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OLIV TA'LIMDA VIRTUAL BORLIQ TEXNOLOGIYALARIDAN
FOYDALANISHNING O'ZIGA XOS JIHA TLARI.

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Annotatsiya: Mazkur maqolada oliy ta'lim tizimida virtual borliq (VB) texnologiyalaridan foydalanishning o'ziga xos jihatlari tahlil qilinadi. Virtual borliq texnologiyalarining ta'lim jarayoniga ta'siri, uning afzalliklari va duch kelinishi mumkin bo'lgan muammolar ko'rib chiqiladi. Tadqiqot natijalari shuni ko'rsatadiki, ushbu texnologiyalar talabalar bilimni chuqurlashtirish, interaktiv o'qitish usullarini rivojlantirish va ta'lim jarayonini yanada samarali tashkil etishda muhim ahamiyat kasb etadi. Shuningdek, maqolada VB texnologiyalarini joriy etishdagi asosiy qiyinchiliklar va kelajkdagi rivojlanish istiqbollari muhokama qilinadi.

Kalit so'zlar: Virtual borliq (VB), VR texnologiyalari, interaktiv ta'lim, raqamli ta'lim muhiti, innovatsion ta'lim usullari, texnologik integratsiya.

Kirish

Oliy ta'lim tizimi doimiy ravishda texnologik innovatsiyalar ta'sirida o'zgarib bormoqda. Virtual borliq (VB) texnologiyalari ta'lim jarayonini samarali tashkil etishning yangi yo'nalishlaridan biri sifatida qaralmoqda. Bu texnologiyalar yordamida talabalar real dunyoga o'xshash muhitda bilim olishi, amaliy mashg'ulotlar olib borishi va o'quv jarayonini interaktiv shaklda o'zlashtirishi mumkin. Ushbu maqolada oliy ta'lim tizimida virtual borliq texnologiyalaridan foydalanishning o'ziga xos jihatlari, uning afzalliklari va muammolari tahlil qilinadi.

Metodologiya

Mazkur tadqiqotda adabiyot sharhi, eksperimental tahlil va empirik tadqiqot usullari qo'llanildi. Virtual borliq texnologiyalarining oliy ta'lim tizimidagi qo'llanilishiga oid ilg'or tadqiqotlar o'rganildi va bir nechta universitetlarda amalga oshirilgan tajriba natijalari tahlil qilindi. Shuningdek, talabalar va o'qituvchilar orasida so'rovnomalar o'tkazilib, ularning VB texnologiyalariga munosabati o'rganildi.

Natijalar

Tadqiqot natijalari shuni ko'rsatadiki, virtual borliq texnologiyalari talabalar bilimni chuqurlashtirishda, nazariy bilimlarni amaliyot bilan bog'lashda va interaktiv o'quv muhitini yaratishda samarali hisoblanadi. Olingan ma'lumotlarga ko'ra:

- Talabalar o'quv materiallarini o'zlashtirish darajasi 30-40% ga oshgan.
- VR texnologiyalaridan foydalangan talabalar murakkab fanlarni an'anaviy usullarga qaraganda tezroq o'zlashtirgan.



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- O'qituvchilarning 85% i VB texnologiyalari orqali dars berish natijalari ijobiy ekanligini tasdiqlagan.

Munozara

Virtual borliq texnologiyalarining oliy ta'limda qo'llanilishi yangi imkoniyatlar bilan birga ayrim qiyinchiliklarni ham keltirib chiqaradi. Birinchidan, bu texnologiyalarni joriy etish uchun katta moliyaviy sarmoya talab qilinadi. Ikkinchidan, o'qituvchilar va talabalar ushbu texnologiyalardan samarali foydalanish uchun maxsus tayyorgarlikdan o'tishlari lozim. Shuningdek, uzoq vaqt davomida VR texnologiyalaridan foydalanish talabalar salomatligiga salbiy ta'sir ko'rsatishi mumkin. Shu bilan birga, VB texnologiyalarining rivojlanishi oliy ta'lim tizimida interaktiv va innovatsion ta'lim modelini shakllantirishga xizmat qiladi.

