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Content of the Science of Architecture Construction and Its Current Status of Teaching

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Abstract: the course of building drawing at the university is aimed at the formation of the graphic culture of students, as well as the creative potential of the personality. Most effective work in this area, especially in teaching construction drawing, is achieved through the use of modern graphics software. Among the graphics programs in the field of architecture in the field of architecture, ArchiCAD is the most advanced, which is an effective way to illustrate the day of a subject by transitioning to a three-dimensional state of drawings in the eyes of students. Therefore, the practical significance of graphic programs and their descriptions occupy a special place in the coverage of the whole essence of this science.

Keywords: graphic education, construction drawing, graphic applications, graphics, information and communication, spatial imagination, architecture, drawing, didactics, engineering graphics.

In the developed countries of the world, there is a growing focus on the effectiveness of teaching programs related to construction drawing in higher education institutions. The reason is that today the construction industry is developing very rapidly in developed countries. The technology of teaching engineering graphics sciences is changing significantly towards quality. Special attention is paid to filling modern educational institutions with the latest software, multimedia graphics and educational complexes. Also, one of the main requirements for student competencies in the curricula of educational institutions of developed countries is the acquisition of engineering computer graphics.

Effective research is being conducted around the world in the field of introduction of graphic programs in the field of education and their widespread application in the teaching of architectural design. At the same time, it is important to create an educational environment based on the development of a methodological system for the use of automated systems in the creation of drawings of complex products and the creation of drawings of complex products on the basis of advanced foreign experience. At the same time, in the process of teaching architectural construction drawing, the development of methods of comparative teaching of modern graphics programs, methods of directing students to independent creative activity, scientific research is of great importance.

Technical design includes a master plan in addition to the general architectural construction drawings. In addition to the buildings designed in the master plan, pre-constructed buildings, engineering structures, roads inside the site, sidewalks, trees, flower beds should be shown.[1]. The drawing shows the general plan of the development enterprise. In this case, the specification includes the improvement of the area where the shop buildings are located, the management rooms and railway departments, the designation of individual buildings. The working scheme is based on the approved technical design.

[1] BIM Handbook_ A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors (PDFDrive.com) Page 34

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The working drawing includes general architectural construction drawings of the building, plan, facade and sections, plan elements, plan of subdivisions, fragments of facades, assembly diagrams of foundations, drawings of structural elements of fences, walls, roofs, details and joints, drawings of sanitary facilities enters. Drawings should be made based on the requirements of state standards.

Drawing execution and marking. Construction of buildings is divided into general and special construction. The construction of the building is included in the general construction work along with the decoration work. Special works include water, gas, heating, ventilation, electricity, telephone and landscaping of the building. Therefore, in construction, each work is performed separately on the basis of individual work drawings[2]. Each drawing is marked with its own name and brand, the main inscription is written. In the project, the brand is marked with capital letters belonging to this section. The sections of the work drawer are named as follows and marked with marks.

1. About construction drawings: Construction drawing has a special place among geometric projection, machine construction drawing and other sections of drawing. On the basis of the construction scheme it is possible to build individual houses, high-rise buildings, various engineering structures (canals, bridges, etc.).

2 The overall construction design begins with the construction site leveling project. It determines the location of underground works, ie sewerage, installation of hot and water pipes, meeting of electricity and telephone networks with the main network. In addition to the above, the plan of this new type of project shows the layout of the building, the location of the individual elements of the foundation and sections. If in 1975 more than a third of the houses built by the state were built on the basis of new types of projects, now more than 60 such projects are being built.[3]. This allows you to plan the cost of the project and sematals in a way that is more convenient for the family living in the same house. Architectural construction and engineering buildings are built based on designs and estimates. The project includes drawings, explanatory note and estimate of the building to be constructed.

The drawing shows the full cost of the building if the work to be done is in the estimate. In addition, the estimate indicates the volume of individual works, construction materials and their number, the number of skilled workers and construction machinery. Project documents are prepared by individual project organizations and institutes. Different entries are made when creating and laying out projects. In addition, the estimate indicates the volume of some work, the number of construction mechanisms. Project documents are prepared by individual project organizations and institutes. In addition to the fonts specified in the standards, various architectural and promstroyproekt fonts are used in writing these records. The width of the narrow architectural font is equal to ¼… 1/8 of the height[4].

