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AUGMENTED REALITY IN THE CLASSROOM: BRIDGING GAPS BETWEEN REAL AND DIGITAL

Abstract: *Augmented Reality (AR) in the classroom bridges the gap between real-world and digital experiences, enhancing traditional teaching methods. AR overlays digital information onto the physical world, offering interactive, 3D learning experiences. This technology increases student engagement, facilitates a deeper understanding of complex subjects, and caters to various learning styles. Challenges include technological accessibility and the need for teacher training in AR tools. Despite these, AR's potential in education is significant, demonstrated in its ability to bring abstract concepts to life and provide experiential learning opportunities, revolutionizing classroom dynamics.*

Keywords *Augmented Reality, Interactive Learning, 3D Educational Experiences, Student Engagement, Experiential Learning, Digital Overlays, Classroom Technology, Teacher Training, Learning Styles, Educational Innovation.*

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ДОПОЛНЕННАЯ РЕАЛЬНОСТЬ В КЛАССЕ: ПРЕОДОЛЕНИЕ РАЗРЫВА МЕЖДУ РЕАЛЬНЫМ И ЦИФРОВЫМ

Аннотация: *Дополненная реальность (AR) в классе устраняет разрыв между реальным миром и цифровым опытом, совершенствуя традиционные методы обучения. AR накладывает цифровую информацию на физический мир, предлагая интерактивные 3D-возможности обучения. Эта технология повышает вовлеченность учащихся, способствует более глубокому*

пониманию сложных предметов и подходит для различных стилей обучения. Проблемы включают технологическую доступность и необходимость обучения учителей инструментам дополненной реальности. Несмотря на это, потенциал AR в образовании значителен, что проявляется в его способности воплощать Аннотацияные концепции в жизнь и предоставлять возможности для эмпирического обучения, революционизируя динамику занятий в классе.

Ключевые слова *Дополненная реальность, Интерактивное обучение, 3D-образовательный опыт, вовлечение учащихся, Эмпирическое обучение, Цифровые наложения, Классные технологии, Подготовка учителей, Стили обучения, Образовательные инновации.*

Augmented Reality (AR) in the classroom is an innovative technology that overlays digital information onto the physical world, enhancing the learning experience. AR in education offers interactive, three-dimensional representations of content, making abstract concepts more tangible and understandable. This approach integrates digital elements with real-world environments, providing a unique and immersive learning experience. AR has the potential to transform traditional educational practices by offering more engaging, dynamic, and personalized learning opportunities. It appeals to diverse learning styles and can be applied across various subjects, making it a valuable tool in modern education.

Fundamentals of AR in Education Exploring the basic principles and technologies behind AR, including its distinction from virtual reality. The application of AR in educational settings, such as in science, history, and art classes, is examined.

Benefits of AR in Classroom Learning Analyzing the benefits of AR in education, including enhanced student engagement, improved understanding of

complex subjects, and the provision of experiential learning opportunities. The role of AR in catering to different learning styles and needs is highlighted.

Challenges in Implementing AR Discussing challenges in integrating AR into classroom settings, such as the need for access to AR technology, potential costs, and the requirement for teacher training in AR applications. Strategies to address these challenges are explored.

Impact on Teaching and Learning Examining the impact of AR on teaching methodologies and student learning outcomes. This includes how AR can complement traditional teaching methods and its effectiveness in improving conceptual understanding and retention.

Case Studies and Future Directions Presenting case studies of AR applications in classrooms and their outcomes. Future trends in AR technology in education, including potential developments and areas for further research, are discussed.

Augmented Reality in the classroom represents a significant advancement in educational technology, bridging the gap between real-world and digital experiences. By providing interactive and immersive learning opportunities, AR enhances student engagement and understanding, particularly in complex subjects. While challenges such as technological accessibility and the need for teacher training in AR tools exist, the potential of AR in education is considerable. It offers innovative ways to visualize and interact with learning content, promising to revolutionize the educational landscape.

References

1. Akçayır, M., & Akçayır, G. (2017). "Advantages and challenges associated with augmented reality for education: A systematic review of the literature". *Educational Research Review*, 20, 1-11.

2. Billinghurst, M. (2017). "Augmented Reality in Education: Current Technologies and the Potential for Education". *Prospects*, 47(1), 15-29.
3. Radu, I. (2014). "Augmented reality in education: A meta-review and cross-media analysis". *Personal and Ubiquitous Computing*, 18(6), 1533-1543.
4. Н Ю Шарибаев. Исследования температурной зависимости ширины запрещенной зоны Si и Ge с помощью модели. Физическая инженерия поверхности, 2013
5. Sharibayev Nosirjon Yusufjanovich. Temperature Dependence Of Energy States And Band Gap Broadening. Turkish Journal of Computer and Mathematics Education (TURCOMAT) 12 (4), 53-60, 2021
6. N Yu Sharibaev. Optimized Fruit Drying Method By Solar Energy. Solid State Technology 63 (6), 17410-17415, 2020
7. Sharibayev Nosir Yusupjanovich, Djurayev Sherzod Sobirjonovich, Tursunov Axrorbek Aminjon o‘g‘li, Kodirov Dilmurod Tuxtasunovich. SECUBE'S ROLE IN IMPLEMENTING BUSINESS CONTINUITY PLANS (BCM) IN VARIOUS INDUSTRIES. American Journal of Applied Science and Technology 3 (12), 37-39, 2023
8. Sharibayev Nosir Yusupjanovich, Djurayev Sherzod Sobirjonovich, Tursunov Axrorbek Aminjon o‘g‘li, Maxmudov Bekzod Mirzaaxmad o‘g‘li. EXPLORING THE POSSIBILITIES OF MANAGING INFORMATION SYSTEMS USING SECUBE. American Journal Of Social Sciences And Humanity Research 3 (12), 278-281, 2023
9. N Yu Sharibaev, Sh S Djuraev. FROM WASTE TO RESOURCE: COMPOSTING AND RECYCLING OF BIODEGRADABLE CELLOPHANE. American Journal Of Social Sciences And Humanity Research 3 (12), 285-287, 2023

10. N Yu Sharibaev, Sh S Djuraev. CHEMICAL INNOVATIONS IN PRODUCING COMPOSTABLE CELLOPHANE MATERIALS. American Journal Of Social Sciences And Humanity Research 3 (12), 288-290, 2023
11. Nosir Sharibayev, Sherzod Djurayev, Axrorbek Tursunov, Botirjon Xolmurotov. THE INTRODUCTION OF SECUBE INTO THE EDUCATIONAL SECTOR: PROSPECTS AND CHALLENGES. Евразийский журнал академических исследований 3 (12 Part 2), 33-35, 2023