International Journal of Psychosocial Rehabilitation, Vol.24, Issue 09, 2020
ISSN: 1475-7192

Problems of Computer Technologies with Drawing

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Annotation

The use of computer technology in the educational process helps to increase students' intellectual abilities based on information technology. The issue of "drawing" based on pedagogical technologies, the technology of computer training, the creation of electronic forms of training. The organization of computer training and the development of electronic forms of training will ensure the effective achievement of the objectives of the educational technology in the educational process.

Improvement of the content, forms and methods of traditional education, taking into account the advantages of computer technologies, the development of scientific and methodological bases for the use of fast, high-quality, active and advanced methods of teaching, including computer technologies, computer science education. can develop.

Keywords: *Computer Technologies, Drawing*

I. INTRODUCTION.

Only through the radical change of the content of the education system, the creation of a holistic information space, the introduction of advanced educational technologies, the effective use of information technology, the development of curricula and programs in line with international standards, and the training of specialists. Consequently, the issue of implementing modern pedagogical and information technologies in education is one of the most important and important issues.

For those who work old, lagging behind science and technology, the possibilities of the internet and high technology, there is no future for them. In our country today, great attention is paid to the development of computer technologies and the Internet. Accordingly, teaching computer science and new information technology in educational institutions is a requirement of the time.

Undoubtedly, as experts have unanimously confirmed in recent years, significant steps have been taken in this direction in our country. However, activities in this area are not yet in demand. It is necessary to use different forms of education in order to further improve the quality of personnel training and full implementation of the Law on Education.

Much work is being done in this regard. Here is an example of a new, more advanced type of education called "distance learning." This type of education differs from the existing forms of education by some of its advantages.

The main reason for the emergence of this type of education is the rapid development of information and communication technologies and the creation of principally new educational technologies (Internet technologies). The

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use of Internet technology has given us the opportunity to distribute and distribute educational materials in an unlimited and inexpensive manner, and to deliver them quickly and accurately to students. However, as learning is interactive, the role of the student's self-work becomes crucial.

The 21st century is the century of the development and organization of new techniques and technologies on the basis of computers. Therefore, the use of computers in engineering design, as well as in all areas, has become a pressing problem of today.

Computer Engineering Graphics is an elementary part of CAD. The course "Engineering Computer Graphics - Computer Design" is designed for students who have completed or have mastered such disciplines as "Descriptive Geometry" and "Drawing".

There are several applications in this regard, now AutoCAD has a special place. The main purpose of this program is to teach students the procedure and rules for performing all types of graphic information in engineering and specialty disciplines, such as drawings, diagrams and schemes, in two- or three-dimensional ways.

The main task of the AutoCAD program is to provide students with the knowledge and skills needed to freely perform computer-generated design and technological processes using both practical and operational applications and ready-to-use packages.

The courses on "Computer Computer Graphics" will be conducted in the form of lectures and practical labs on the basis of the approved model program on the recommendation of the Coordination Council by the Ministry of Higher and Secondary Special Education for the preparation of bachelors and engineers in higher education institutions.

In each lecture session, the theoretical knowledge necessary to perform graphic information components on a computer screen, to create options that can be modified and reproduced, and to print the images on the screen, step by step, is provided. In practice, skills are enhanced by using practical commands such as drawing, editing, measuring and linking objects.

Students will improve their theoretical knowledge and practical skills by strengthening the knowledge and skills gained during the course of four labs.

In I-Lab work "Flat outline drawing" is made with the main inscription (corner stamp) in A4 or A3 format.

In Lab II work tasks: "Finding and trimming the third of two types of subject".

In the III-Lab work the task is "to separate the details of the assembly unit and to make them a working drawing".

In Lab IV, the assembly drawings and specification of part of the assembled unit, which consists of 3 or 4 parts, shall be made and specification given for laboratory III.

Performs geometric patterns of varying complexity in V-lab work.