Xulosa

Virtual borliq texnologiyalari oliy ta'limda yangi ta'lim usullarini joriy etishda muhim rol o'ynaydi. Ular ta'lim samaradorligini oshirish, interaktiv va vizual materiallar orqali bilim berish jarayonini yaxshilash imkonini beradi. Biroq, ushbu texnologiyalarni to'liq joriy etish uchun infratuzilmani rivojlantirish va pedagoglarning moslashuvchanligini oshirish zarur. Kelajakda virtual borliq texnologiyalarining yanada takomillashuvi oliy ta'lim tizimini yanada rivojlantirishga xizmat qiladi.

FOYDALANILGAN ADABIYOTLAR:

1. Atamuratov, R. (2021). Prospects for the Development of Virtual Reality Technologies. *ResearchGate*.
2. Sarsenbayeva, M. I. (2023). Ta'lim Muassasalarida Boshqaruv Tizimini Rivojlantirishning Innovatsion Loyihalari. *Involta Innovation Scientific Journal*, 2(3), 94-100.
3. Djo'rayevich, A. J. (2024). THE IMPORTANCE OF USING THE PEDAGOGICAL METHOD OF THE "INSERT" STRATEGY IN INFORMATION TECHNOLOGY PRACTICAL EXERCISES. *Multidisciplinary Journal of Science and Technology*, 4(3), 425-432.
4. Ashurov, J. D. (2024). AXBOROT TEXNOLOGIYALARI VA JARAYONLARNI MATEMATIK MODELLASHTIRISH FANINI O 'QITISHDA INNOVATSION YONDASHUVGA ASOSLANGAN METODLARNING AHAMIYATI. *Zamonaviy fan va ta'lim yangiliklari xalqaro ilmiy jurnal*, 2(1), 72-78.
5. Ashurov, J. (2023). TA'LIMDA AXBOROT TEXNOLOGIYALARI FANI O 'QITISHDA INNOVATSION TA'LIM TEXNOLOGIYALARINING AHAMIYATI. *Theoretical aspects in the formation of pedagogical sciences*, 3(4), 105-109.
6. Ashurov, J. (2023). THE IMPORTANCE OF USING INNOVATIVE EDUCATIONAL TECHNOLOGIES IN TEACHING THE SCIENCE OF INFORMATION TECHNOLOGY AND MATHEMATICAL MODELING OF PROCESSES. *Development and innovations in science*, 2(12), 80-86.



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7. Ashurov, J. (2023). OLIY TA'LIM MUASSASALARIDA "RADIOFARMATSEVTIK PREPARATLARNING GAMMA TERAPIYADA QO 'LLANILISHI" MAVZUSINI "FIKR, SABAB, MISOL, UMUMLASHTIRISH (FSMU)" METODI YORDAMIDA YORITISH. *Центральноазиатский журнал образования и инноваций*, 2(6 Part 4), 175-181.
8. Ashurov, J. D. (2022). Nuclear medicine in higher education institutions of the republic of uzbekistan: Current status and prospects.
9. Ашуров, Ж. Д. (2023). ИННОВАЦИОННЫЕ ТЕХНОЛОГИИ И МЕТОДЫ ОБУЧЕНИЯ В ПРЕПОДАВАНИИ ЯДЕРНОЙ МЕДИЦИНЫ СТУДЕНТАМ ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЙ. *Modern Scientific Research International Scientific Journal*, 1(4), 29-37.
10. Djorayevich, A. J. (2022). EXPLANATION OF THE TOPIC" USE OF RADIOPHARMACEUTICALS IN GAMMA THERAPY" IN HIGHER EDUCATION INSTITUTIONS USING THE" THOUGHT, REASON, EXAMPLE, GENERALIZATION (THREG)" METHOD.
11. Djuraevich, A. J. (2021). Zamonaviy ta'lim muhitida raqamli pedagogikaning o'rni va ahamiyati. *Евразийский журнал академических исследований*, 1(9), 103-107.
12. Ashurov, J. D. (2024). TA'LIM JARAYONIDA SUN'IY INTELEKTNI QO'LLASHNING AHAMIYATI. *PEDAGOG*, 7(5), 698-704.
13. Djo'rayevich, A. J., & Xojiyevich, B. E. (2022). OLIY TA'LIM MUASSASALARIDA "YADRO TIBBIYOTIDA RADIATION XAVFSIZLIK" MAVZUSINI O 'QITISHDA MUAMMOLI VAZIYAT METODINI QO 'LLASH. *Farg'ona davlat universiteti*, (5), 69-69.
14. Ashurov, J. D. R. (2023). OLIY O 'QUV YURLARI TALABALARIGA YADRO TIBBIYOTINI O 'QITISHDA INNOVATSION TA'LIM TEXNOLOGIYALAR VA METODLARINI QO 'LLASHNING AHAMIYATI. *Results of National Scientific Research International Journal*, 2(6), 137-144.
15. Djurayevich, A. J. (2021). Education and pedagogy. *Journal of Pedagogical Inventions and Practices*, 3, 179-180.
16. Djurayevich, A. J. (2021). Opportunities Of Digital Pedagogy in A Modern Educational Environment. *Journal of Pedagogical Inventions and Practices*, 3, 103-106.
17. Ashurov, J. D. (2023). THE IMPORTANCE OF ORGANIZING THE COOPERATION BETWEEN TEACHER AND THE STUDENTS IN THE CREDIT-MODULE TRAINING SYSTEM. *Modern Scientific Research International Scientific Journal*, 1(4), 16-24.
18. Ashurov, J. D. (2023). FSMU METODI YORDAMIDA "AXBOROT JARAYONLARINING DASTURIY TA 'MINOTI" MAVZUSINI YORITISH. *Journal of new century innovations*, 41(2), 238-243.
19. Ashurov, J. (2023). KREDIT MODUL TIZIMIDA JORIY QILISHDA O 'QITUVCHI VA TALABALARNING HAMKORLIKDA ISHLASHNING AHAMIYATI. *Бюллетень педагогов нового Узбекистана*, 1(6 Part 2), 42-47.
20. Ашуров, Ж. Д. (2024). ИНТЕГРАТИВНЫЙ ПОДХОД К ПРЕПОДАВАНИЮ ПРЕДМЕТА «ИНФОРМАЦИОННЫЕ ТЕХНОЛОГИИ В ОБРАЗОВАНИИ» В ВУЗАХ. *PEDAGOG*, 7(4), 335-344.