The thickness of the letters is taken to be 1/15… 1/20 of its height. The height of the building is taken on the basis of the mark of the surface, which is conditionally assumed to be zero. The zero mark is taken as the floor or base of the building. Based on this, the lower part is indicated by a minus (-) and the upper part by a plus (-) sign. If the dimensions of standard rolling parts are given in one projection, their lengths should be given in the same view. Dimensions are not completely set in the master plans. Dimensions for the facade of the building are set only on its cross-section and length[5].

The plans include the distances between the axes of the wall, the internal dimensions of all the rooms, the dimensions of the window and door spaces, as well as the dimensions of the walls, the length and width of the shelves. The height of the sections is determined by the height of the rooms, doors and

[2] Textbook "Computer Graphics" Saydaliev SS 50 pages
[3] Textbook "Construction Drawing" Hamrakulova MM page 15
[4] http://helpeng.ru/template/library/eskd/gost_2.304-81.pdf
[5] Arxikad 9 uchebnik dnl1320 112-bet

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windows, the depth of the foundation, the thickness of the reinforced concrete structures between the floors of the building and other dimensions.[6].

Buildings are divided into three different groups according to their use: Civil buildings are buildings designed for human habitation. They are divided into residential and public buildings (clubs, theaters, schools, hospitals). Industrial buildings — such buildings serve to house vehicles for transport and industrial production. These include factories, plants, power plants, heating buildings, garages, etc. Agricultural buildings - barns, warehouses, buildings for storage of fertilizers and chemicals, agricultural machinery and buildings to be repaired. In addition, the buildings are divided into high-rise buildings (above 9 floors), multi-storey (above 3 floors) and low-rise buildings. The calculation of floors also includes basements, attics and pit floors of not less than 2m. Rooms located at the same height in buildings are called floors. Floors above ground level are called surface layers[7]. A floor that is not more than half the height of the rooms and not lower than the ground level in the project is called a sokol. The floor in the attic is called the attic. The floor where the engineering equipment is located is called the technical floor. Buildings are divided into stone and wooden buildings depending on what material they are made of. Stone buildings include buildings whose walls are made of natural or artificial stone. Wooden buildings include buildings with wooden walls. Construction of the building always begins with the preparation of design and estimate documentation (LSX). Construction norms and rules (SNiP) are always followed in the preparation of such design and estimate documentation. The design assignment shall be drawn up by the designer and the chief designer in accordance with the approved legislation. Working papers will be developed on the basis of the approved project. The working project is developed on the basis of the approved feasibility study, feasibility studies and project assignment. Typical projects are used in the design of civil, industrial and agricultural buildings. Typical projects are reusable projects that include working drawings, necessary construction and installation work, explanatory notes and estimates. Brands of the set on the basis of working drawings. The construction of the building involves a very large amount of work. These works are divided into basic construction and specialized works. Major construction works include construction and decoration of the building, provision of specialized works and landscaping of the building. GOST 21. 101 developed according to feasibility studies and project assignment. Typical projects are used in the design of civil, industrial and agricultural buildings. Typical projects are reusable projects that include working drawings, necessary construction and installation work, explanatory notes and estimates. Brands of the set on the basis of working drawings. The construction of the building involves a very large amount of work. These works are divided into basic construction and specialized works. Major construction works include construction and decoration of the building, provision of specialized works and landscaping of the building. GOST 21. 101 developed according to feasibility studies and project assignment. Typical projects are used in the design of civil, industrial and agricultural buildings. Typical projects are reusable projects that include working drawings, necessary construction and installation work, explanatory notes and estimates. Brands of the set on the basis of working drawings. The construction of the building involves a very large amount of work. These works are divided into basic construction and specialized works. Major construction works include construction and decoration of the building, provision of specialized works and landscaping of the building. GOST 21. 101 Typical projects are reusable projects that include working drawings, necessary construction and installation work, explanatory notes and estimates. Brands of the set on the basis of working drawings. The construction of the building involves a very large amount of work. These works are divided into basic construction and specialized works. Major

[6] Ahmedova D. “Architectural solution of multi-storey buildings” p

[7] BIM Handbook_ A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors (PDFDrive.com) Page 72

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According to 79, each set of working drawings is given a separate name, which indicates the basis of the symbols and the brands of the main set.

