VIRTUAL REALITY AND THE PRINCIPLES OF USING VIRTUAL REALITY IN THE EDUCATIONAL PROCESS

B. Suvonov [1], A. Islomov [2]

Abstract:
In this article, the principles and perspectives of virtual reality (VR) and its application in the educational process are presented.

Key words: Virtual reality (VR), distance learning, simulations, students, virtual classrooms, education

doi: https://doi.org/10.2024/1qtbn594

Introduction

Virtual reality (VR) is a computer-generated simulation of an immersive, three-dimensional environment that users can interact with using specialized hardware, such as VR headsets or gloves. In VR, users are fully immersed in a digital environment that can simulate real-world experiences or fantastical worlds. This technology creates a sense of presence and allows users to explore and interact with virtual objects and spaces as if they were physically present.

The use of virtual reality (VR) in education enhances learning experiences by providing immersive, interactive, and engaging environments for students. It allows learners to explore and interact with virtual objects, locations, and scenarios that may be difficult or impossible to experience in real life. VR in education can be used for simulations, virtual field trips, experiential learning, skill development, and enhancing understanding of complex concepts across various subjects and disciplines.

Discussion and results

Using virtual reality (VR) in distance learning opens up exciting possibilities for immersive and interactive educational experiences. Here are some ways VR can be integrated into distance learning:

1. Virtual Field Trips: VR allows students to virtually visit historical sites, museums, or scientific locations from anywhere in the world. This immersive experience enhances learning by providing students with a firsthand perspective they wouldn't have access to otherwise.
2. Simulations and Laboratories: VR simulations can replicate real-life scenarios and environments, allowing students to practice skills in a safe and controlled environment. For example, medical students can perform virtual surgeries, engineering students can design and test prototypes, and chemistry students can conduct experiments in virtual laboratories.

[1] *Suvonov Behruz Iskandar o'g'li, Assistant of the "Computer systems" department of the University of Economics and Pedagogy*
[2] *Islomov Abram Islambay o'g'li, 2nd year student of the University of Economics and Pedagogy*

3. Interactive Lectures and Presentations: Instead of traditional lectures, instructors can use VR to create engaging and interactive presentations. Students can explore complex concepts in 3D environments, manipulate objects, and interact with multimedia content in real-time.

4. Collaborative Learning Spaces: VR platforms enable students to collaborate with peers and instructors in virtual classrooms or study groups. They can participate in discussions, work on group projects, and receive feedback from instructors in a virtual environment, fostering collaboration and teamwork skills.

5. Language Learning and Cultural Immersion: VR can transport students to different countries and cultures, allowing them to practice language skills in real-life scenarios. Students can interact with native speakers, explore cultural landmarks, and develop cross-cultural communication skills.

6. Accessibility and Inclusivity: VR can provide unique learning experiences for students with disabilities or special needs. For example, visually impaired students can navigate virtual environments using audio cues, and students with mobility impairments can participate in virtual activities without physical barriers.

7. Experiential Learning: VR enhances experiential learning by providing students with hands-on experiences that complement theoretical knowledge. Whether it's exploring the human body in anatomy classes or conducting virtual experiments in science labs, VR immerses students in the learning process and makes abstract concepts more tangible.

8. Professional Development and Training: VR can be used for professional development and training purposes, allowing employees to practice skills, undergo simulations, and receive feedback in a virtual environment. This is especially valuable for industries such as healthcare, aviation, and manufacturing, where hands-on training is essential.

By integrating VR into distance learning, educators can create more engaging, interactive, and effective learning experiences that cater to diverse learning styles and preferences. However, it's important to ensure that VR technology is accessible, affordable, and used ethically to maximize its benefits for learners.

Conclusion

Virtual reality occupies an important place among innovative methods and techniques in education. This technology allows students to immerse themselves in interactive environments, gain experience in a variety of areas, and strengthen their skills in practice. Educational programs created through virtual reality can be more accessible and effective for students, provided with scientific information. Abstract, a description of the general vision of the use of virtual reality in education, how it can be directed to education and how it can be used for students.

References:

[1]. Raxmonov, X., & Sunatov, J. R. (2022). O‘zbek tili kompyuter lingvistikasi yo ‘nalishida olib borilgan ilmiy tadqiqotlar. computer linguistics: problems, solutions, prospects, 1(1).

[2]. Sunatov, J. R. (2023, December). Ta’limda raqamli texnologiyalarning o ‘rni. in international scientific and practical conference on the topic:“Priority areas for ensuring the continuity of fine art education: problems and solutions” (Vol. 1, No. 01).

[3]. угли Сунатов, Ж. Т., & Юсупов, Ш. (2024). Анализ современных языков программирования и их возможности в образовательном процессе. Innovative Development in Educational Activities, 3(3), 73-79.

[4]. Qodirov, F., & Suvonov, B. (2023). Development Of An Automatic Ventilation System For Smart Greenhouses. Solution of social problems in management and economy, 2(13), 168-172.

[5]. Iskandar o'g'li, S. B. (2023). Tabiiy gazni qayta ishlash jarayonining intellektuallashtirilgan boshqaruvida noaniq mantiq asosidagi modeldan foydalangan holda nazorat qilish.

[6]. Abduqodirov, A. A., Yusupbekov, A. N., Suvonov, B. I., & Toshtemirov, R. T. (2022). Tabiiy gazni qayta ishlash jarayonining intellektuallashtirilgan boshqaruvida noaniq mantiq asosidagi modeldan foydalangan holda nazorat qilish. Инновационные подходы, проблемы, предложения и решения в науке и образовании, 1(1), 100-108.

[7]. Murodullo o'g'li, J. U. Application of information technologies in technical systems in engineering fields.

[8]. Khayriddinov, S. (2023). Cloud technologies as a tool for forming personal information educational environment. International Bulletin of Engineering and Technology, 3(4), 72-76.

[9].

[10]. Sunatov, J. R., Shamatova, G., & Maxmanazarov, O. (2024). Ta'limda kompyuter texnologiyasidan foydalanish (ms powerpoint amaliy dasturiy ta'minot misolida). talqin va tadqiqotlar, (28).

[11]. Suvonov, B., & Jamilova, S. (2024). Sun'iy intellektual tizimlarda noaniq mantiqning ahamiyatliligi va uning aniq mantiqdan farqi. Interpretation and researches, (4 (26)).

[12]. Khayriddinov, S., & Nodirova , F. (2024). Advanced pedagogical in improving the quality of education the significance of experiences in the educational system. Talqin Va Tadqiqotlar, (28).

[13]. Asror o'g'li, A. O., & Rahmon o'g'li, S. E. (2024). Ta'limga veb platformalarni joriy etishni tahlil qilish. golden brain, 2(8), 92-97.

[14]. Isomiddinovna, N. M. (2024). Principles of Organization and Development of Continuing Education. Web of Semantics: Journal of Interdisciplinary Science, 2(3), 285-288.

[15]. Nasiba, Q., & Berdiyeva, S. (2023). Significance and content of pedagogical diagnostic methods. central asian journal of education and computer sciences (cajecs), 2(2), 51-53.

[16]. Axtamova F. U., Yarqulova D. M. Exploring the Key Features of Four Learning Styles: A Guide to Personalized Education //Innovative Development in Educational Activities. – 2023. – Т. 2. – №. 21. – С. 27-30.