

Impact Factor:

ISRA (India) = 6.317
ISI (Dubai, UAE) = 1.582
GIF (Australia) = 0.564
JIF = 1.500

SIS (USA) = 0.912
ПИИИ (Russia) = 3.939
ESJI (KZ) = 9.035
SJIF (Morocco) = 7.184

ICV (Poland) = 6.630
PIF (India) = 1.940
IBI (India) = 4.260
OAJI (USA) = 0.350

SOI: [1.1/TAS](#) DOI: [10.15863/TAS](#)

International Scientific Journal Theoretical & Applied Science

p-ISSN: 2308-4944 (print) e-ISSN: 2409-0085 (online)

Year: 2021 Issue: 09 Volume: 101

Published: 25.09.2021 <http://T-Science.org>

QR – Issue



QR – Article



Dilfuza Islomovna Mamurova
Bukhara State University
Associate Professor


THE BASIS OF THE POSITIVE RESULTS OF TEACHING DRAWING USING COMPUTER TECHNOLOGY AND SOFTWARE

Abstract: *The use of computer technology in teaching graphic geometry and drawing to university students remains one of the requirements of the times. As a result of the use of computer graphics, students' spatial imagination expands and forms a creative approach to science and teaches students to work independently. The use of computer technology and graphics gives positive results compared to traditional methods of teaching graphic geometry and drawing, the quality of teaching, the acceptance of information by students and pupils, the stability of the acquired knowledge prevails.*

Key words: *Student, geometry, drawing, science, computer technology, spatial imagination, creativity, technology, graphics, drawing, knowledge.*

Language: *English*

Citation: Mamurova, D. I. (2021). The basis of the positive results of teaching drawing using computer technology and software. *ISJ Theoretical & Applied Science*, 09 (101), 530-532.

Soi: <http://s-o-i.org/1.1/TAS-09-101-61> **Doi:**  <https://dx.doi.org/10.15863/TAS.2021.09.101.61>
Scopus ASCC: 3304.

Introduction

The main purpose of education is to form spiritually rich individuals who have modern scientific knowledge, the ability to think independently and solve problems. As society develops, the level of vital needs also increases. This means that the scope of scientific knowledge expands, the level of scientific knowledge deepens, and the need for logical thinking and quick problem solving increases. From this point of view, we conclude that the education system should work not only in view of today's requirements, but also in defining and taking into account the requirements of the future. Because today's youth will become the core of society in the future. It occupies a central place in society as it covers the largest number of young people in the education system.

In order to prepare future professionals for professional work in higher education and to ensure their readiness and ability to compete in the labor market, the formation of a socially mature person, the improvement of the development process is carried out through the use of modern teaching technologies. Therefore, it is necessary to analyze existing teaching theories and develop ways to use modern teaching

technology. Teaching sciences in higher education with the help of modern pedagogical technology is the main criterion for the development of theoretical knowledge of young people in the educational process, the ability to work in professional areas, the training of competitively qualified young people needed for economic development. This can be achieved primarily through the formation of professional knowledge and skills.

In higher education, the process of formation of knowledge, skills and competencies that allow to work in a specific professional activity, that is, general professional disciplines play an important role in vocational training. This is because students of vocational colleges cannot master special subjects without deep knowledge, skills and qualifications in general professional subjects. The subject will combine the basics of the relevant science. The system of basic concepts of science, the basic rules and conclusions are reflected in it. In any field of specialization, general professional sciences serve as the main criterion for specialized disciplines.

In our opinion, not enough attention is paid to the teaching of drawing courses on the basis of computer technology in higher education. Computer

Impact Factor:

SISRA (India) = 6.317
ISI (Dubai, UAE) = 1.582
GIF (Australia) = 0.564
JIF = 1.500

SIS (USA) = 0.912
PIIHQ (Russia) = 3.939
ESJI (KZ) = 9.035
SJIF (Morocco) = 7.184

ICV (Poland) = 6.630
PIF (India) = 1.940
IBI (India) = 4.260
OAJI (USA) = 0.350

graphics is taught in the fields of "Fine Arts and Drawing" and "Applied Arts". In the computer science curriculum there is little time to teach the graphics capabilities of Microsoft Word, Microsoft Paint, Microsoft EXCEL, Microsoft Power Point. (Must be able to work comfortably in graphics programs such as AutoCAD, 3DMAX, CorelDraw.

The use of computer technology in teaching graphic geometry and drawing to university students remains one of the requirements of the times. As a result of the use of computer graphics, students' spatial imagination expands and forms a creative approach to science and teaches students to work independently. He searches the Internet for the information he needs and becomes more and more eager to carry out the projects he is thinking of. A student can easily draw his or her projections when making drawings of any project by taking a pencil to the lake, but the projected detail or assembly unit has much difficulty in drawing vivid images and loses a lot of time to create a vivid image.

What does computer technology give students? The answer to this question is as follows:

- expands the spatial imagination of students;
- Encourages students to be creative;
- Encourages students to create something new in their field;
- closely assists in the aesthetic education of students;
- closely assists in the execution of coursework and diploma work drawings.

Computer graphics for a graduate teacher:

- to teach in the classroom using computer technology;
- prepare lesson plans, electronic guidelines and visual aids that are needed in the classroom;
- aesthetically superior teaching process;
- helps to increase students' interest in the lesson and increase attendance.

Teaching computer graphics helps teachers in the process of preparing for and teaching lessons.

