiya va kadrlar boshqaruvi: texnologiyalar inson resurslariga munosabatni qanday o'zgartirmoqda?	175

Digital transformation and human resource management: how are technologies changing the attitude towards human resources?	175
Tarix darslarida madaniyatlararo kompetensiyani shakllantirishda pedagogik texnologiyalar	179
Pedagogical technologies in the formation of intercultural competence in history lessons	179
Yashil iqtisodiyotni innovatsion boshqarishda xavf-xatarlarning ta'siri va uni kamaytirish yo'llari ..	182
Impact of risks in innovative management of the green economy and ways to reduce it	182
Ta'limda zamonaviy axborot-kommunikatsiya texnologiyalari	186
Modern information communication technologies in education	186
Sun'iy intellekt va avtomatlashtirishning muhandislik ta'limida qo'llanilishi	189
Application of artificial intelligence and automation in engineering education	189
Xalqaro moliya munosabatlarini rivojlantirishda raqamli texnologiyalardan foydalanish istiqbollari	191
Prospects for the use of digital technologies in the development of international financial relations ..	191
Mathematics in the Treatise by Baha ad-Din al-Amili "The Essence of Arithmetic", his Contemporaries and Followers.....	196
Aerodinamik tahlilda sun'iy intellekt va uch karrali integralning integratsiyasi	204
Integration of artificial intelligence and triple integral in aerodynamic analysis	204
The impact of information technologies and the digital economy on economic development	209
The state of the local internet commerce market and the importance of its development	213
Digital diplomacy and its role in the development of small and medium-sized innovative entrepreneurship in the Republic of Uzbekistan	216
Zamonaviy ta'limda gadjetlarning roli.....	220
The role of gadgets in modern education	220
Системный подход в управлении госпитальной школой	223
A systematic approach to hospital school management.....	223
Школа – мастерская гуманности	227
School – workshop of humanity.....	227
Sun'iy intellekt ilovalarining ta'lim jarayonida foydalanilishi	229
Use of artificial intelligence applications in the educational process.....	229
Совершенствование речевой компетенции студентов филологических направлений при помощи дидактических игр.....	233
Enhancing the Speech Competence of Philology Students through Didactic Games	233
ИИ и разработчики: деградация умений или рост эффективности?	236
AI and developers: degradation of skills or increased efficiency?.....	236
Лидерство и стиль управления: как выбрать эффективную стратегию	244
Leadership and Management Style: How to Choose an Effective Strategy.....	244
Модели управления качеством образования в Узбекистане и Сингапуре	248
Educational systems of Uzbekistan and Singapore: historical and contemporary contexts.....	248
Влияние бихевиористских методов на формирование учебной дисциплины.....	255
The influence of behavioral methods on the formation of academic discipline.....	255

ИИ и разработчики: деградация умений или рост эффективности?	258
The Mathematical Legacy of Baha al-Din al-Amili: An Analysis of Problems from the Treatise “Khulasat al-Hisab” (The Essence of Arithmetic)	258
Применение STEAM –подхода в преподавании управленческих дисциплин	262
The use of the STEAM approach in teaching management disciplines	262
Новые ориентиры HR-менеджмента в условиях развития зелёной экономики.....	265
New guidelines for HR management in the context of the development of the green economy	265
Анализ теории обучения Джона Дьюи в прагматизме и экзистенциализме	268
Analyzing John Dewey's learning theory in pragmatism and existentialism	268
Роль искусственного интеллекта в развитии мировой экономики.....	271
The role of artificial intelligence in the development of the global economy	271
Использование мультимедийных средств в учебном процессе.....	275
The use of multimedia tools in the educational process.....	275
Сравнительный анализ методов оценивания в истории педагогики.....	278
Comparative analysis of assessment methods in the history of pedagogy	278
Практическое применение когнитивистской теории обучения.....	283
Practical application of cognitive learning theory.....	283
Морфологический анализ каракалпакского языка с помощью нейронных сетей	285
Morphological analysis of the Karakalpak language using neural networks	285
Научно-методические подходы к урокам физической культуры в условиях инклюзивного образования.....	289
Scientific-methodological approaches to physical education lessons in inclusive education	289
Об одной модели модернизации учебного процесса	291
About one model of modernization of the educational process	291
Современные информационно-коммуникационные технологии в образовании: опыт Узбекистана	295
Modern information and communication technologies in education: the experience of Uzbekistan...	295
Ta’limda zamonaviy axborot-kommunikatsion texnologiyalar	298
Modern informationcom-munication technologies in education	298
Yashil iqtisodiyotga o'tishda xorijiy investitsiyalarning ahamiyati hamda rivojlanish dinamikasi: Markaziy Osiyo davlatlari misolida	301
The role of foreign investment in the transition to a green economy and development dynamics: the case of Central Asian countries	301
Будущее образования: педагогические теории на стыке истории и цифровых технологий.....	307
The Future of Education: Pedagogical Theories at the Intersection of History and Digital Technologies	307
Разработка интернет-магазина на платформе WordPress: функциональная модель и практическая реализация.....	311
Development of an Online Store on the WordPress Platform: Functional Model and Practical Implementation	311
Проект Yostate: создание онлайн-магазина одежды.....	316