1. General plan, transport construction .... BP
2. General plan .... BP
3. Inshoot transport .... TR
4. Production technology .... TX
5. Communication technology .... TK
6. Air installations .... VS
7. Automation .... A
8. Power supply .... ES
9. Electric melting .... EO
10. Powerful electrical device .... ES
11. Gas supply .... GS
12. External gas supply network and facilities ..... NG
13. Heating network .... TS
14. Communication and signaling .... SS
15. Architectural solutions .... AR
16. Interer .... .A
17. Reinforced concrete structures .... KJ
18. Metal structures .... KM
19. Metal constructions divided into details ..... .KMD
20. Wooden constructions .... KD
21. Architectural and construction solutions .... AS
22. Anti-corrosion structures .... AZ
23. Heating, Ventilation and Air Purification .... OV

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24. Internal plumbing and sewerage .... VK

25. External network of water supply and sewerage …… NK

Depending on the marks placed on the drawings, it will be determined to which work drawing the project belongs[8].

It is well known that people differ from each other in many ways. For example, some people remember what they saw and experienced very well, and they can remember exactly when they need to. Some have the ability to describe any object they see with the naked eye down to the smallest detail. Others think more clearly about what they have heard, some are able to express their feelings in simple, fluent language, while others are based on fantasies of different content and form. The field of construction drawing is no exception, i.e. some tend to add elements of fantasy to every drawing, of course. This means that people's impressions of the outside world and their ability to organize them in the mind will be different. On the other hand, there are professions that allow a person to perfect one or another of these qualities. For example, if an operator working on large automatic control systems learns to focus on any small changes, the constructor becomes a master of abstract mathematical calculations. This means that a person's reflection in the mind of the properties and characteristics of the external world depends on the growth of his abilities and the development of his professional skills. That is why we focus on the role of cognitive processes - perception, perception, memory, attention, thinking, imagination, will and emotions - in human life and professional development, which are important forms of reflection of the mind. the reflection in the mind of a person of the properties and characteristics of the external world depends on the growth of his abilities and the development of his professional skills. That is why we focus on the role of cognitive processes - perception, perception, memory, attention, thinking, imagination, will and emotions - in human life and professional development, which are important forms of reflection of the mind. the reflection in the mind of a person of the properties and characteristics of the external world depends on the growth of his abilities and the development of his professional skills. That is why we focus on the role of cognitive processes - perception, perception, memory, attention, thinking, imagination, will and emotions - in human life and professional development, which are important forms of reflection of the mind.

These processes are very close and familiar to man. Because each of us knows that we have a consciousness, some individual and integral features of things and events around us. We also know that these things and events bring us unique emotional forgiveness in each individual situation. For example, a person who has information about a drawing from a book will not ask others if he or she is actually reading the book. Such work is a natural process in itself. Just by reading the subject of descriptive geometry last night during the exam, you are more interested in why you can't remember the material you studied in front of the teacher now, and you come to the conclusion, "I need to work on my memory."

In fact, cognitive processes are also, in a sense, controlled processes, and if you want to expand your capabilities or increase your level of ability, you need to know certain rules and features related to these processes.

The human mind is a whole at a glance, in fact it consists of some separate processes. These processes are perceptions, perception, memory, attention, thinking, speech, imagination, ability, and so on. These processes are so interconnected that it is difficult to imagine one without the other. For example, don’t think about what you see and perceive, do you know its essence? You will remember the drawings you have seen or read carefully. Or to think about something geometric geometry, we need at the same

[8] Textbook "Construction Drawing" Hamrakulova MM 42 pages

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time both images of previous perceptions, and the ability to remember, as well as our inner speech, will, and attention. Even if we accidentally come across graphic geometry problems, our reaction is not only emotional, but also emotional.[9]. All of these are events related to psychological operations, processes. Therefore, they are regularly studied as a problem in both pedagogy and psychology.

With the advent of sophisticated computer technology, man's interest in his own mental processes has increased even more. Now we talk a lot about receiving information (similar to a process called traditional perception), reusing it (similar to thinking) and storing it (memory). But this raises the question of the importance and upbringing of natural living processes in man.

An analogous situation also occurs frequently in our memory. When we come across a question about science, we think: where did I see it? You may not remember, but the structure of the issue, the principle of processing, and other appearances seem familiar. This should also be explained in such a way that what a person sees and experiences is actually stored in the brain due to exercise, and we can only bring some of it out into the realm of consciousness. It is only when we are sick or anxious about something that all sorts of thoughts come to our brains. Those are the involuntary restoration of what actually exists.

Experiments have shown that involuntary students are more likely to memorize what they see in them when they pay attention to mental processes in teaching drawing. Therefore, in the course of the lesson, they are shown visual aids on the topic. We have enough information that the achievements in this area will be highly effective.

The lack of specialists in construction drawing in academic lyceums and professional colleges, as well as the fact that among other specialists they teach construction drawing by completing other fields, has some effect on the mastery of students.