The use of computer technology and graphics gives positive results compared to traditional methods of teaching graphic geometry and drawing, the quality of teaching, the acceptance of information by students and pupils, the stability of the acquired knowledge prevails. The creation of models in 3D using computer graphics shapes students' spatial perceptions and prolongs the duration of storage of the acquired knowledge in memory.

A modern graphic geometry and drawing teacher spends a lot of time in front of a computer monitor as a result of using Internet data and computer technology to convey information to students, and prepares e-lecture texts and guidelines to facilitate lessons. These software and pedagogical tools ensure the integration of the science of descriptive geometry and engineering graphics with other disciplines, in particular, computer graphics, aesthetics, computer science, theory of machine mechanisms, machine

parts, the basics of interchangeability and standardization, technical creativity and design. An increase in the scientific potential of the teacher is observed. In graphic applications, drawing geometric elements, geometric shapes, and geometric objects easily using a ready-made set of commands allows the teacher to spend less time and create more methodological guidelines. Conducting lessons using visual and multimedia textbooks ensures that the content of the lesson reaches students and learners faster. In our graduate thesis study, Microsoft Power Point, Camstudio, AutoCad, 3D Max, Flash MX programs were analyzed and the place of each of them was determined. Microsoft Power Point includes graphical geometry problems and animations. Also, the spatial solutions of problems created in the program AutoCAD were included in this software-pedagogical tool by photographing the program Camstudio.

To date, experts have noted that they have developed different learning models, modeling environments, and different computing programs. It is necessary to analyze the impact of multimedia and computer graphics in the teaching of descriptive geometry and engineering graphics. Initially, it is necessary to identify the types of multimedia in the teaching of the subject of analytical interpretation of data, descriptive geometry and engineering graphics in whole or in part.

It follows that the following requirements are set for the software-pedagogical tool of descriptive geometry:

- multimedia
- Multilevel
- hypertext
- Modern graphics
- Computer models based on modern technologies Macromedia Flash, AutoCad, 3Dmax must be interactive. There are a number of problems in the computerization of the science of descriptive geometry and engineering graphics, and they include:
 - lack of methodological support, methodological manuals;
 - Inability of teachers and students to create interactive models independently in the field of descriptive geometry and engineering graphics.

The e-textbook should develop the skills of higher education science programs and new models of educational activities, the use of information and telecommunication technologies, the use of ICT in students during the educational process.

Accordingly, the creation of electronic multimedia developments remains an urgent task. Such developments should include the following systems: a set of illustrated training data; virtual laboratory and interactive model complex; complex of tests; required issues; it is required to be connected to the Internet and the network, including alternative information retrieval systems from the Internet.

Impact Factor:

ISRA (India) = 6.317
ISI (Dubai, UAE) = 1.582
GIF (Australia) = 0.564
JIF = 1.500

SIS (USA) = 0.912
PIHII (Russia) = 3.939
ESJI (KZ) = 9.035
SJIF (Morocco) = 7.184

ICV (Poland) = 6.630
PIF (India) = 1.940
IBI (India) = 4.260
OAJI (USA) = 0.350

Student activism and independent thinking problems are one of the didactic roots of the practice. If pupils and students are not active and cannot imagine the space, the teacher's activity will not be meaningful. The development of teaching methods should be primarily focused on making students think independently and be active. Computer technology can effectively help students develop free thinking and spatial imagination.

In summary, the application of computer technology in the teaching of drawing enhances students' cognitive abilities, motivation for innovation, and develops their spatial imagination and

creative thinking skills.

Scientific and methodological literature, dissertations, best pedagogical practices on the use of modern computer technology in the education system, as well as the use of computer technology in the teaching of descriptive geometry and drawing were studied and analyzed from a scientific, pedagogical and psychological point of view. Drawing argues that the use of computer technology in the educational process is a tool that allows students to increase their mastery levels and the relevance of advanced pedagogical practices.

References:

1. Aripov, M., & Haydarov, A. (n.d.). *Informatika asoslari*.
2. Sattorov, A. (n.d.). *Informatika va axborot texnologiyalari*.
3. Xolmatov, T.X., Tayloqov, N.I., & Nazarov, U.A. (n.d.). *Informatika va hisoblash texnikasi*.
4. Badiev, M., Mamatov, D., & Safarov, G. (2014). *Komp'uter grafikasi fanidan Y'kuv metodik k'yllanma*. (p.106). B.: Durdona.
5. Khodjayeva, N. S., Mamurova, D. I., & Nafisa, A. (2020). Importance in pedagogical techniques and educational activity. *International Engineering Journal For Research & Development*, T. 5, №. CONGRESS, p.5.
6. Islomovna, M. D., & Ruziboevich, S. A. (2020). Scientific and methodological bases of development of creative activity of students in drawing on the basis of computer animation models. *International Journal of Psychosocial Rehabilitation*, T. 24, №. 4.
7. Islomovna, M. D. (2019). Didactic conditions for achieving students' self-efficacy through the use of ict in drawing lessons. *European Journal of Research and Reflection in Educational Sciences*, Vol. 2019, T. 7, №. 12.
8. Olimov, Sh. Sh. (2021). "The innovation process is a priority in the development of pedagogical sciences".
9. Mamurova, F. I., & Mamurova D. I. (n.d.). *Komp'jyter grafikasi fanini y'kitish xolati*. Tulaganov AA. p.145.
10. Mamurova, D. I. (2018). Application of Advanced Information Technologies of Training at Drafting Lessons. *Eastern European Scientific Journal*, №. 6.