Project Yostate: creating a stylish online clothing store	316
Ta'limda zamonaviy axborot-kommunikatsiya texnologiyalari va sun'iy intellekt: istiqbollar va amaliy yechimlar	321
Modern information and communication technologies in education and artificial intelligence: prospects and practical solutions.....	321
Применение метода множителей Лагранжа при нахождении условного экстремума функции двух переменных	324
Application of the Lagrange multiplier method in finding the conditional extremum of a function of two variables	324
Современные информационно-коммуникационные технологии в образовании, адаптация персонала к информатизации образовательного процесса	328
Modern information and communication technologies in education, staff adaptation to informatization of the educational process	328
Zamonaviy ta'lim, pedagogika va steam: integrativ yondashuvlarning ilmiy-asosiy tahlili	333
Scientific and basic analysis of modern education, pedagogy and steam: integrative approaches	333
Adabiyotlar ro'yxati.....	335
Tolali optik aloqa tizimlarini tadqiq qilishda qo'llaniladigan paket dasturlar tahlili	336
Analysis of package programs used in the study of fiber optic communication systems	336
GeoUtr dasturida optik kirish tarmoqlari abonentlariga xizmatlar ko'rsatish.....	340
Provision of services to subscribers of optical access networks in the GeoUtr program	340
Globallashuv sharoitida yoshlarda g'oyaviy immunitetni shakllantirishning pedagogik asoslari	345
Pedagogical foundations of the formation of ideological immunity in young people in the context of globalization.....	345
Ta'lim muassasalarini boshqarishda ustozlikning roli	349
The role of mentorship in the management of educational institutions	349

BULUTLI TEXNOLOGIYALAR ASOSIDA MASOFAVIY TA'LIM PLATFORMALARINING DIDAKTIK IMKONIYATLARI: TAHLIL VA RIVOJLANTIRISH MODEL

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Annotatsiya. Ushbu ilmiy maqolada bulutli texnologiyalar asosida yaratilgan masofaviy ta'lim platformalarining didaktik imkoniyatlari chuqur tahlil qilinadi. Ta'lim jarayonida bulutli texnologiyalarning o'рни va ahamiyati, ayniqsa, pandemiya sharoitida yuzaga kelgan o'zgarishlar kontekstida baholanadi. Masofaviy ta'lim platformalari, bulutli texnologiyalar yordamida, ta'lim jarayonini yanada samarali va qulay qilish imkonini beradi. Ushbu platformalar interaktivlik, moslashuvchanlik, individuallashtirish va ko'p foydalanuvchili muhitda ishlash kabi pedagogik afzalliklarni taqdim etadi. Interaktivlik, masalan, o'quvchilar va o'qituvchilar o'rtasida real vaqt rejimida muloqot qilish imkonini beradi, bu esa ta'lim jarayonini yanada jonli va qiziqarli qiladi. Moslashuvchanlik esa, o'quvchilarga o'z vaqtida va o'z sharoitlariga mos ravishda ta'lim olish imkonini beradi. Bu, ayniqsa, turli xil sharoitlarda o'qish va ishlashga majbur bo'lgan talabalar uchun juda muhimdir. Individuallashtirish esa, har bir o'quvchining o'ziga xos ehtiyojlari va qobiliyatlariga mos ravishda ta'lim berish imkonini yaratadi, bu esa o'quvchilarning motivatsiyasini oshiradi va ta'lim sifatini yaxshilaydi. Ushbu maqolada taklif etiladigan rivojlantirish modeli, bulutli texnologiyalarning didaktik imkoniyatlaridan samarali foydalanish uchun tavsiya etiladi. Model asosida, masofaviy ta'limni yanada samarali tashkil qilishda bulutli texnologiyalarning o'рни va ta'lim sifati uchun ahamiyati asoslab beriladi. Natijada, ta'lim jarayonida bulutli texnologiyalarni joriy etish orqali o'quvchilarning bilim olish jarayonini yanada samarali va sifatli qilish imkoniyatlari ko'rib chiqiladi. Shuningdek, maqolada bulutli texnologiyalarni qo'llash orqali ta'lim jarayonida yuzaga keladigan yangi imkoniyatlar va qiyinchiliklar ham tahlil qilinadi. Bu, o'qituvchilar va ta'lim muassasalari uchun yangi strategiyalar ishlab chiqish va ta'lim sifatini oshirishda muhim ahamiyatga ega bo'ladi. Bulutli texnologiyalar yordamida ta'lim jarayonini modernizatsiya qilish, o'quvchilarning o'z-o'zini rivojlantirishiga yordam berish va ta'lim sifatini oshirishda muhim rol o'ynaydi.

