USING E-TEXTBOOKS FOR TEACHING COMPUTER GRAPHICS AND GLOBALIZING IT

Zaripov Olimjan Quvondiq o'g'li
Independent researcher of the Nukus state pedagogical Institute named after Ajiniyaz, **UZBEKISTAN**

ABSTRACT

The article gives instructions and suggestions for teaching and popularization of the subject of computer graphics on the basis of modern electronic textbooks and their use.

Keywords: Computer graphics, raster, vector, fractal graphics, Learn Graph, image, object, animation, 2D and 3D graphics.

INTRODUCTION, LITERATURE REVIEW AND DISCUSSION

In our modern world, special emphasis is placed on the technology of teaching, achieving the effectiveness of education through information and communication technologies, and the introduction of quality management

In advanced education, the role and importance of natural and exact sciences, including computer graphics in the context of globalization, is seen as the tendency to use the features of block modular system-based design as an innovative form of training for teachers.

Given role and importance of natural and Exact Sciences in educational institutions of ilgaroliy, including computer graphics Science in the global environment, trends are observed in the use of block-modular system-based design features as an innovative form of field surveying.

Research on the problems of educational technology, design and organization of educational processes is carried out by the world's leading scientific centers and positive results are achieved. These studies occupy an important place with the aim of improving the effectiveness of teaching computer graphics science, as well as the development of training design principles on the basis of the theory of technological development of educational process, modern technologies and principles.

The reforms carried out to ensure the integration of Science, Education and production in our country, the development of the higher education system, the strengthening of the material and technical base, the improvement of the forms and content of education are introducing advanced pedagogical technologies into the educational process. At the same time, it is observed that the systematic approaches to the publication of the effectiveness of the training of future computer graphics science teachers, the mechanism for ensuring the positive results of the training of "computer graphics"curriculum are insufficient. In the strategy of action on further development of the Republic of Uzbekistan, priority tasks such as "continuation of the policy of training highly qualified personnel in accordance with the modern needs of the labor market, improvement of the quality of education in higher educational institutions, deepening study of such important and high-demand subjects as computer graphics"[1; 70] were defined. In this regard, the science of "computer graphics" in higher educational institutions plays an important role in determining the modern concept of training design, innovative modeling of the technology of Organization of teaching, improvement of methodological provision.

Decree of the president of the Republic of Uzbekistan on measures to ensure more effective organization of the process of acquisition of rights over land parcels and other immovable property further expands the participation of economists and sectors in the quality of training of specialists with higher education program created within the framework of this research in the implementation of the tasks.

Pedagogical education in higher educational institutions on the methodological aspects (content, purpose, methods and tools) of the disciplines being taught on the training of specialists in the field of education, teaching computer graphics Educational Sciences and on the study of problems aimed at the formation of educational training projects in our republic. Abdukodirov, T.Azlarov, B.Baltaev, M.Ziyakhadzhaev, N.Taylakov, A.Hayitav, U.Yuldashev, R.Baqiev, M.Mamarajabov, A.Siddikov, and if scientific research was carried out by others, Scientists from the CIS.Gursky, K.Grebennikov, L.Ivannikova, O.Kraynova, O.Odintsova, N.Petrova, E.Tretyakova, L.Turanovas were looking at their work.

Proceeding from the above, we can say, Today, the company graphics is one of the fastest growing information technologies in the world. They are VideoFilm, multimedia products, movers, videoconferencing. In this way, the products are integrated into the development of ratification and technology projects. This includes: navigation which is a major consideration in the creation.

Software of three- dimensional graphics (X, Y, Z) (3D) rendering system enables server creation. The three-dimensional graphics is the most important and late-to date complication of computer graphics.

