Methods of Using "Ar" (Additional Reality) Technology in the Formation of Professional Skills in Future Drawing Teachers

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A B S T R A C T

The article describes the psychological and pedagogical conditions for the formation of professional skills of a future drawing teacher and the possibility of influencing the teaching of components of professional qualities of a future drawing teacher using computer graphics. From the point of view of personal, activity, professionally-oriented and age-based approaches, which are carried out within the framework of individually-oriented continuing education, the conceptual positions of personal and professional development of an individual are considered.

A R T I C L E I N F O

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The professional skills of a future teacher of drawing - as a generalization of the results of professional and personal activity, it consists of a set of specific knowledge, skills, abilities and goes through several ways in the process of its formation:

The first way – It is a way of educational activity, which implies knowledge of the subject, pedagogy, psychology, methodology at the level of scientific and technological development and the requirements of the time.

The second way – is a way of personal activity, in which he expresses his attitude to himself, his work, colleagues, students, their parents, understands his position, self-esteem, self-awareness, striving to increase his knowledge independently, self-improvement, the ability to be creative, creative, entrepreneurial means a constant striving for innovation.

The third way – social and pedagogical activity, which allows the teacher to "see" the students, the team, to anticipate the interests and needs of students, the challenges they face; to be able to understand the individual and psychological characteristics of each student; formation of knowledge, skills, competencies in the organization of in-class and out-of-class educational activities; be able to involve students in various socially useful activities; means the existence of facets of ability, such as the ability to envy science, life, the clock, socially useful work;

The fourth way – information is a way of communicative activity, which means that the teacher-educator has information; armed with information about reality, events in the pedagogical world; demonstrates the ability to receive information from information and communication technologies, to pass it on to his colleagues, peers, students through his own thinking.

These ways of acquiring the mentioned and described professional skills are programmatic for the teacher-educator and can provide practical assistance in creating great opportunities for professional development, increasing the effectiveness of education.

Their computer literacy plays an important role in shaping the professional skills of future drawing

teachers. The 21st century is the age of computers and information and communication technologies. In this century, every teacher is required to be computer literate, to be aware of the techniques of the period and its technology, to be able to apply techniques and information and communication technologies in the teaching process. This, in turn, is a didactic event that serves to increase the effectiveness of the lesson, to ensure the quality of teaching and learning. In addition, the information obtained with the help of computers, along with enriching the content of lessons, helps to increase the scientific and theoretical level of teachers, increase literacy, establish interdisciplinary integration, strengthen the practical direction of teaching tasks, improve pedagogical skills.

The use of information technology in various areas of human activity affects the formation of personality in four main areas: philosophical (scientific worldview, formation of aesthetic ideals), instrumental (formation of computer literacy and information culture), practical (use of software to solve professional problems), psychological (memory , attention, thinking, development of mental processes of imagination, maintaining a high level of motivation)

New concepts that arise in the process of working with computer tools are transferred to traditional communication conditions, in particular, when working with computers (computer graphics) increases the subject's cognitive activity, individualizes the learning process, changes the authoritarian communication environment, encourages student development - independence, initiative, accuracy of presentation , significantly increases the requirements for consistency and coherence, increases the importance of reflection, which is of professional importance for pedagogical activity and is the basis of gnosological, design, constructive, organizational, communicative components.

At present, as an information technology tool, fine arts and engineering graphics are used in the educational process, B.C. Kuznetsova, S.N. Padalko, V.D. Parondjanova, S.A.Ulyanova, N.V. Sofronova, E.M. Kravchenya, T.I. Abragimovich, L.Ya. Nodelman, Yu.F. Katxanova, M.N. Marchenko, A.N. The Agoshkovas conducted scientific research.

Computer graphics are widely used in the training of teachers of fine arts and drawing at the Department of Descriptive Geometry, Computer Graphics and Design under the leadership of Katkhanova Yu.F. However, these methods are aimed at acquainting students with working with personal computers, software used in the field of computer graphics, computer technology and its potential in the field of culture and education, and not aimed at shaping the professional skills and pedagogical activities of future teachers[1].

Шундай қилиб, компютер графикасини ўқитиш жараёнида чизмачилик ўқитувчисининг касбий кўникмаларини шакллантириш муаммоси етарлича махсус тадқиқ қилинмаган.

Analyzing the above-mentioned research, we can see that information technology plays an important role in the training of future teachers. Currently, the school education system is in need of teachers with advanced professional skills, ethnographic, design, constructive, organizational, communicative, as well as computer literacy.

Insufficient attention is paid to the training of such specialists, which leads to a decrease in the professional level of graduates of art and pedagogy universities.

The use of computer graphics in various areas of human activity affects the formation of personality in four main areas: philosophical (warming of the scientific world, the formation of aesthetic ideals), instrumental (formation of computer literacy and information culture), psychological (mental memory, attention, thinking, imagination) application).