Kalit so'zlar: Bulutli texnologiyalar, masofaviy ta'lim, didaktik imkoniyatlar, ta'lim platformalari, rivojlantirish modeli, raqamli pedagogika.

DIDACTIC CAPABILITIES OF DISTANCE LEARNING PLATFORMS BASED ON CLOUD TECHNOLOGIES: ANALYSIS AND DEVELOPMENT MODEL

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Abstract. This article provides an in-depth analysis of the didactic potential of distance learning platforms built on cloud technologies. The role and importance of cloud technologies in the educational process are evaluated, particularly in the context of changes that emerged during the pandemic. Distance learning platforms, supported by cloud technologies, offer opportunities to make the educational process more efficient and convenient. These platforms provide pedagogical advantages such as interactivity, flexibility, individualization, and the ability to function in multi-user environments. Interactivity, for instance, enables real-time communication between students and teachers, making the learning process more dynamic and engaging. Flexibility allows students to study at their own pace and according to their circumstances, which is especially important for those who have to balance education and work under various conditions.

Individualization provides opportunities to tailor education according to each learner's unique needs and abilities, thereby enhancing student motivation and improving the quality of education. The development model proposed in this article is recommended for the effective use of the didactic potential of cloud technologies. Based on this model, the role of cloud technologies in organizing more efficient distance learning and their importance for the quality of education is substantiated. As a result, the possibilities for making the learning process more effective and of higher quality through the integration of cloud technologies into education are examined. Furthermore, the article also analyzes new opportunities and challenges that may arise in the educational process through the use of cloud technologies. This is of significant importance for teachers and educational institutions in developing new strategies and enhancing the quality of education. Modernizing the educational process through cloud technologies plays a crucial role in promoting students' self-development and improving the overall quality of learning.

Keywords: *cloud technologies, distance learning, didactic potential, educational platforms, development model, digital pedagogy.*

Kirish

So'nggi yillarda ta'lim tizimida raqamli transformatsiya jarayonlari tobora chuqurlashib bormoqda. Xususan, global pandemiya sharoitida masofaviy ta'limning joriy etilishi va keng ko'lamda qo'llanilishi ta'lim texnologiyalarining yangi bosqichga ko'tarilishiga sabab bo'ldi. Shu jarayonda, bulutli texnologiyalar asosida ishlovchi platformalar o'quv jarayonini tashkil etish va boshqarishda muhim rol o'ynay boshladi. Bu platformalar nafaqat o'quv resurslariga istalgan vaqtda va istalgan hududdan turib kirish imkonini beradi, balki ko'p funksiyali, interaktiv, ko'p qurilmali muhitda samarali ta'limni tashkil etish uchun yangi metodik yondashuvlarni taqozo etadi. Shu nuqtai nazardan, bulutli texnologiyalar endilikda faqat texnik infrastruktura emas, balki ta'limiy faoliyatni metodik va didaktik jihatdan takomillashtirishga xizmat qiluvchi ko'p qirrali vosita sifatida e'tirof etilmoqda. Ular yordamida o'quv jarayonining shaxsga yo'naltirilgan, moslashtirilgan va analitik jihatdan asoslangan shakllari amaliyotga joriy etilmoqda. Mazkur maqolada bulutli texnologiyalar asosida faoliyat yurituvchi ta'lim platformalarining didaktik imkoniyatlari chuqur tahlil qilinadi. Shuningdek, bu texnologiyalarni ta'lim tizimiga integratsiyalash orqali o'quv jarayonining sifatini oshirishga xizmat qiluvchi innovatsion rivojlanish modeli ishlab chiqiladi va taklif etiladi.