The extent of the problem studied. In the era of socio-economic development, scientific and technological development is one of the most important issues today, when it is necessary to improve professional skills and empower young people in accordance with the requirements of science, production and technology. determined. The basic foundations of the science of drawing are S.M.Kolotov, M.Y.Gromov, V.E.Mikhaillenko, R.H.Karunov, Yu.Kirgizbaev, E.Sobitov, A. Akbarov, Sh.Murodov, J.Yodgorov, R.Ismatullaev, D.Kuchkarova, I.Rahmonov; Scientists such as A.D.Botvinnikov, VN Gerver, A.Umronhodzhaev, J. Yodgorov, E. Ruziev, P. Odilov made a significant contribution to the methodology of teaching drawing. Examples of such topics as use of computers in image exchange (J. Yodgorov), development of cognitive activity of students (N. Yodgorov), use of AutoCAD graphics package (T.Rixsiboev) and development of space imagery (E. Vlasov, V.Yucherbakova) did.

Shokirova's "Development of creative thinking and increasing the effectiveness of program-based learning", N. Yodgorov's thesis at Bukhara State University on "Factors in the development of student cognitive activity during spatial substitution" is partly devoted to computer technology.

Information technology is evolving so rapidly that pedagogical research is failing to analyze new methods, forms and teaching tools.

A number of scientific researches are being carried out on the use of computer technologies in teaching science in foreign countries, particularly in the Russian Federation and Ukraine. T.S. Severova's research focuses on the humanization of computer graphics in the artistic and graphic classes of the school. L.Shevtsova introduces computer graphics at the Faculty of Art Graphics by L.Y.Nodelman, I.V. Grigorieva, G.P.Blludnov on the introduction of "Descriptive Geometry" into the learning process of personal electronic computers. scientific research on teaching technologies. The work of Odintsova O.P., L.M.Turanova is devoted to the use of computer graphics and geometric modeling in the system of pedagogical education.

Severova, SV Panyukova, ES Polat, MA Mirzaeva, N. Jumaboev, K.S.Jumaniyozov, N.N.Gomulina dissertation research in schools and universities dedicated to use in their home countries. A number of scientific studies are focused on the formation of teacher training in the context of computerization of education (T.D. Dududko); teacher training system in the use of information technology in the educational process (M.I.Dzhaldak); didactical bases of training of future computer science teachers with application of new information technologies (G.A.Kruchina); methodological bases of preparation of teachers of informatics in the use of computer technologies in education (M.Urusheva); Methods of formation of informational-technological organization of professional culture of the teacher (N.V.Molotkova); Information-dynamic environment of education is the factor of formation of informational culture of the future teacher (N.A.Sizintseva); The effectiveness of the use of modern information technologies in the higher education system (Yodgorov V.A.; Panyukova S.V.) based on the personal orientation of the use of information technology in education. is released.

Amanashvili, M.N. In the works of Berualavi, E.I. Bondarevsky, A. Maslow, K. Rodgers, I.S.Yakimovsky and others, the importance of humanization of education is emphasized. S.V.Panyukova, E.S.Polat, E.A.Yamburg have done humanization of education with the use of information and communication technologies (ICT). Volkov's work is devoted to the use of computer technology in teaching humanities.

A.S.Kondratyeva, V.V.Laptev and others have conducted dissertation research on the problems of teaching using computers. Some scientists, including V.U.Klevitsky, who used computer technology as a tool for training, computerized physical experimentation for individual training.

In Ukraine V.R.Kondratov's research work has studied the didactic basis of teaching students of grades 5-7 using computer graphics.

Theoretical-methodological bases of creation of new generation of educational literature (electronic textbooks) on special subjects are reflected in doctoral dissertations of K.T.Alimov. There are electronic textbooks by Ferghana Polytechnic Institute under the guidance of Sh.Murodov, A.Khakimov, A.Kholmurzaev, A.Jumabaev, A.Tuhtaev. Nowadays, along with the creation of electronic textbooks, scientific works are being conducted to teach the subject of drawing geometry using computer technology.

The use of new pedagogical technologies and information and communication technologies (ICTs) is an imperative of the time for high school leisure. The teacher must have the necessary teaching skills and skills in ICT. Teacher of

drawing geometry and engineering graphics must possess the skills to work with Microsoft Word, Microsoft Excel, Microsoft Power Point, Microsoft Paint, AutoCAD, 3D MAX, FleshMX.

In our opinion insufficient attention is paid to teaching engineering graphics courses in the universities of the country on the basis of computer technologies. Computer graphics is taught in "Fine Arts and Engineering Graphics" and "Applied Arts". It is not enough for the teacher.The drawing teacher must be able to work freely in graphics programs (AutoCAD, 3DMAX, CorelDraw).