Computer technology as an effective method and tool of cognition that enhances human mental capacity is fundamental to the development of all areas of knowledge and activity and is aimed at changing human practice and life, penetrating all aspects of human activity, and its purposeful use in education.

[1]Katxanova, Yu. F. Creativity and their development in graphic activity: monograph - Cheboksary: "Wednesday", 2018. - 140 B.

It is planned that the subject "Drawing" will be taught electronically, with the aim of developing students' curiosity and self-study.

- According to the analysis of the teaching situation of the subject of drawing, the level of mastery of topics, etc., the task is set to teach the main topics of the subject on the basis of computer-assisted learning technology;
- The task is to develop ways to use computer technology, based on the advantages and peculiarities of computer-assisted learning technology;
- In contrast to traditional teaching technology, teaching aids, forms of teaching and active teaching methods required for the implementation of computer-assisted learning technology are selected, identified and the learning process is planned;
- New teaching tools, forms and methods are selected in the planning of the teaching process of the curriculum and program topics. In the implementation of modern teaching technology based on teaching methods, it is assumed that the teaching tools, forms and methods are focused on the use of computer technology;
- Ways to use computer technology are used in the classroom. Which of the ways to use the developed computer technology is effective is determined by monitoring and results. According to the results, the ways of using computer technology in this group will be continued again, or the optimal ways of using computer technology will be developed again.

Thus, looking at the learning process as a system, computer-aided learning technology is implemented, which evaluates the impact of its organizers, ie the teacher's teaching tools, content and methods on learners in a particular sequence and learning outcome.

Computer-assisted learning technologies are new educational technologies that create forms of learning based on electronic means. The organization and conduct of classes, seminars and workshops, etc. are forms of teaching, which are carried out in conjunction with teaching aids and methods. According to this system, the teaching process is planned based on the curriculum and programs in the subject. New teaching tools, forms and methods are selected in the planning of the teaching process.

Teaching aids - auxiliary teaching materials - tools, hardware, etc., necessary for the successful implementation of a particular teaching method, where the use of computer technology involves computers, video cameras, projectors, screens and other technical means.

The form of teaching is a laboratory, practical training, colloquium, etc., a form of theoretical and practical knowledge, the ways of introduction of computer technology are developed on the basis of curricula and programs in science, planning the teaching process.

Teaching methods are, first of all, a process and a way of knowing. It consists of a set of actions aimed at acquiring knowledge of a process.

Thus, in the formation of professional skills of future teachers of drawing in the teaching of "Drawing" information technology is a living didactic process that helps to develop students' interests, to organize active technical activities, to improve the educational process. Of course, this process does not happen by itself, it must be organized and created. In its effective implementation, it is necessary to remember to rely on it, taking into account the mental state, psychological characteristics of students.

Taking into account the above, a methodology for using QR technology "Additional Reality" in the process of teaching drawing has been developed.

«**Қўшимча реаллик**» ҚР, eng. «**Augmented reality**» AR, rus. «**Дополненная реальность**» ДР – is the result of entering any emotional information into the visual field to replenish information about the environment and enhance the sensitivity to the perception of the environment.

ҚР technology is a computer-generated reality that uses “extended” elements of the perceived reality when real objects are installed in the field of perception.

The concept of "augmented reality" was first introduced in 1990. The appropriate name of the technology

was developed by an employee of Boeing (Boeing) named Tom Codel. Due to the added reality, the corporation's engineers saw virtual drawings of the aircraft. They used helmets with a special display to see the object in 3D.

In 1994, researchers Paul Milgrom and Fumio Kishino developed a virtual reality continuum. In 1997, Ronald Azuma described in more detail what virtual reality is[2]. According to him, it is a system that combines real and virtual objects. They move with each other at the same time and they work in 3D space.

How does ҚР technology work?

1. The camera of an electronic device analyzes an image of the room in which it is located.
2. Special software puts a virtual object into a "reality" image.
3. Synchronizes the virtual object with the real internal environment.
4. Moves them at the same time.
5. Displays a ҚР image on the electronic device screen.

It may seem simple, but implementing this technology is a whole art.

Is it possible to use QR technology in the learning process?

Imagine: the teacher is monotonously or, conversely, very enthusiastically organizing the lesson process in a variety of interactive ways. For example, it is not necessary to spend too much time or use different methods to give information about the Egyptian pyramids and the peculiarities of their construction. With the help of virtual QR technology, the teacher and student can directly see the Egyptian pyramids and their interior, walk through tunnels, hear the noise of labyrinths and independently understand the main historical events that took place thousands of years ago. With such technology, it is possible to nurture a whole generation of such professions that are still much needed to maintain the versatility of modern science in today's society.

What is the advantage of virtual and augmented reality? They allow the creation of an environment that is perceived by the human senses.

Thus, the effective use of information technology in the teaching of engineering graphics, its content, structure, continuous improvement of teaching methods, the creation of electronic literature from the course of engineering graphics remains one of the main tasks of reforming the teaching of drawing and graphic geometry.

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