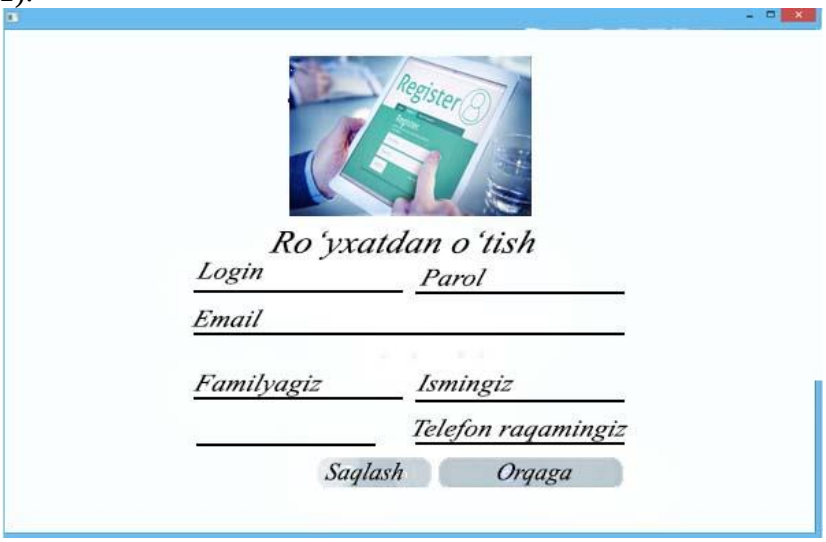
A user of three-dimensional graphics must possess kniwledge such as deleting objects, using sound and demonstrations effects.

Computer graphics development is currently under development. In the same way, the 3 objects of the application development and creating theory chooses the visualization of the application of the products. There are a number of settings, such as settings, and also we can create different kind of visual projects on it.

We can create graphic objects in programming languages or in ready-made special programs. The main thing is how much the created image resembles the real one. The Object appearance, the combination of colors in it, the size of the image all this indicates how important the computer graphics are. Computer graphic is taught in secondary institutions as a separate science under a special plan. This in turn requires the creation of software products to teach computer graphics. A few of similar software products can be seen today. But in such programs, little attention is paid to such aspects as communication between learners in offline mode, sharing ideas and increasing competition. Only one user from the program can learn independently, but if he uses more than one user in the program, that is, he is a group in schools or universities, having his own login and password – this will further increase the effectiveness of reading and learning the textbook.

This program was developed on the basis of a science program based on the 2nd application of the order of the Ministry of higher and secondary special education of the Republic of Uzbekistan № 274 in March 27th, 2018.The program is created mainly for students of higher education institutions and independent users. The program consists of 17 chapters, theoretical and practical assignments, a form with users and a graphical view of the results. The program

consists mainly of 5 Windows. It consists of a program Access window, a key input window, a login and password activation window, a registration window, and the main window of the program (Picture 1).



Registration window (picture 1)

After installing the program, a special code is issued, to activate the program, you need to take this code into the picture and send it by telegram to the phone number is indicated in the program, and by the admin you will be given a special code.You can use the code only once, that is, when you delete the program and install it again, the previous Activation Code will not work. After faxing the code, you need to register to use the application.

As already mentioned above, the program can be used as a group, and each of them will have its own dialog box and its own results.

After entering the program with a login and password, a list of information and lessons that are relevant to you will come out. Languages such as html, css, javascript, mysql, java were used in order to provide application dynamics, to attract the learner more, to leave an impact on each topic and to ensure effectiveness. The program itself was developed in the JavaFX programming language. The program presents a generalized and in-depth study of computer graphics topics and types of computer graphics: rastrian, vector, more detailed information about fractal graphics, practical examples, assignments and more. In addition, the work on a working graphic editors for each type of graphics, the sequence of creation of 2 and 3-dimensional images is detailed.

The program allows learners to have a full understanding of computer graphics and have the knowledge and skills to create raster, vector, fractal images in graphic editors. If we get acquainted with the program. Below is the main working window of the program (Picture 2).

Program main working window (picture 2)

In this part, you can get acquainted with such sections as getting acquainted with textbooks, seeing and communicating the results of other users, seeing a graph of your results, getting acquainted with the program. In conclusion, program is used in the educational process, the result will be an increase in the effectiveness of education, the improvement of new knowledge, skills and skills of students.

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