Gorbunov I.B. At present, the experts have developed various training models, modeling environments and various computational programs. Gorbunov I.B. The development of new curricula, educational and methodical materials, as well as new generation of textbooks and manuals for the effective use of computer technologies and the importance of teaching science. While traditional methods are far less effective, computer technology emphasizes new opportunities for learning processes, as well as for the study of specific events and events. This can be considered as an important modern trend in computer-aided teaching techniques.

II. ANALYSIS

The use of computer technology in teaching geometry and engineering graphics for high school students remains one of the modern requirements. Diploma work using computer technology in teaching geometry and engineering graphics gives students an opportunity to complete coursework using a variety of computer graphics. As a result of the use of computer graphics, students' spatial visions expand and develop a creative approach to science and teach students to work independently. Their desire to find the information they need on the Internet and carry out their projects is growing. The student pencil can easily draw a projection of any project, but the projected detail or assembly unit has a lot of difficulty in drawing clear images, and it takes a lot of time to create a clear image.

At the same time, professors and teachers of higher education institutions need to improve their computer skills. What does computer technology give students? You can answer the question:

- Expands the space vision of the mornings;
- encourages the weekend to be creative;

encourages the mornings to create something new in their field;

- helps in aesthetic upbringing of the mornings; - assists in the implementation of course and diploma works.

Future teachers who graduate from high school in computer graphics:

- Teaching with use of computer technologies during the lessons;
- preparation of necessary teaching materials, course materials, electronic methodical instructions and demonstration materials;
- aesthetically high educational process;
- helps to increase students' interest and increase attendance.

Teaching computer graphics is helpful for educators in their classroom preparation and teaching. Not enough scientific research on the use of computer technology in teaching geometry and engineering graphics has been done so far in the country.

The use of computer technology and graphics will give positive results compared to traditional methods of teaching geometry and engineering graphics, the quality of teaching, the acceptance of the information provided by students and students, the stability of the knowledge gained. The creation of models in 3D space using computer graphics will form students' spatial representations and extend the retention time of the acquired knowledge.

The scientific and methodical literature, dissertations, advanced pedagogical experience on the use of modern computer technologies in the education system, as well as the application of computer technologies in teaching of drawing geometry and engineering graphics were studied and analyzed from the scientific, pedagogical and psychological point of view. The use of computer technology in the learning process is a tool that allows students to improve their learning, and advanced pedagogical experience is relevant to the topic.

One of the modern challenges of teaching drawing is the widespread use of computer technology in its teaching. It has been theoretically proven that the computer can provide convenient opportunities for students to rapidly integrate graphic software programs, as well as improve their learning efficiency. It is advisable to use all available software and pedagogical tools to address the problems of teaching drawing.

The literature was reviewed on the basis of curricula and syllabus on the subject "Geometric drawing".

- Definition of modern teaching methods, their advantages, disadvantages, role in shaping skills and abilities of students;

- Theoretically justified methodological possibilities of using computer technologies in training;

- Analyzed the available software and pedagogical tools in the engineering graphics disciplines.

The following didactic requirements for drawing software and pedagogical tools have been developed: a) step-by-step and step-by-step construction of primitives in problem solving. b) The possibility of automatic control of the program-pedagogical tools depending on the type of lesson or the student's self-management.

- Theoretical themes of the basic themes of geometric drawing are studied;

- Improved method of organizing geometric drawing science using AutoCAD graphic software;

The use of computer graphics in drawing lessons is based on scientific, pedagogical and psychological aspects of the development of students' spatial imagination and creative thinking skills.

The direction of experimental research, the purpose, tasks, methods of research were determined.

It was determined that the use of computer technologies in the teaching of "drawing" will facilitate the effectiveness of education and training, the formation of students' independent thinking, and the formation and development of individual creative thinking.

- Training through e-books and e-exhibitions, the convenience of the student in learning independent tasks and new knowledge;

- Ensure that the student maintains his or her computer independently while maintaining a leadership and mentoring role; ability of the teacher to quickly and efficiently control students' knowledge by using a computer;

- The ability of the student to independently prepare electronic versions of lectures and internships;

- The results of the pilot studies, which allow to optimize the ratio of the number and content of the examples and tasks that are to be found in the classroom and which should be independently prepared for the student.