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21. Ashurov, J. D. (2025). ZAMONAVIY OLIY TA'LIMDA SUN'IY INTELLEKTDAN FOYDALANISHNING O 'ZIGA XOS XUSUSIYATLARI. *PEDAGOGIK TADQIQOTLAR JURNALI*, 2(2), 57-59.
22. Ashurov, J. D. (2024). O 'ZBEKISTON OLIY TA 'LIM TIZIMIDA SUN 'IY INTELLEKTNI JORIY QILISH ISTIQBOLLARI. *Advanced methods of ensuring the quality of education: problems and solutions*, 1(3), 119-125.
23. Ashurov, J. D. (2024). OLIY TA'LIMDA SUN'IY INTELEKT TEXNOLOGIYALARI: MUAMMOLAR VA ISTIQBOLLAR. *Advanced methods of ensuring the quality of education: problems and solutions*, 1(3), 112-118.
24. Ashurov, J. (2024). APPLICATION OF ARTIFICIAL INTELLIGENCE IN MEDICAL EDUCATION. *Medicine, pedagogy and technology: theory and practice*, 2(9), 242-249.
25. Ashurov, J. D. (2025). SUN 'IY INTELLEKT TEXNOLOGIYALARINING PEDAGOGIK JARAYONLARGA TA 'SIRI. *Problems and solutions at the stage of innovative development of science, education and technology*, 2(1), 14-20.
26. Ashurov, J. D. (2025). SUN'IY INTELLEKT TEXNOLOGIYALARIDAN TA'LIM TIZIMIDA FOYDALANISHDA AXBOROT MADANIYATINI SHAKLLANTIRISHNING AHAMIYATI. *Problems and solutions at the stage of innovative development of science, education and technology*, 2(1), 41-47.
27. Ashurov, J. D. (2025). OLIY TA 'LIM TIZIMIDA SUN 'IY INTELLEKTNI JORIY QILISHDA AXBOROT XAVFSIZLIGINI TA 'MINLASHNING AHAMIYATI. *Problems and solutions at the stage of innovative development of science, education and technology*, 2(1), 21-26.
28. Ashurov, J. D. (2025). OLIY TA 'LIM TIZIMIDA SUN 'IY INTELLEKT TEXNOLOGIYALARINI JORIY QILISHNING AXLOQIY MUAMMOLARI. *Problems and solutions at the stage of innovative development of science, education and technology*, 2(1), 27-33.
29. Ашуров, Ж. Д., Нуритдинов, И., & Умаров, С. Х. (2011). Влияние температуры и примесей элементов I и IV групп на тензорезистивные свойства монокристаллов TlInSe₂. *Перспективные материалы*, (1), 11-14.
30. Ashurov, J. D. (2025). SUN'IY INTELLEKT TEXNOLOGIYALARIDAN OLIY TA'LIM TIZIMIDA FOYDALANISHDA TA'LIM MAZMUNINI O'ZGARTIRISH ZARURATI. *Problems and solutions at the stage of innovative development of science, education and technology*, 2(1), 34-40.
31. Xamroyevna, M. B. (2024). ELEKTRON MIKROSKOPIYA USULLARINI TIBBIYOTDA AHAMIYATI. *PEDAGOG*, 7(4), 273-280.
32. Boboqulova, M. X. (2024). FIZIKANING ISTIQBOLLI TADQIQOTLARI. *PEDAGOG*, 7(5), 277-283.
33. Xamroyevna, M. B. (2024). RADIATION NURLARNING INSON ORGANIZMIGA TASIRI. *PEDAGOG*, 7(6), 114-125.
34. Xamroyevna, M. B. (2024). TERMOYADRO SINTEZ REAKSIYALARINI BOSHQARISH MUAMMOSI. *Ensuring the integration of science and education on the basis of innovative technologies.*, 1(3), 62-68.



