American Journal of Science and Learning for Development

ISSN 2835-2157
Volume 2 | No 4 | April -2023

Didactic Requirements for the Construction and Design Issues in the Subject of Engineering Graphics and its Training

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Abstract: *This article presents methodological recommendations regarding the didactic requirements for the construction and design issues in drawing science and its training.*

Keywords: *construction, construction, drawing, graphic image, invention, project, creation, creative search, creative issue, design issues.*

Our president expressed confidence in the youth of our country that they are our future.M.Mirziyoyev also stated in his speeches:"of course, only you, who have a thorough grasp of modern knowledge and professions, who think independently, who always live with a sense of belonging to the fate of el yurt, are able to boldly climb the field and solve the tasks that our dear youth set before us today, life itself." [1] In the younger generation, the role of drawing science is great in the formation of technical knowledge, in their technical and graphic literacy, in raising them so that they can "language" with various technical means. [2, 17]

Even in labor education classes with design issues, students are engaged in making uncomplicated models of techniques. They are prepared according to their sample or drawings. In the process of preparing such items, the conditions in the school's workshop are taken into account. Through mechanical engineering drawing, less complex structural issues are solved in educational design. Creativity is a conscious, goal-oriented activity of a person aimed at knowing and transforming existence, as a result of which new, original, previously non-existent material and spiritual blessings are created. [3, 129]

Inventions appear to be objective or subjective to the human society. This should be understood in such a way that the originality (originality) of the ultimate result of Hatto labor is programmed in a certain sense, the zero student solution already exists and can "make a discovery" without even suspecting that it is known to the teacher. In human creative activity, the graphic image performs two interconnected functions. Firstly, drawing is a kind of weapon of thinking, and secondly, a tool that gives thought (idea). That is why in project activities we learn mainly by distinguishing between graphic aspects.

In the process of preparing young constructors who can give a new idea, engage in creativity, design details and objects, it is also necessary to take into account the psychological aspects that occur in them and use it effectively. The idea for any invention is formulated in the human brain. Therefore, when students deal with design issues in drawing science, mental activity is employed in them, and psychological processes are carried out, which are called perception, imagination, imagination, thinking. Therefore, revealing the place of design issues in drawing, even in the development of these psychological aspects in students, is the first relevant aspect of this study.

The condition of the issue, which requires creative research from the student, should provide for the emergence of a problematic situation, and solving should encourage the application of previously

acquired (old) knowledge in new situations, sometimes to independently acquire new ones. Finally, the mandatory nature of creative issues is considered the variability of their solution. Only in this case does an individual search occur, the end of which, that is, the subject, is considered a new result. If there are no possible paths to the solution, then there will be no creation either.

It is important for the teacher to understand from draftsmanship that structural knowledge and competencies in creative matters should be reflected in other elements and why this is done. Let's start with the end of the work. The drawing course will include issues concerning the imaginative transformation of the shape and location of the item, but the ultimate goal of these modifications will be to date the modifications themselves. The role of these issues in the development of figurative thinking of students cannot be denied, but the content (essence) of the amendments, understandable to teachers, remained unknown to students, so that interest in these issues was not aroused.

Issues related to constructive modifications are of great practical importance for students, after all, a certain technical purpose is put in them in an understandable way. Striving to achieve this goal stimulates interest in work. What are the components of basic structural knowledge and skills? Summing up the results of a number of pedagogical studies, it can be said that in many cases they include the following.

1. Knowledge of general (functional, ergonomic, aesthetic and other) requirements for constructions.2. Qualification for reading and performing drawings.3. Qualification of choosing the optimal shape and size of the details.4. Being able to choose the material.5. Knowledge of processing methods.6. Be able to carry out the necessary calculations.7. Knowledge of sample (tipovoy) methods of combining details.8. To be able to use literature of a standard and reference Nature.9. Being able to pass the testing of the generated constructs.10. Knowledge of the rules of the safety technique when working with mechanisms.

The following draw attention when studying the features of solving creative issues, in which constructional elements are introduced by students. 1. The difficulties of students begin with the inability to analyze the initial data of the issue (not finding the main contradiction in the construction, not understanding which requirements the non-existent detail meets and how it should work). This negatively affects the research activities of students and, ultimately, leads to a non-rational solution of the issue.

2. Difficulties in graphically reflecting a constructive idea and mistakes that students make are mainly due to the inability to apply previously formed graphic knowledge in a new situation. In a certain way this is expressed in:

a) inability to choose the optimal amount of images that sufficiently fully and expressively reflect the properties of the structure;

b) inability to choose a scale (scale) that allows you to distinguish the main one in the construction;

c) difficulties in placing images in the drawing (komponovka);

d) errors associated with violation of the general rules of drawing.

3. The performance of images by students, which we conventionally call the "base", is considered a characteristic stage of graphic search, in which, as a rule, an attempt to record the core of the future construction that has arisen in our minds is embodied. Drawing up and teaching structural and design issues in drawing science on the basis of the above methodological proposals, the interest in creative thinking, independent idea and product creation increases in students. This serves as the initial foundation in the upbringing of future constructors, architects.

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