- Computer training technology for teaching "Drawing" in higher education; In the classroom, the objectives and objectives of the study were tested using video demonstration techniques and interactive methods in experiments.

The results of the pilot and pilot studies were summarized and analyzed. To determine the accuracy of the result, the standard deviation was calculated, and the results were tested using the Student's method. The efficiency ratio in the control group was 1.04% in the experimental group and 1.22% in the experimental group. that is, an 18% increase in teaching efficiency.

The results of the pedagogical experience testify to the validity of the use of computer technology in drawing science in higher education to help students improve their knowledge and skills.

Completing the topic of graphic drawing on a computer, it is important to note that the computer can do the drawings of the most complex two-dimensional and multidimensional space figures much more quickly and accurately than hand drawing. The advancement of scientific technology means that in the near future, all the work on drawing and drawing will be on computers.

The main task of the AutoCAD program is to provide students with the knowledge and skills needed to freely perform computer-generated design and technological processes using both practical and operational applications and ready-to-use packages.

What does the concept of an information society mean? This is a society in which most of the processors are engaged in the production, storage, processing and sale of information. Computer graphics (machine graphics) - machine graphics means the creation, storage, processing and visualization of objects by means of computing machines.

Computer graphics is a new fundamental science in the world and has an independent role in training specialists in the economy.

Most of the information is received by the human eye. Visual information is easy to absorb. This feature of human nature is used in graphical operating systems. In them, the information is expressed in the form of graphic objects: icons, windows and images.

AutoCAD Graphics Package is a tool that allows you to draw 2- and 3-D images of various sizes on a computer monitor. AutoCAD provides quick and easy drawing.

You can also use a tablet to create images on your computer monitor. The tablet has a flat lining surface, the level of which is equivalent to a screen display. Onscreen species are usually created by spraying. The tablet works in conjunction with the monitor screen. The monitor screen and tablet area have the same level, and each point on the tablet corresponds to the same point on the monitor screen. The image is drawn on a tablet with a special pen called Status.

AutoCAD's screen list allows you to refer to multiple graphical lists (eg bar types, bar headers). Instead of square cells, axonometric cells are used to make spatial details. In this case, the image lines are drawn in the direction of axonometric (isometric, dimetric) arrows. Once completed, the axonometric lattice is removed from the screen using the method described above, leaving the image alone.

In each lecture session, the theoretical knowledge necessary to perform the primitive components of graphic information on the computer screen, create options that can be modified and reproduced, and print out on-screen images. In practice, skills are enhanced by using practical commands such as drawing, editing, sizing and linking objects.

The teacher of modern graphic geometry and engineering graphics spends a lot of time in front of a computer monitor as a result of using the Internet and computer technology to convey information to students, and prepares electronic lectures and methodical instructions to facilitate the lessons. These software-pedagogical tools provide a close connection between the disciplines of drawing geometry and engineering graphics with other disciplines, including computer graphics, aesthetics, computer science, machine mechanics, machine details, the basics of interchangeability and standardization, technical creativity and design. One can observe the growth of the teacher's scientific potential.

Conclusions on the peculiarities of the use of computer technology in teaching engineering graphics subjects

- The scientific and methodical literature, dissertations, advanced pedagogical experience on the use of modern computer technologies in the education system, as well as the application of computer technologies in teaching of drawing geometry and engineering graphics were studied and analyzed from the scientific, pedagogical and psychological point of view. The use of computer technology in the learning process is a tool that allows students to improve their learning and advanced pedagogical experience proves the relevance of the topic.

- The academic literature on engineering graphics was analyzed scientifically, pedagogically and psychologically, and it was found that: a) 40-60% of the volume of academic literature on engineering graphics is illustrative (drawing, charts, diagrams, drawings, etc.); b) Drawing of questions in the drawing literature and their solution in the same image and in black make it difficult for students to independently master the topics.

- One of the modern problems of teaching drawing is the wide use of computer technologies in its teaching. It has been theoretically proven that computer programs can provide students with an opportunity for intensive mastering of educational materials and enhance their learning efficiency. It is advisable to use all available software and pedagogical tools to address the problems of teaching drawing.