Adabiyotlar sharhi va metodologiya

So'nggi yillarda ta'lim jarayonida raqamli texnologiyalar, xususan, bulutli hisoblash tizimlari (cloud computing) asosidagi platformalarning qo'llanilishi ta'lim samaradorligini oshirishda muhim vosita sifatida namoyon bo'lmoqda. Bulutli texnologiyalar orqali o'quv resurslarini markazlashtirish, ularga uzluksiz kirishni ta'minlash, shaxsiylashtirilgan ta'limni yo'lga qo'yish imkoniyatlari mavjud [1],[2]. Xalqaro tadqiqotlar [2],[4] bulutli platformalarning o'qituvchi va talaba o'rtasidagi muloqotni soddalashtirish, dars jarayonlarini avtomatlashtirish, tahliliy vositalar orqali o'quv natijalarini monitoring qilish imkonini berishini ta'kidlaydi. Shuningdek, bulutli muhitda faoliyat yurituvchi ta'lim tizimlari [4] pedagogik jarayonga moslashgan bo'lib, ular orqali ta'lim jarayonini tashkil qilishda zamonaviy didaktik yondashuvlar, masalan, konstruktivizm, adaptiv ta'lim va differensial yondashuvlar samarali integratsiya qilinmoqda [5],[6]. Mahalliy kontekstda esa [1] O'zbekistonda ham pandemiya so'ng masofaviy va gibril ta'lim shakllariga ehtiyoj keskin ortganligi, bu esa bulutli texnologiyalarni joriy etish bo'yicha davlat va nodavlat ta'lim muassasalarida keng qamrovli strategiyalar ishlab chiqilishini taqozo etganini ko'rsatadi. Biroq, mavjud adabiyotlarda bulutli texnologiyalarning didaktik imkoniyatlari chuqur tahlil qilinmagan: ular asosan texnik afzalliklarga (xotira, quvvat, uzluksizlik, xarajat) urg'u beradi. Shuning uchun ushbu maqola aynan bulutli platformalarning didaktik salohiyatini baholash, tahlil qilish va takomillashtirishga qaratilgan ilmiy modelni ishlab chiqishga intiladi. [6]

Tadqiqotda quyidagi metodlardan foydalanildi:

Adabiyotlar tahlili – so'nggi 10 yillik ilmiy maqolalar va xalqaro amaliy tajriba o'rganildi.

Kontent-tahlil – Google Workspace for Education, Microsoft Teams, Moodle Cloud va boshqa bulutli platformalarning didaktik imkoniyatlari o'rganildi.

Ekspert so'rovi – 27 nafar O'zbekiston OTMLarida faoliyat yuritayotgan pedagoglar ishtirokida so'rovnoma o'tkazildi.

Model yaratish – tahlil asosida funktsional va metodologik jihatdan asoslangan rivojlantirish modeli ishlab chiqildi. [1],[2]

Natijalar va muhokama

Tadqiqotda aniqlanishicha, bulutli platformalarning quyidagi didaktik imkoniyatlari mavjud:

