



USING 3D MODELING AND ANIMATION IN EDUCATION

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Annotation: *This in the article 3D technologies in computer science and from animations to use of teaching content essence analysis done.*

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Today, the rapid development of the technology sector and the widespread adoption of information and communication technologies have led to the same rapid growth in the field of computer hardware and software, as a result of which the development and implementation of information technology has also affected the education sector. showed a secret.

In education information high level perception reach and to achieve accuracy being able to visualize as close to reality as possible is of practical importance for the formation of knowledge and skills. Naturally, the process of receiving and processing information in the educational process saves time. Learning materials are hearing, seeing , visual images and others through upon delivery: First, for teachers [1]:

- saving the time allocated for explaining the subject in the educational process;
- the teacher's work with ICT will be more reasonable;
- increase students' interest in science.

Secondly , for students:

- ability to perceive information;
- development of spatial imagination;
- increase learning motivation;
- analytical skills;
- helps systematize knowledge.

So education figurative visual representation of the object in the process or by studying the object itself or its physical model, as well as their.

It is important to use multimedia displays (electronic posters, video clips, animation, etc.), including computer (virtual) 3D images-three-dimensional models. As you know, depending on the needs of the developer model and the model as a whole, it is possible to change their location by changing the properties



as structural elements, yniy elements in space, change their appearance, use can show additional objects, etc.[2,3].

Also , static graphics, complex spatial animation, processes that occur both with the object and inside (including hidden) processes observation can From this except it not only results in a significant increase in visibility maybe the bullets during training creativity abilities to the formation impulse will be.

Thus , 3D modeling in education has become one of the modern information technologies.

As a result, the use of three-dimensional modeling in education can increase interest in learning, develop imagination and spatial thinking, and also increase the creative potential of the child as a person. Today's to the day 3D modeling technology is used in various academic subjects:

- in geography - for 3D modeling and visualization of any natural and atmospheric phenomena, terrain relief;
- in astronomy - celestial for modeling events and space bodies;
- in biology - for modeling the DNA of cells, internal organs;
- k imyo da - creating models of molecules and atoms and simulating chemical experiments;
- in physics - for modeling phenomena , physical experiments;
- in geometry - to visualize geometric objects and solve problems such as the intersection of lines and planes;
- in informatics - study of various processes through modeling, computer simulation. Information technologies allow to display various visual information in three-dimensional space.

Using 3D modeling and animation in education provides teachers with new teaching tools. These tools to help students to understand the educational material more easily, to show their identity to do helps to accelerate motivation and the acquisition of a large amount of knowledge.

Summary by doing In other words , the interactivity of 3D computer models means that you can interact with these tools through, students and teachers are given the opportunity to be active.

Based on an analysis of computer science courses by various authors, we concluded that a common approach can be identified for most of them, and it is the use of computer modeling as a tool in teaching, with an emphasis on building and learning algorithms, and introducing ideas and skills related to 3D modeling and 3D technologies in early school. it is necessary to start forming from the moment.



Only then will we, the students, create their own VR applications and 3D videos; Creating 3D projects, presentations, and later, we will prepare the ground for them to become mature experts in this process.

USED LITERATURE:

1. Freina , Laura, and Michela Ott . "A literature review on immersive virtual reality in education: state of the art and perspectives." *The International Scientific Conference eLearning and Software for Education* . Vol. 1. "Carol I" National Defense University, 2015.
2. <http://immersiveeducation.org/>
3. <http://immersivevreducation.com/>