The purpose, content, forms, methods and means of the educational process are the traditional categories used in pedagogy for the analysis of educational processes. It is these categories that emerge as the subject of pedagogical activity that constitutes the educational process of a particular subject, specialty or specialty. Laws and criteria of pedagogical and educational activity that systematically target the mentioned pedagogical categories serve as a systemic factor. For a long time, the size of the pedagogical categories presented was sufficient to achieve the goals of the community. It is well-known that the skills and skills to acquire knowledge become more complex. This process has been analyzed by scientists and certain rules have been developed. Abu Rayhan Beruni, a encyclopaedist scholar, is one of the scholars who have thoroughly studied the educational process. He expressed his views on ways and means of acquiring scientific knowledge.

- not boring the learner;
- based on diversity in education;
- to be consistent, consistent.

Biruni also claims that interesting, mainly illustrative presentation of new topics will yield effective results. Abu Ali Ibn Sina stresses the importance of training individuals in the educational process while emphasizing the following aspects of education:

- do not keep a student on a book at the moment of their education;
- teaching in education by moving from simple to complex;
- focus on teaching in a learning community, as a team in teaching;
- Consideration of students' interests and abilities in teaching;
- Combining training with exercise.

These rules, developed by them, have begun to take a strong role in education. On the importance of the educational process, Karimov said: "We must always bear in mind that the future of our country depends on how our young generation is brought up, what moral values we have, how active our children are in life, and what higher goals we serve." .

Recognizing the benefits of integrating information technology into the learning process: first of all, the use of computers and telecommunications facilities in the learning environment limits the subjectivity of students, which is one of the most important disadvantages of the pedagogical process.

For example: firstly, if a student's response or self-assessment was influenced by the teacher's attitude toward the student's personality, the information provided by the machine would be objective;

Secondly, it is also possible to repeat and repeat the information transmitted to the student by computer.

Third, each teacher has a didactic method of explaining a specific lesson. The use of computer tools eliminates inefficiencies in them;

Fourthly, new technologies of transfer of knowledge, knowledge, which give a wide range of schemes, pictures, tables, graphs and diagrams. This can greatly enhance the memory of young people and enhance their memory;

Fifth, the information contained in these media can be used where it is necessary to burn them to disk.

It saves time and money and is economically cheaper than hundreds of copies printed. Most importantly, interested audiences will be able to get the information they want with the same quality and system.

The pedagogical objectives of the organization of computer training technology based on the pedagogical technologies of the subject "drawing" were determined, namely:

- The perfection of the personality of the student in the conditions of an informed society at the level of a fully developed person development of thinking (for example, vision, influence, exposition, skill, theoretical thinking, etc.); the development of aesthetic education (for example, through the use of computer graphics, through multimedia technologies); conversational skills - ability to communicate and to exchange ideas; to form the student's ability to come up with solutions or to offer options for solving them in difficult situations (for example, by using computer games, crossword puzzles, puzzles, etc.); experimental - creative - search activity (for example, by modeling on a computer, etc.) or by using a computer-aided device - scanner, video, video and others; information analysis, information culture (eg user packages, files and folders, various graphics and music programs); activation of cognitive activity (for example, by the use of computer visual learning information, game situations, the ability to select and control the mode of learning activities); deepening of interdisciplinary links, up-to-date information analysis, as well as audiovisual methods, solution of examples or issues in various fields of science, and others.

These pedagogical goals are mainly determined by the use of computer technologies in education. In their use as a source of education, its quality and effectiveness will be ensured by:

- Provision of modern information technologies, development of program-methodological possibilities, informing of knowledge, intensification of educational process, application of electronic form of control of educational results;

- creation and use of knowledge base for formation of culture of educational activity;

- Use of new information technologies as environmental justice and self-knowledge;

- the use of computer technology as an educational facility;

- The use of computer technology in educational institutions for information and methodological support and management of educational and educational process;

- use of computer technologies as means of communication;

- Computer technologies can be used to automate the process of analyzing the results of experiments (laboratory, visual, practical) and in the management of manuals.

Taking into account the advantages of computer technologies, the task of improving the content, forms and methods of teaching, establishing the scientific and methodological basis for the use of fast, high-quality, active and advanced methods of teaching, including computer technologies, includes:

- Development of the structure of the content of an educational subject and its expression in the form of a system of educational elements;

- Determining the level of assimilation of the learning elements;

- Determining the initial level of students' knowledge, which is determined by the level of learning material on which the content of the subject is based;

- setting limits on the educational resources and organizational forms, etc.

