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Development Of Constructive Competencies Of Students Using 3d Modeling And Distance Learning Technologies

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Abstract: This article covers the issues of developing constructive competencies of students through the use of 3D modeling and distance learning technologies. The use of 3D graphics programs in the process of engineering and Technical Education serves to strengthen the skills of students in the formation of practical skills, development of creativity and solving problem situations. Distance education, on the other hand, conveniently organizes this process, providing opportunities to work in collaboration in a virtual environment. The results of the study showed that the integration of 3D and Distance Education serves as an important factor in the effective development of constructive competencies.

Keywords: 3D modeling, distance education, constructive competence, innovative technology, engineering education, virtual environment, creative approach.

Introduction: Currently, in the process of Higher Education, the use of digital technologies, in particular, 3D modeling and distance learning systems, are widely introduced. The application of innovative technologies in the educational process ensures not only the acquisition of theoretical knowledge, but also the formation of practical skills. Of particular importance for students studying in engineering and technical directions is the ability to design, analyze, model and develop technological solutions. Therefore, the harmonization of 3D modeling with distance education is one of the pressing issues of modern pedagogy.

The student must have the competence to apply 3D modeling. To do this, it is necessary to master the skills in the field of information technology: to solve the problems of information processing of users with the help of modern information and Communication Technologies; is determined by the problems of professional activity and the formation of the skills of using modern information and information and communication technologies for the organization of their work.

Having the competence of creative thinking using 3D modeling. It should be noted that for the reliability of obtaining the results of scientific research, we consider not individual competencies, but the qualifications of the future engineer, since this concept is much broader, which includes not only components of knowledge and activity, but also motivational characteristics. It is worth noting that, according to some pedagogical scholars, competence is what we mean personal qualities, which means having certain competencies. Thus, in the study of competence, it is considered a holistic characteristic (abilities, motives, knowledge, qualifications, skills) of a person, which ensures the successful implementation of the future professional activity of a person [1].

In accordance with the higher education standard, the future engineer in the field of technical higher education institutions should master general cultural, constructive competencies. Taking these into account, we should mention that the technique for the development of constructive competencies in students is one of the pressing issues facing higher education institutions.

The conditions of the ongoing pandemic all over the world have imposed certain restrictions on offline teaching. To this day, training in our Republic had full-time, evening, correspondence, special correspondence forms. On September 23, 2020, Article 16 of the educational law of the Republic of Uzbekistan No. 637 is aimed at obtaining the necessary knowledge, skills and skills by learners in accordance with distance education curricula and curricula using information and

communication technologies as well as the Internet world Information Network.

METHODOLOGY

Large-scale work is being carried out on the development of information and communication technologies in the world education system. The process of informatization of education is inextricably linked to the competence of teachers providing education and education to young people who provide the future of our homeland in the process of professional activity of information and communication technologies.

Theoretical and practical basis for the use of modern didactic tools of Information Technology and teaching in education D.T.Pulatova, A.Abdukodirov, A.Pardaev, O.N.Ro ' zimurodov, T.Haydarov, N.I.Studied by taylookov et al [2-4].

Scientists of a foreign country I.V.Robert, A.Yu.Uvarov, A.Bork, M.Clark, D.Hehn and others have done research on the theory of the use of multimedia in the creation of pedagogical software tools [5].

From the above considerations, it can be said that the direction of the technique is not fully revealed the psychological and pedagogical and didactic possibilities, methodology, scientific foundations of the creation and application of modern didactic tools for training students of higher educational institutions, the problem of their improvement has not been specially researched.

RESULT

Training a specialist who fully meets the current demand is a period requirement. Currently, a lot of positive work is carried out in our republic in order to educate the younger generation, educate, provide knowledge, closely approach modern information technologies and teach them to work with new techniques and technologies. The main of them is the”technique and technology of distance learning forms". From this point of view, the stages of preparing the younger generation for the system of forms of distance education can be carried out in the following form: distance learning is of great importance in the period when current information technologies are rapidly developing. Because this type of education is distinguished from the types of education that have existed so far by some of its positive aspects. A different aspect of distance learning forms from full-time and other types of education is that it is possible to attract a very wide population to this type of Education. Distance learning forms embody in themselves the positive features of the types of full-time and part-time education. In these aspects, distance learning forms are one of the promising types of Education currently. In order to provide education on the basis of distance education forms, it is not necessary to gather a certain part of the population wishing to study on the land where the educational institution is located. There will be no need for excessive spending by the listener or student. It is possible to exclude age restrictions of those involved in this type of Education.

