DEVELOPMENT OF STUDENTS' KNOWLEDGE BASED ON THE USE OF 3D EDUCATIONAL TECHNOLOGIES IN THE BIOLOGY EDUCATION

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Annotation. 3 D-modeling is one of the most common areas of using information and communication technologies, not only professionals, but also new users are engaged in this work. Any modern multimedia program is not made without computer graphics. The tasks facing students are interesting and often hard to solve, which requires the improvement of educational motivation, development of logical thinking, and to identify their abilities on computer science and use creative opportunities. Therefore, it is advisable to introduce modern educational technologies in each educational process.

Key words: Virtual Technologies, three-dimensional environment, 3 D-modeling, information communication technologies, student, teacher, educational technology, continuously lim.

The technologies of virtual reality are successfully used to support decisions, including government decisions, but the term «virtual truth» is not accepted at all. Often this term is used to refer to the three-dimensional computer models of truth. «Critical history of computer graphics and animation» W. Carlson G. Briggs and S. Briesson give descriptions, they are the «three-dimensional computer simulation» and «to create an interactive three-dimensional world influence The use of computer technology, according to the description of the «virtual truth» of Bryson, according to the definition of the virtual truth and understands virtual reality and the user can work in real time. close enough. - All the time. This term was used for the first time [1]. Thus, this term previously was the term «artificial existence» and V. Gibspace.

Multimedia applications of textbooks - through information and communication technologies, which will cover educational standards and the curriculum, and contribute to students' independent study and contain video, sound, animation, tables, texts and dictionaries, Interactive electronic educational resource aimed at monitoring and strengthening knowledge, which is aimed at controlling and strengthening the main content of the subject, or includes applications to similar resources.

At the modern stage of technology, designers, architects, physicists, biologists, etc. in their projects and developments, will enjoy 3 D-technology opportunities in their projects and developments. Naturally, this innovation did not bypass the education industry, the educational process.

3 D-modeling is one of the most common areas of using information and communication technologies, not only professionals, but also new users are engaged in this work. Any modern multimedia program is not made without computer graphics. The tasks facing students are interesting and often hard to solve, which requires the improvement of educational motivation, development of logical thinking, and to identify their abilities on computer science and use creative opportunities.

3 depart information to all technical programs are activity and departence to all state levels: Lessons are at a high complexity level that contains interesting and understandable questions for students. can be conducted [2].

Use of elements of biology in the biology training 3 D modeling technology improves the practical

training of school students, which will successfully master the technical specialties. The creation of computer models is not only by deepening the space imagery of students, but also helps to develop their intellectual and creative skills in modeling.

In the Biology, computer 3 D-mod modelation opportunities are characterized by the width of the 3 D-modelation, uses the interdisciplinary relations with mathematics, physics and other subjects. Students have a complete scientific worldview, develop creative skills, to start as a future specialist Students to use the basics of 3 D modeling, which are acquired in the educational activities of their knowledge.

3 D-modeling is a teacher's creative task as a teacher is a teacher's creative task and includes the use of many pedagogical technologies in the learning process:

Use in problematic education technology helps to acquire knowledge, skills and skills that develop readiness' mental abilities;

Stratified education technology, strong students confirms their creative skills, weakened will be able to achieve training and the level of professional aspects increase;

Design technology allows students to develop individual creative skills, consciously approach to self-determination;

The research method allows students to complete their knowledge independently, to study the learned problem in depth, and to solve ways to solve it, and it is important in shaping it. This is important to determine the individual development path of each student.

Information technology that significantly affects the nature and organization of the educational process is used, as the nature of the relationship between the student and the teacher changing and part of the pedagogical features to the computer O will be held.

Without methodological training and without medical modeling, 3 D-modeling materials can be effective effective, because the coverage of those who want to engage in modeling is almost the majority, and their level of preparation is also different. The presence of detailed instructions for the implementation of training assignments given to each student allows its ability and material to effectively «boot» according to the speed of mastery of material.

Each student can demonstrate their identity. This experience applies to form forms of former, group and frontal work: Lectures, creative projects, training, competition, topic activities.

3 The assigned assignments are scheduled to be independently conducted in extra-class activities .The are designed to be performed by trailers at various preparatory levels.

3 Practical assignments in the program 3 are creative as they apply to space modeling elements. Such a session includes the use of the following methods: Checking students' synchronization, tasks, skills on computers, preparing students for design of students on computer processing. It is necessary to plan independent employment assignments, organize and coordinate students' identification.

In the lesson «3 D-modelation» lessons in the lesson «Information and communication technologies in biology» classes, students make significant changes in the body. The work is organized in the form of a group group, which allows almost every student to prove its success in discussions, joint decision, setting up the level of knowledge, independent work, and leading the ability to work, and leading the ability to manage.

In the process of implementing practical work, group members have the opportunity to provide

their own assumptions about how to model incidents and processes, and assess their strengths. In addition, the group enables the ability of the group to gain experience in dialogue, to prove its point of view, which is important in forming professional compositions of students.