The main reason why the information in the mind is actually less than in our brains is that a person selects and selects any information, does not pay attention to what he considers "insignificant" for himself, and does not remember. He processes and changes all the available information in his mind in a unique way. That is why it is said that each person is unique and irreversible, individual.

Today's academic lyceums and professional colleges have high requirements for teaching the subject of construction drawing. Extensive work is underway to meet the requirements. The emerging specialists, of course, remain the demand of the time for the development of the state, the development of science and technology, the development of science, the training of personnel that will be the foundation for a new generation. Based on this, we face the following problems in training.

As a result of our observations, it is clear that the rate of mastering the subject in the teaching of construction and drawing is declining. For example, some theoretical knowledge and graphic skills included in the content of graphic education are formed in the school drawing course. Therefore, in the process of coming to higher education, students will have some knowledge of this subject. When they study geometry at school, they also form the basis for the science of construction drawing. However, the ratio of acquired knowledge to the level of knowledge generated by the subject of drawing gives a ground low. Therefore, 30% in some of them and up to 60% in others show that spatial representations have not been formed. This remains a topical issue for drawing science. Because, the negative consequences of this are that, as a result, students do not develop spatial imagination, which is the main foundation of the science of drawing, which leads to a lack of perfect personnel in the field. The essence and basis of this science can be mastered and understood only by those who have formed,

[9] Textbook "Engineering Graphics" H.Abidov page 61

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developed, skills and qualifications of spatial imagination. This can be caused by the following psychological, pedagogical and methodological aspects, namely:

- difficulty or misunderstanding of the subject by the student;
- The information in the description of the new topic is familiar to the student and is repetitive for him, that is, does not arouse any interest;
- Lack of spatial imagination;
- does not fully understand the topic;
- Lack of spatial imagination on topics that require imagination;
- In the course of the lesson the teacher does not perform independent work, homework, graphic work on the formation and development of the student, arousing a certain level of interest in the student;
- the student does not strengthen the knowledge formed by the growing interest in graphic education;
- Students who are interested in graphic education are interested in its expansion, growth, improvement, development;
- students are busy with other activities and neglect during the lesson, etc. Such cases are rare in the work of experienced teachers, but they are common.

In academic lyceums and professional colleges, topics covered during the school year are taught in a broad and complex way. Therefore, this subject allows students to be interested in graphic education. In the traditional teaching process, the teacher organizes the lesson in a way that is mainly suitable for low-achieving students. At the same time, excellent students in the classroom find the topic description boring and weaken their interest, while students who have difficulty mastering it are left behind in the learning process, even if they want to. Because the difference between the mastery indicators of students does not allow the activation of the learning process. Such a process can even be observed in spatial imagination among students. This is because the interest in graphic education among students is low, moderate, formation-oriented, The fact that the teaching process is different in its formation creates problems for the teacher. Therefore, the development of spatial imagination in students should be studied as both a pedagogical and psychological problem.

In the process of teaching graphic education to students of different levels of drawing, the teacher organizes the lesson taking into account the lack of interest in graphic education and the development of low-level students. awakens If the teacher does the opposite, the mastery of students with low levels of interest in graphic education will decrease. At the same time, it requires the development of factors that motivate students to take an interest in graphic education, based on their psychological characteristics.

In psychology, the concept of imagination, the perception, the embodiment of a perceived perceived object or event in the human mind. The aim of these disciplines 'reliance on graphic education was limited to putting paper knowledge on paper only, in which case learners would need tons of papers and teaching materials. It is very difficult to document the situation between the educator and the learner on paper, because such a complex process takes place in the organic relationship with the educator and the learner.[10].

[10] https://hozir.org/ozbekiston-respublikasi-xalq-talimi-vazirligi-a-qodiriy-nomida-v2.htmlpage=7

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Therefore, it will be possible to consolidate and assimilate knowledge through an interest in graphic education. The teacher communicates his knowledge to the students through teaching aids and activates the effective teaching of the lesson with the help of factors that stimulate interest in graphic education. Students, on the other hand, use these tools to acquire knowledge and, in turn, try to shape and develop the information provided in their imaginations through an interest in graphic learning. In the construction drawing class, for example, the views of the building, a clear image, the construction of its section based on two views, drawing a clear image based on the views, or the cutting planes in the sections and sections are done on imaginary objects based on students' imagination. . Interest in graphic education plays an important role in this. Therefore, the student's interest in graphic education is considered a major problem of psychological and pedagogical significance in the learning process. This is an important factor in developing students 'interest in graphic education in solving an important psychological and pedagogical problem. The judicious use of interest in graphic education is an effective means of solving this problem.