The development of methodological and practical application of modern computer technologies in education and its use for pedagogical education includes:

- improvement of educational process management process; scientific pedagogical information, automated data, information and methodological materials and communication network bases; creation of methodical education system; the development of students' intellectual abilities, the formation of their independent knowledge, the creation of information and educational experimental research activities, the analysis of various types of independent information; computer-based testing, diagnostic methodological control and computer-aided detection of students, creation and use of non-traditional electronic resources.

The use of computer technology in the educational process helps to increase students' intellectual abilities based on information technology. For this reason:

- fully equipped educational institutions with information technologies;

- Development of specific methods of using computer technologies;

- Development of important ways to develop the personality of learners in developing education;

- development of optimal ways of using modern information technologies and creation of pedagogical, psychological and methodological manuals to improve the quality and effectiveness of education.

The conclusion is that based on the aforementioned ideas, the subject of "drawing" is based on the use of pedagogical technologies, the technology of computer training, and the creation of electronic forms of training.

The organization of computer training, the creation of electronic forms of training is an educational technology - a set of forms, methods and means of education that ensure the effective achievement of the objectives of the educational process.

The content of the educational process is the acquisition of knowledge in the curriculum. The effectiveness of the educational process depends on the content, structure, content and quality of information provided to students.

Improvement of the content, forms and methods of traditional education, taking into account the advantages of computer technologies, the development of scientific and methodological bases for the use of fast, high-quality, active and advanced methods of teaching, including computer technologies, computer science education. can develop. Therefore, in the next paragraph of the research, the introduction of modern teaching technology, the use of non-traditional teaching resources, and the use of screens and other modern technical devices in the classroom were partly abandoned.

III. LIST OF USED LITERATURES.

1.Саидаҳмедова Дилафруз Саидбаҳромовна. Касб-ҳунар коллежларида техник чизмачилик фанини ўқитишда компьютер технологияларидан фойдаланиш Педагогика фанлари номзоди илмий даражасини олиш учун ёзилган. Диссертация. Тошкент – 2011

2.Абдуқодиров А.А., Ҳайитов А.Ғ., Шодиев Р.Р. Ахборот технологиялари: Акад.лицей ва касб-ҳунар коллежлари учун дарслик. – Тошкент: Ўқитувчи, 2002. – 148 б.

3.Абдуқодиров А.А. Масофали ўқитиш моделлари ва уларнинг синфлари // Физика, математика, информатика. –Тошкент, 2004. – №5. – Б. 50-56.

4.Анварова Н.А. Касб-ҳунар коллежларида кимё дарсларини компьютер технологиялари асосида ўтиш методикаси: Пед.фан.ном.дисс.–Тошкент:2007. – 155 б.

5.Ёдгоров Н.Ж. Фазовий алмаштиришлар жараёнида ўқувчиларнинг билиш фаолиятини ривожлантириш омиллари. Пед.фан.ном.дисс. –Тошкент: 2009. – 151 б.

6.БоқиевР. Компьютерлаштирилган укув жараёнининг инсон - машина системаси сифатидаги айрим муаммолари //Педагогик таълим. – Тошкент, 2000. – №1. – Б. 93-94.

7.Хамракулов А.К. Чизма геометрияни ўқитишда компьютер технологияларини қўллаш методикаси (“Чизма геометрия ва муҳандислик графикаси” фани мисолида): Пед.фан.ном. дисс. – Тошкент: 2009. – 143 б.

8.Гребенников К.А. Компьютерная графика как средство профессиональной подготовки специалистов-дизайнеров: на материалах среднего профессионального образования: Дисс... канд.пед.наук:

9. Раҳмонов И.Т. Чизмачиликдан дидактик ўйинлар. – Тошкент: Ўқитувчи, 1992.

10. Рахмонов И.Т. Чизмаларни чизиш ва ўқиш. – Тошкент: Ўқитувчи, 1992. – 112 б.

11. Рихсибоев Т. Компьютер графикаси. –Тошкент: 2006. – 160 б.

12. Рихсибоев Т., Саидаҳмедова Д.С., Ф.Алимов. Чизмачилик дарсларида AutoCAD дастури ёрдамида чизмаларни бажариш. Методик қўлланма. – Тошкент: Республика таълим маркази, 2009. – 87 б.