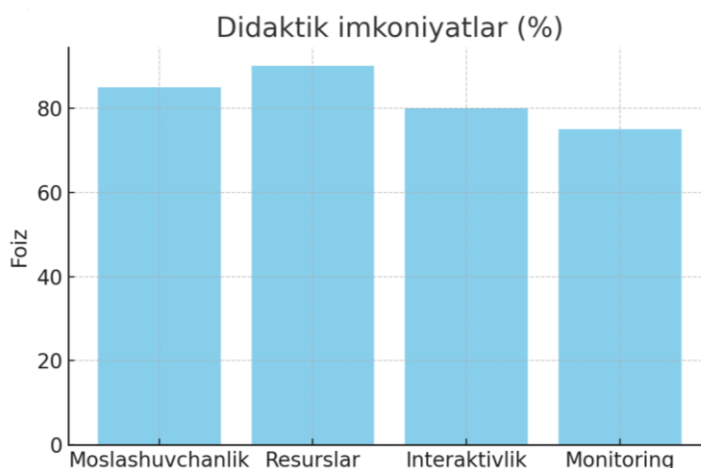
Moslashuvchan o'quv muhiti

Resurslarning doimiy mavjudligi

Interaktivlik

O'quv jarayonining avtomatlashtirilgan monitoring

Quyidagi diagrammada bulutli ta'lim platformalarining asosiy didaktik imkoniyatlari foiz ko'rsatkichlar bilan ifodalangan: [4],[5],[6]



Rasm 1. Bulutli platformalarning didaktik imkoniyatlari

Platformalar bo'yicha interaktivlik, moslashuvchanlik va resurslarga kirish imkoniyatlarining taqqoslanishi:

Bulutli platformalarning imkoniyatlari taqqoslanishi

Jadval 1

Platforma	Interaktivlik	Moslashuvchanlik	Resurslarga kirish
Moodle Cloud	Yuqori	O'rta	Doimiy
Google Classroom	O'rta	Yuqori	Cheklangan
MS Teams	Yuqori	Yuqori	Doimiy

Mavjud platformalar didaktik jihatdan turlicha imkoniyatlarga ega bo'lsada, ularning samaradorligi o'qituvchi va talabalar tomonidan to'g'ri foydalanishga bog'liq. Shu bois, platformani tanlashda texnik parametrlar bilan bir qatorda metodik yondashuvlar ham inobatga olinishi lozim. Rivojlantirilgan model bulutli platformalarni pedagogik muhitga moslashtirish orqali raqamli ta'lim samaradorligini oshirishga xizmat qiladi. [1],[2],[3],[4],[5],[6]

Xulosa

Bulutli texnologiyalarning masofaviy ta'limdagi didaktik imkoniyatlari zamonaviy raqamli pedagogikaning ajralmas qismiga aylangan. Tadqiqot natijalari shuni ko'rsatadiki, bulutli platformalar quyidagi asosiy ustunliklarga ega:

Interaktivlik: o'qituvchi va talaba o'rtasidagi muloqot real vaqt rejimida amalga oshiriladi. Ekspertlar so'roviga ko'ra, 27 nafar OTM vakillarining 81% bulutli platformalarda interaktivlikni an'anaviy tizimga nisbatan yuqori deb baholagan.

Moslashuvchanlik: ta'lim jarayonini istalgan joy va vaqtda davom ettirish imkoniyati, ayniqsa pandemiya vaqti muhim rol o'ynagan. Respondentlarning 74% Google Classroom'ni aynan moslashuvchanligi uchun foydali deb topgan

Resurslarga doimiy kirish: Moodle Cloud platformasida barcha o'quv materiallari 24/7 rejimida mavjud bo'lib, bu o'zlashtirish ko'rsatkichlariga bevosita ta'sir qiladi.

Monitoring va differensial yondashuv: avtomatlashtirilgan hisobotlar orqali o'quvchilar faoliyatini baholash va moslashtirish imkoniyati mavjud.

Taklif etilgan rivojlantirish modeli bulutli platformalarning texnologik, didaktik va pedagogik jihatlarini integratsiyalash orqali quyidagi samaralarga erishishni maqsad qiladi:

Ta'lim sifatini oshirish: individual yondashuv va raqamli monitoring asosida.

O'qituvchi malakasini rivojlantirish: raqamli savodxonlikni oshirishga yo'naltirilgan dasturlar orqali.

Barqaror raqamli muhitni shakllantirish: texnologik infratuzilma va xavfsizlikni ta'minlash orqali.

Xulosa qilib aytganda, bulutli texnologiyalarga asoslangan masofaviy ta'lim platformalari nafaqat muqobil ta'lim shakli, balki ta'lim jarayonini takomillashtiruvchi kuchli vosita sifatida qaralmoqda. Ularni strategik asosda joriy etish esa ta'lim tizimining uzluksiz rivojlanishini ta'minlaydi.

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An abstract graphic featuring a complex network of interconnected nodes and lines, resembling a molecular structure or a data network, set against a dark blue background. The nodes are represented by circles of varying sizes, and the lines are thin, light blue, creating a web-like pattern that fills the upper two-thirds of the page.

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