The study of these problems in the education system, the factors that negatively affect the activation of the learning process in the above order are somewhat highlighted in the research work of psychologists and pedagogical scientists. They emphasize that the introduction of new methods and tools in the field of education will lead to further improvement of the educational process in the future. The application of methodological tools in education, in particular, the development of their interest in graphic education in the process of teaching drawing subjects to students in higher education institutions on the basis of interest in graphic education, gives several positive results.

The course process is the student's mental activity, that is, the activity of thinking. To do this, it is necessary to set challenging tasks for students, and as a result to teach them to sharpen their mental activity, to strive. In normal lessons, the teacher devotes a lot of time in the timeline to the description of a new topic. As a result, in many cases, the consolidation of the previous topic, its relevance to the new and, most importantly, their knowledge does not have time to be monitored and evaluated. Unfortunately, many of our educators believe that the organization of the teaching process is only the transmission of new knowledge, and thus consider the functioning of the student, the development of their intellectual potential as a secondary issue. As a result, the student gets bored of the existing subject and has to wait for the call.

There are a number of ways to overcome such problems, including enriching the course content with interesting factual, historical materials, including the rational use of their interest in graphic education. To do this, it is necessary to develop students' interest in graphic education, to use methods derived from non-traditional education, and, of course, to develop its content and methodology. This is a very important pedagogical problem. After all, the materials in the curriculum not only develop the individual performance of the student, their interest in graphic education, but also serve to bring them to the forefront of the activity.

A series of interesting information on the topics, educational test programs for self-control, software didactic games designed to facilitate mastering and interesting comprehension encourage students to engage individually. Even when necessary, it can organize learning activities without a teacher and the negative effects can not be felt in it.

It should be noted that the interest of students in graphic education in drawing education is due to the activity of students, the development of spatial imagination, they achieve high efficiency in teaching due to the improvement of learning activities, ie the learning process is accelerated.

The degree to which the learning material is comprehensible, reflected in their minds, and the formation of knowledge based on this information is determined by the principle of demonstration of education. It improves the quality of the teaching process, making it easier for students to learn.

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Because from a psychological point of view, as a result of the active work of all the sensory analyzers of the student in this process, the scientific knowledge of the object is reflected and stored in memory. The formation of this or that event, historical memory in the brain, firstly, increases the level of psychological readiness of the student to learn, and secondly, the expected result from it (education) is pedagogically guaranteed. After a long time, it is observed that the same image, that is, an architectural drawing, a picture display, awakens the information in his memory.

Teachers and students also expressed their positive views on the need to provide the educational process with technical means.

A person's ability to think, that is, thinking, is developed through the act of thinking. These are actions such as comparison, analysis-synthesis, generalization, abstraction, concretization.

Another important aspect of using the tool of interest in graphic education is that it helps the student to fully and clearly imagine the concepts of the topic or topic, the reflection of the elements of the imaginary object and its properties in the human mind.

In conclusion, it can be said that direct drawing lessons serve to improve the interest in graphic education, to master each subject and to increase the level of development of spatial imagination in students to 100%.

From their interest in graphic education or their parts based on drawing, construction plan, history, vivid image, facade, interior and other types of views, visible-invisible parts, curricula-exhibition, the test, presented in the form of interesting questions, examples and problems comparing interests to graphic learning, encourages the student to take a realistic approach to the material being studied. It is in the interests of graphic education that the effective and correct use of materials relevant to the content of the topic is facilitated, students are interested in easy mastering of the topic, the lesson process is actively organized, individual movement of the student is accelerated.

This activity is evident in the learning processes organized through the interest in graphic education. Their mutual independence, taking into account their personal views, the desire to master the science of drawing can be a clear example of this. Its use in the classroom also increases efficiency and activates activities.

The following positive aspects occur in the course of a lesson organized through interest in graphic education:

- the integral connection between memory and attention increases;
- increases the student's interest in learning materials and drawing geometry;
- communication between student and teacher is accelerated;
- the student's spatial imagination develops;
- there is interaction in the learning process;
- can quickly and objectively assess the level of knowledge of the teacher and the student;
- the teacher can direct the student to do the gafik work independently;
- encourages the acquisition of independent knowledge;
- encourages the use of literature, teaching aids, the Internet, recommendations and electronic textbooks.

In the course of the lesson, combined with such opportunities, the student not only easily masters the topic, but also learns the knowledge associated with it, an individual approach to events.

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