



Augmented Reality Technologies In Education

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ABSTRACT

This article is devoted to the topic of using augmented reality in education. It describes the benefits of using AR technology in the learning process, including better memorization, the ability to create interactive learning materials, and the ability to explore different places and cultures without leaving the classroom. Some disadvantages of using augmented reality in education are also given.

Keywords:

immersive learning, augmented reality (AR), education, educational process, interactivity, advantages and disadvantages of AR

Immersive learning is an actual direction in the development of education, as it allows you to create conditions for a deeper understanding of the material and more effective assimilation. In the modern world, where information technologies are developing at an incredible speed, the use of immersive technologies in education is becoming increasingly necessary. This allows students to better perceive information, develop skills and competencies, and increase motivation for learning.

Immersive simulations: These are technologies that create simulations of real situations and tasks. Students can use immersive simulations to practice their skills and solve problems in a controlled environment.

There are several main categories of immersive learning approach including: virtual reality, augmented reality and mixed reality.

Augmented Reality (AR) is a technology that allows you to add virtual objects and information to the real world. Augmented reality can be used in various fields, including education.

In education, augmented reality can help students better understand and remember

material. With AR, students can see visualizations and demonstrations of complex concepts and processes. For example, students can see a 3D model of an atom or a human heart, which will help them better understand its structure and function.

AR can also be used to create interactive learning materials. For example, textbooks with AR features might have scannable images that expand into interactive demos and explanations. This can help students to better remember the material, visualize and apply their knowledge in practice.

Augmented reality can also be used to create more engaging and interesting forms of learning. For example, AR games can be used for learning and knowledge testing. This can help students learn more effectively and keep their interest in learning.

AR technology can also be used to create more realistic simulations that help students hone their practical skills. For example, medical students can use AR to practice procedures such as injections or surgeries, which will help them better prepare for real work.

Education using augmented reality also has material advantages: there will be no need to produce and use bulky posters, stands,

blackboards and other visual aids, and the cost of printing some textbooks will be reduced. A two-dimensional marker placed in front of the camera, from which all information is read and analyzed, is all that is needed to obtain the effect of augmented reality.

Now augmented reality is present on almost all devices, from smartphones to computers with built-in cameras. Therefore, taking into account the availability of gadgets for almost all segments of the population, the technical issue of using AR in education rests only on the choice and implementation of a specific, unified platform on which the entire education process will be carried out.

In addition, AR can be used to create virtual tours and journeys, allowing students to explore different places and cultures without leaving the classroom. It can also help students develop their cultural and geographic knowledge.

Despite its many benefits, augmented reality also has its drawbacks in education. Let's consider some of them:

1. Lack of infrastructure. Augmented reality requires special devices such as smartphones or tablets, as well as software. Not all students and educational institutions can afford this equipment, which may limit the availability of augmented reality in education.

2. Requires training. The effective use of augmented reality in education requires training of teachers and students, which can take time and require additional resources. In addition, not all teachers may be ready to use new technologies in their work.

3. Limited device battery life. The use of augmented reality can greatly reduce the battery life of devices, which can lead to the need for frequent charging of equipment.

4. Risk of distraction and non-concentration. Augmented reality can be too engaging and distracting, which can distract students from completing tasks and learning goals.

5. Lack of control. The possibility of using augmented reality in education may lead to the fact that students can turn to it instead of completing educational tasks and doing work.

However, despite these challenges, the use of augmented reality in education continues to grow. Many educational institutions are already integrating VR into their programs to enrich the learning process and make it more interactive and effective.

One area where AR is showing great potential is in skills training. Whether they are pilots, engineers or designers, AR allows them to have hands-on experiences in a safe and controlled environment. This allows students to improve their skills and prepare for real situations before they encounter them in the real world.

AR can also be useful for teaching social skills and developing interpersonal relationships. Students can practice communication, conflict management or collaboration in virtual scenarios where they can experiment and receive feedback without fear of making a mistake.

In conclusion, we can say that despite some limitations and shortcomings, augmented reality has a huge potential in education, and its use will only grow with the development of technology and the increase in the availability of equipment. It can help students to better understand the material, memorize it, create interactive learning materials, make learning more interesting and attractive. Modern developments and trends indicate that augmented reality will be increasingly used in education, including to improve the efficiency of feedback between a teacher and a student.

In addition, AR can help students explore different places and cultures without leaving the classroom and develop their knowledge in various fields. With the development of augmented reality technologies, its use in education can become an important tool in improving the quality of education and stimulating the learning process.

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