The priority form that helps the formation of professional compensations is the project method, which requires students to perform the opportunity to perform knowledge independently in the resolution of knowledge and assignments. This technology allows students to solve the knowledge process more interesting using previous knowledge and skills, because of their ability to manifest themselves in practical independent activities. It is better to leave the students' ability to choose tools and techniques to solve the problem. This leads to creating a state of success and activation of training and professional activities.

In the organization of project activities, a group of students were identified involved in various competitions and scientific projects related to 3 D modeling. Students must use the knowledge they occupied by in the study of appropriate subjects. Group and individual tips are organized in addition to classes.

The results of working with the project allow 3 to determine the base skills of 3 D-modeling and the main level of use in appropriate subjects. In performing design or research work, students' independent activities are considered as a type of educational work that allows you to formally formulate and develop their independence in the process of solving practical work.

An important factor in the use of elements of D-mod modeling technology is a key factor in the successful formation of the professional composition of students.

A lot of different apps are used to create a computer graphics. Universal 3 D editors, as in the rule, contain all necessary means for modeling, animation and visuring. When choosing an app focused on the following factors: functionality of programs; Convenience for use (Intusiv Interface, etc.); availability, price.

3 D modeling is the process of creating a three-dimensional model of object. 3 D modeling function is to develop a visual volume image of the required item.

Thus, in the process of working on this experience, the acceptable conditions for use of elements of D-mod modeling technology allow students to form the professional skills of students.

Inzizorova uses 3 D-technology in biology classes, virtual 3 D breeders, animations, laboratories on the basis of 3 D technologies, conducts research in the field of the negative aspects of this technology [3].].

It is known that our teachers face very much to the problem of students or indifference in the educational process. In giving complex theoretical materials, this process is more deeply different. It is in this case that uses 3 D-technologies help and help students to improve and understand that students will learn materials.

Analysis of the results of the questionnaires and analysis of the current state of the use of 3 D-models showed that students have insufficient the level of knowledge for their personal development. This leads to a weakening of students' interest in science. The absence of knowledge activity leads to a decrease in the development. Thus, there is a discrepancy between the requirements of time and the needs of modern personality. Improving the quality of teaching and the use of 3 D-models in the education system will yield high in the effective solution of students' motivation levels.

Use of 3 D technologies:

- increase students the opportunity to direct students to scientific and research activities, helps teach the process to interest and understand;
- Each student stimulates the creative activity of each student, improves the quality of education;
- increases students' preparatory levels;
- Establishment of extracurricular activities;
- Interesting choices and events;
- Allows you to use models.
- In school education practices, visit the use of 3 D-models:
- use of complex topics and classes;
- Special technologies for the development (for example, the development of creative skills);
- Healthcall technologies (combination of training with improving health);
- Considering students' attention to the lesson, improving the acceptance of the material.

During the exchange of teachers' interactions, he stated the following statement: «We first created difficult to create 3 D paintings and videos for laboratory classes. But independently in the process, then the difficulty was eliminated with teaching students, «said the following conclusions:

The most important criteria in using the news will show readiness in the educational process, the proven system allows them to develop and implement 3 Ds of paintings, vassages and apps.

3 D-Technology implements the learning process and expands the ability to understand many areas: technology, chemistry, geography, biology, fine arts, drawing, etc. Students will improve the process of deepening and learning new knowledge obtained by students.

Virtual practical and laboratory assignments in the format, students will also be able to hold not only the theoretical materials, not only to master theoretical materials. [2]

These valuable devices will help to gain the interest in the lesson, along with the essence of the essence of the structure and function of the digestive system of the digestive system. Working with three-dimensional images is very simple. It is necessary to wear eye glass to see the entire depth and size of any model. The attention of students should be paid to the comberation of all organs of the digestive system to consider digestion in 3 d. The bite of food passes through the rival and digestion and falls into the stomach. On the path of digestion, digestion and mechanical decomposition processes with a juice.

3 D Imagination It is necessary not only to show the teacher, but to find them in a notebook, basic concepts, to control the classroom, to attract the attention of students. Separation of multi-layers to consider the cut stomach model: In the interior-layer-mucous membrane, wetting shells, as well as the mucous membrane. They serve to produce some substances, the production of enzymes and stomach juice. The middle floor is a muscle floor. Its significance is to shrink up walls, crush and mixing food. The outer layer of the stomach is called adventition or serous curtains.

The mucous membrane is in turn consists of 3: a private layer of epithelium, connective tissue and muscle floors of the mucous membrane. During the characterization of the stomach, the teacher presents the importance of each floor, a problematic question about the interaction of each floor cell. Such questions are easy for students, and each cell of the stomach is having the size, using the stomach 3 D model, using the stomach 3 D model.

From the stomach model, the teacher uses to check homework and strengthen the past material. Thus, in response to the 3 D model of the stomach, it serves as a base concector. During the process of 3 D-training, the student is a participant in the messages and takes a lot of educational information. The material described in this way quickly remains memorable than traditional lessons and leads to a high level of mastery of science.

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