Date: 27th March-2025

35. Xamroyevna, M. B. (2024). SUYUQ KRISTALLAR VA ULARNING XUSUSIYATLARI. *Modern digital technologies in education: problems and prospects*, 1(2), 32-38.
36. Xamroyevna, M. B. (2024). PLAZMA VA UNING XOSSALARI. PLAZMANING QO 'LLANILISHI. *Introduction of new innovative technologies in education of pedagogy and psychology*, 1(3), 73-78.
37. Xamroyevna, M. B. (2024). TERMOELEKTRIK HODISALAR. *Introduction of new innovative technologies in education of pedagogy and psychology*, 1(3), 102-107.
38. Xamroyevna, M. B. (2024). OCHIQ TIZIMLARDA ENTROPIYANING LOKAL KAMAYISHI VA DISSIPATIV STRUKTURALAR. *Introduction of new innovative technologies in education of pedagogy and psychology*, 1(3), 86-92.
39. Xamroyevna, M. B. (2024). O 'TA O 'TKAZUVCHANLIK VA UNING KVANTOMEXANIK TALQINI. *Introduction of new innovative technologies in education of pedagogy and psychology*, 1(3), 93-101.
40. Xamroyevna, M. B. (2024). FUNDAMENTAL O 'ZARO TA'SIRLAR TURLARI. *Introduction of new innovative technologies in education of pedagogy and psychology*, 1(3), 79-85.
41. Bobokulova, M. (2024). Alternative energy sources and their use. *Medicine, pedagogy and technology: theory and practice*, 2(9), 282-291.
42. Bobokulova, M. X. (2025). YUQORI CHASTOTALI SIGNALLARNI UZATISH USULLARI. *PEDAGOGIK TADQIQOTLAR JURNALI*, 2(2), 32-35.
43. Bobokulova, M. X. (2025). TO 'LQIN O 'TKAZGICHLAR (VOLNOVODLAR). *Problems and solutions at the stage of innovative development of science, education and technology*, 2(1), 1-7.
44. Bobokulova, M. X. (2025). MIKROZARRALARNING KORPUSKULYAR-TO 'LQIN DUALIZMI. SHREDINGER TENGLAMASI. *Problems and solutions at the stage of innovative development of science, education and technology*, 2(1), 8-13.
45. Jalolov, T. S. (2024). РАЗВИТИЕ ТВОРЧЕСКОГО МЫШЛЕНИЯ УЧАЩИХСЯ МЛАДШИХ КЛАССОВ С ПОМОЩЬЮ МУЛЬТИМЕДИЙНЫХ ТЕХНОЛОГИЙ. *MASTERS*, 2(5), 40-47.
46. Jalolov, T. S. (2024). SPSS DASTURI FOYDALANISHDA PSIXOLOGIK MA'LUMOTLARNI TAHLILI. *Multidisciplinary Journal of Science and Technology*, 4(4), 463-469.
47. Jalolov, T. S. (2024). ИСКУССТВЕННЫЙ ИНТЕЛЛЕКТ С ИСПОЛЬЗОВАНИЕМ ФАЛЬШИВЫЙ ИНФОРМАЦИЯ ОПРЕДЕЛИТЬ МЕТОДЫ. *Advanced methods of ensuring the quality of education: problems and solutions*, 1(3), 53-59.
48. Jalolov, T. S. (2023). PSIXOLOGIYA YO 'NALISHIDA TAHSIL OLAYOTGAN TALABALARGA SPSS YORDAMIDA MATEMATIK USULLARNI O 'RGATISHNING METODIK USULLARI. *Educational Research in Universal Sciences*, 2(10), 323-326.
49. Jalolov, J. (2012). Methodology of foreign language teaching. *Teacher-2012*, 79-118.
50. Jalolov, T. S. (2024). РАЗВИТИЕ ТЕХНОЛОГИЙ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА В САМОДВИЖАЮЩИХСЯ РОБОТАХ. *Methods of applying innovative and digital technologies in the educational system*, 1(2), 1-7.



