VR TECH

Применение в 2к17

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2 КУРС

VIRTUAL REALITY

VR (virtual reality) is created by technical means the world passed to the person through his feelings: sight, hearing, smell, touch and other.

Virtual reality simulates how the impact and response. To create convincing complex of sensations of reality computer synthesis of properties and reactions of virtual reality is made in real time.

USE OF VR IN EDUCATION

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The use of virtual reality opens up many new possibilities in training and education, which are too complex, time-consuming or expensive with the traditional approaches, if not all at the same time. There are five major advantages of applying VR technology in education.

Visibility

Using 3D graphics, can be detailed to show the chemical processes down to the atomic level. And nothing forbids to go further and to show how inside the atom is the division of the nucleus before the nuclear explosion. Virtual reality is not only able to give information about the phenomenon itself, but also to demonstrate it with any degree of detail.

USE OF VR IN EDUCATION

Security

Heart surgery, management of bullet train, space Shuttle, safety in case of fire — possible to immerse the viewer in any of these circumstances without the slightest risk to life.

Involvement

Virtual reality allows you to change scenarios, to influence the course of the experiment or to solve a math problem in a playful and understandable form. During the virtual lesson, you can see the world of the past through the eyes of a historical character, to explore the human body in the microcapsule or choose the right course by ship Magellan.

USE OF VR IN EDUCATION

Focus

A virtual world that will surround the viewer from all sides at 360 degrees, will allow to concentrate on the material and not be distracted by external stimuli.

Virtual lessons

The first-person view and the sense of his presence in the painted world is one of the main features of virtual reality. This allows you to conduct lessons entirely in virtual reality.

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However, while the use of technology and the devices themselves will not be as "perfected", there will be disadvantages and potential problems of using virtual reality in education.

Volume

Any discipline is quite extensive, which demands a lot of resources to create content for every lesson — in the form of a full course and tens and hundreds of small applications. Companies that will create such materials should be ready to develop quite a long time without the ability to recoup up to the full sets of lessons.

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Cost

In the case of distance learning load for the purchase of the virtual reality device responsibility of the user, or this device may be its phone. But educational institutions will need to purchase equipment sets for the classes will be classes, which also requires significant investment.

Functionality

Virtual reality, like any other technology, requires the use of your specific language. It is important to find the right tools to make content visual and engaging. Unfortunately, many attempts to create educational VR applications do not use all the possibilities of virtual reality and, consequently, do not perform their functions.

THE USE OF VR IN ENTERTAINMENT

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The best example of clarity, the use of virtual reality is an entertainment sphere. For example, people can participate in those or other virtual events. Or visit the cultural sites in the virtual world. They then conduct a virtual tour. And through simulation to restore the monuments that have long been destroyed. A striking example is Stonehenge, which exists in the virtual world. Even created a variety of architectural objects Dating from the Roman era, ancient Greece.

Nowadays in the world there are several centers that use virtual reality. Visiting one of the nearly ten such centers, you can walk through Ancient Egypt, to see the human body from the inside, as if having been in it.

THE USE OF VR IN MEDICINE

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The statement that virtual reality is the future, are becoming stronger. This statement is especially no one argues. It is already in use. Suffice it to recall the simulators for pilots and astronauts. And in medicine – MRI, ultrasound, three-dimensional x-ray images. The devices improve the quality of doctors. This is very serious if to consider that errors of physicians in America every year kills about 10 thousand people (data of the report of the US Institute of medicine).

THE USE OF VR IN MEDICINE

Training of health personnel

The examples given above – this is something all too familiar. But in the same field there are other, more advanced development. First of all, in the field of training. Medical College Weill Cornell (NY, USA) is a room of virtual reality in which you installed simulator for surgeons. No practice on corpses, not to mention the living patients! The system is equipped not only the graphic headset, but also a means of haptic feedback. The doctor feels mechanical effect on the organs sick. Using this simulator it is possible with much less expense to acquire the skills necessary for the successful execution of operations.

THE USE OF VR IN MEDICINE

For dentists

A similar simulation for dentists. At the University of Aachen (Germany) on the same trainer learning to do a local anesthesia. According to the scanning of tissue are modeled with the appropriate parameters. Then the system graphics and tactile feedback give the opportunity for future specialists to probe the injection site, feeling with all that is happening after each movement of the needle. And then check to see whether he was in a given nerve.

THE USE OF VR IN MEDICINE

In psychiatry

In psychiatry, virtual reality is used according to the principle "to understand the patient, it is necessary to see the world through his eyes." This program developed by Mindscape from Viscira. It is intended not only for students but also for the patient's relatives to better understand how to live a man with productive symptoms of schizophrenia: a disorder of thinking, auditory hallucinations, delusions. This is not the first VR app from Viscira . The company is working on virtual reality since 2011, creating the "to start" the simulation of age-related macular degeneration. On the display, you can see that the field of view of the patient's distorted objects and there are spots. Ophthalmologists were able to "experience" myself.

THE USE OF VR IN MEDICINE

In the operating room

Virtual reality helps not only in training but also in preparation for specific operations. For special glasses, the doctor can see three-dimensional images taken by x-ray, ultrasound or MRI. And to better plan their operations. If we are talking about surgery, it is necessary to tell and about "four -" the Da Vinci robot, with which doctors, sitting with his back to the patient for devices with 3D glasses and a joystick, make the transaction.

THE USE OF VR IN MEDICINE

Phobias and fears

At the Institute of Creative Technology (Southern California, USA), virtual reality helps veterans get rid of the post-traumatic syndrome. A case is known when one of the former commandos suffered cruelly because he was sure that he did not do everything to save his comrade. Doctors using a shooter reproduced a real scene from a life in which the patient was convinced - he did everything he could. His condition has improved significantly. In addition, virtual reality treats phobias. With the help of the program Spiderworld from HITlab people learn to overcome the panic fear of spiders. And the application SnowWorld gives an opportunity in a "winter" situation to throw snowballs in penguins. This reduces the pain in those who received burns.