In the conditions of Uzbekistan, the organization of distance learning forms is of great effect. At present, this type of education should be used on a large scale. The origin of some of the problems associated with the introduction of this type of education is natural. But it is possible to achieve their solution at the level of opportunity. For example, the use of television at the beginning can have great effect. Currently, some subjects are being taught on television. But the effectiveness of the shows is not yet sufficient. First, these shows are mainly broadcast during the day. Secondly, it is necessary to further improve its methodology. If distance education forms are organized on the basis of this training session, then it will be necessary to revise the organizational and methodological aspects of this type of Education. As noted above, distance learning forms embody the features of the types of full-time and part-time education. One of the most important issues in the organization of distance learning forms is the selection of professor teachers. To carry out this type of education, teachers should be selected from among the most experienced and organizing professors. Because distance learning forms are different from other types of education, the improvement of its effectiveness largely depends on the cognitive, organizational and managerial characteristics of the teacher. Because a teacher who is attracted to the forms of distance education should at one time be a skillful educator, a wise consultant and an experienced administrator. In the initial period of organizing distance education forms, it is necessary to create points of distance education forms in the Centers of the respective region or region, based on the demographic characteristics of the population of the Republic. This structure should be established in charge of organizing distance learning forms in its places. At later stages, centers of distance learning forms can be established in several higher education institutions specializing in one or different directions.

The training of listeners based on the distance learning style is one of the most developing areas of the present day, a system of teaching with the teacher, where the audience is located at a certain distance. The location of the teacher and the listener at a certain distance

requires the teacher to organize educational work on the basis of such tools as computers, sputnik communication, cable television in the course of the lesson. The rapid development of modern computer technology, especially the development of information transmission channels, is making specific historical changes to the telecommunications industry. Today, progress is developing very quickly and is changing very quickly. Almost every minute changes, News and surprises are happening in different parts of the planet. Every day we go under the flow of information. In the educational system, forms of distance learning style are used. Distance learning style is a new form of correspondence learning. Distance learning is independent distance learning. Independent teaching forms the abilities of a person to think independently, to assess state, to conclude and predict.

Another advantage of distance learning is that in it, the student can study at a convenient time and at a point where hattoki is not separated from work. It is thanks to these advantages that this style is becoming more common in the World Day by day. Specialists from many large enterprises are using this technique to improve or retrain skills, saving millions of dollars a year. Another advantage of distance learning is that the audience and students themselves determine the duration of their studies in it, that is, they begin to study at a voluntary time, mastering the materials under the supervision of the teacher. The acquisition is determined by the performance of tasks, tests. The faster listeners and students master a given task, the faster they complete the course and study. Specific tasks and topics are distinguished for each audience and students. In the framework of telecommunication projects, joint creative work is carried out in the group activities of students. Mutual assessment involves the exchange of student reviews with teacher reviews. Discussions are usually devoted to the discussion of specific problems, which take place in real-time in the form of forums, video conferences, etc. Presentations (presentations) also provide real-time messages on specific topics. Speakers may be students, faculty, and invited professionals.

CONCLUSION

In place of the conclusion, it is possible to say that the integration of 3D modeling and distance learning technologies is an effective tool in preparing students for practical activities, in the development of their constructive competencies. This approach makes it possible to apply innovative techniques in the educational process, direct students to creative thinking and train competitive professionals in the modern labor market.

In addition, distance learning is a type of new pedagogical technology that has many advantages. Among them are education without separation from production, the speed of the acquired knowledge, the student's freedom in the process of obtaining knowledge, the economic efficiency of education, the high level of assimilation as a result of teaching on the basis of audio-video, animation, graphics in the educational process, the objective assessment of knowledge, the possibility of comparing theory with practice, the use of.

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