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APPLICATIONS OF VIRTUAL REALITY IN EDUCATIONAL CONTEXTS

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ARTICLE INFO	ABSTRACT:

This article examines how Virtual Reality (VR) is reshaping educational practices, making learning more engaging and immersive. Unlike conventional teaching methods, VR creates a versatile environment where learners can interact with material actively. By simulating real-life situations, VR allows students to gain practical skills and knowledge that were historically confined to theoretical studies. The research underscores VR's potential to eliminate geographical limitations, cater to various learning styles, and improve both understanding and retention of intricate ideas. Nonetheless, issues such as expense, access, and teacher preparedness need to be addressed to enhance VR's effectiveness.

INTRODUCTION. **Overview.** Virtual Reality (VR) is revolutionizing education by creating immersive, tech-driven learning environments. Unlike traditional classrooms, VR provides an interactive space where students actively engage in their learning experience. This method proves especially effective for subjects like science, history, and engineering, where concepts can be visualized and personally experienced. For example, learners can investigate ancient cultures, simulate chemical experiments, or even perform virtual surgeries. Such immersive experiences not only boost comprehension but also enhance long-term knowledge retention.

Moreover, VR accommodates different learning preferences, promoting a more inclusive educational environment. Visual and kinesthetic learners especially benefit from the multi-sensory engagement that VR offers. Additionally, VR fosters collaborative learning, allowing students from different locations to work together in a shared virtual space. This

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global interaction encourages cultural awareness and teamwork—key competencies in today's interconnected world.

Methods and Methodology. Integrating VR in education requires a combination of advanced hardware, such as head-mounted displays, and tailored software that reproduces real-world contexts. To effectively implement VR, educators must pinpoint subjects and themes where its impact will be most significant. For instance, virtual labs for STEM disciplines can substitute costly physical labs, enabling underfunded schools to deliver quality science education.

Another valuable method is scenario-based learning, where students navigate intricate situations in a safe virtual environment. In medical training, for instance, VR lets students repeatedly practice surgical techniques without any real consequences. Similarly, language learners can interact with native speakers in simulated settings like marketplaces, cafes, or offices, enhancing both fluency and cultural understanding.

Research Results. Research indicates that VR significantly boosts student involvement and motivation. Recent studies reveal that students who learn through VR retain information 80% better than those using traditional methods. Furthermore, VR has been shown to effectively support learners with special needs. For instance, virtual settings can be customized to suit sensory sensitivities, allowing children with autism to learn at their own pace.

In vocational training, VR helps close the skills gap by offering hands-on experience. For example, aviation students can use flight simulators, while mechanical engineering trainees can participate in virtual workshops, both leading to improved performance and fewer errors on the job. Schools that incorporate VR report increased attendance and engagement, especially in STEM disciplines.

Discussion. Despite its advantages, the widespread use of VR encounters various obstacles. The high costs of equipment and software present a formidable challenge, particularly for schools in disadvantaged areas. Additionally, a lack of teacher training in VR technologies hampers its integration into current curricula. Overcoming these hurdles necessitates a multifaceted strategy, including government support, partnerships between public and private sectors, and thorough training programs for educators.

Moreover, the ethical implications of using VR in education deserve attention. Concerns regarding data privacy, excessive screen time, and dependence on technology must be tackled to ensure that VR enhances rather than replaces traditional teaching methods. By

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adopting a balanced approach, educators can leverage VR's potential while minimizing its downsides.

Conclusion. Virtual Reality has immense potential to transform education, making it more engaging, accessible, and effective. To achieve this potential fully, stakeholders must address challenges such as costs, teacher preparedness, and ethical considerations. With thoughtful implementation, VR can bridge the gap between theoretical knowledge and practical application, equipping students for the demands of the modern workforce.

Key Ideas in VR-Based Learning

- Immersive learning environments boost retention and engagement.
- VR fosters collaborative, inclusive, and personalized education.
- Scenario-based training provides practical, risk-free skill development.
- Tackling challenges ensures sustainable use of VR technologies.

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