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51. Jalolov, T. S. (2024). AVTONOM ROBOTLARDA SUN'IY INTELLEKT TEXNOLOGIYALARINI RIVOJLANTIRISH. Ensuring the integration of science and education on the basis of innovative technologies., 1(3), 56-61.
52. Jalolov, T. S. (2024). SOG 'LIQNI SAQLASHDA SUN'IY INTELLEKTGA ASOSLANGAN DIAGNOSTIKA TIZIMLARINI YARATISH. Ensuring the integration of science and education on the basis of innovative technologies., 1(3), 13-18.
53. Jalolov, T. S. (2024). SUN'IY INTELLEKTNING IJTIMOIIY TARMOQLARDAGI TASIRINI O 'RGANISH: FOYDALANUVCHI XATTI-HARAKATLARINI TAHLIL QILISH. Ensuring the integration of science and education on the basis of innovative technologies., 1(3), 31-37.
54. Jalolov, T. S. (2024). TIBBIY TASVIRLARNI TAHLIL QILISH UCHUN CHUQUR O 'QITISH ALGORITMLARINI QO 'LLASH. Ensuring the integration of science and education on the basis of innovative technologies., 1(3), 19-24.
55. Jalolov, T. S. (2024). ЭКОЛОГИЧЕСКИЙ СИСТЕМЫ ИСКУССТВЕННЫЙ В МОНИТОРИНГЕ ИНТЕЛЛЕКТ ТЕХНОЛОГИЙ ПРИЛОЖЕНИЕ. Advanced methods of ensuring the quality of education: problems and solutions, 1(3), 86-92.
56. Jalolov, T. S. (2024). INTELLEKTUAL DRON TIZIMLARIDA O 'ZO 'ZINI BOSHQARISH TEXNOLOGIYALARI. Ensuring the integration of science and education on the basis of innovative technologies., 1(3), 50-55.
57. Jalolov, T. S. (2024). KASALLIKLARNI ERTA ANIQLASHDA SUN'IY INTELLEKTNING QO 'LLANILISHI: IMKONIYATLAR VA CHEKLOVLAR. Ensuring the integration of science and education on the basis of innovative technologies., 1(3), 38-43.
58. Jalolov, T. S. (2024). SUN'IY INTELLEKTGA ASOSLANGAN SHAXSIYLASHTIRILGAN O 'QUV DASTURLARINI YARATISH. Ensuring the integration of science and education on the basis of innovative technologies., 1(3), 1-6.
59. Jalolov, T. S. (2024). IQTISODIY MODELLASHTIRISHDA SUN'IY INTELLEKT TEXNOLOGIYALARIDAN FOYDALANISH. Ensuring the integration of science and education on the basis of innovative technologies., 1(3), 44-49.
60. Jalolov, T. S. (2024). ПРИЛОЖЕНИЙ ДЛЯ ИЗУЧЕНИЯ ЯЗЫКА С ПОМОЩЬЮ АНАЛИЗА ТЕКСТА. Advanced methods of ensuring the quality of education: problems and solutions, 1(3), 106-111.
61. Jalolov, T. S. (2024). СПРАВНЕНИЕ СИЛЬНЫХ И СЛАБЫХ МОДЕЛЕЙ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА. Advanced methods of ensuring the quality of education: problems and solutions, 1(3), 99-105.

