

The Role of Graphic Knowledge and Skills in the Development of Students' Cognitive Interests

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Annotation: The article shows that the role of graphic knowledge and skills in the development of students' cognitive interests is extremely important, and recommendations for the preparation of the teacher of engineering and computer graphics for the lesson are given, as well as the responsibility of the teacher and independent and graphic learning in mastering the science of engineering and computer graphics. Ways to increase the importance of assignments are suggested.

Keywords: Engineering graphics, cognitive interest, teacher's preparation for the lesson, independent graphic assignments, lesson plan, calendar-plan. graphic literacy, checking graphic works.

Introduction. Graphic knowledge and skills play an important role in the development of students' cognitive interests. Here are some ways they can contribute. Graphical skills help students visualize and organize information, which can improve their understanding of complex concepts. Working with graphics requires a creative approach, which helps students develop creativity and thinking. Graphic knowledge helps students better remember information through visual association. Visual association is the process of associating visual images with specific concepts, ideas, or information. When we make visual associations, we make connections between images or pictures and concepts, which help us remember information better and faster. For example, if we try to remember a shopping list, we can create visual associations for each product, representing them in the form of vivid images or pictures. This makes the information memorable and helps us remember the items on the list more easily.

The forms of teaching students are different, and the role of graphic knowledge and skills in the development of their cognitive interests is mainly aimed at acquiring new knowledge for didactic purposes, forming skills and competences in performing graphic work, reading and drawing drawings. depends on such things as knowing. In this case, for students to acquire the necessary theoretical knowledge and practical skills, specially directed educational issues serve as a unique way of forming educational activities. Based on this, the students are given the tasks of projection and learning to read the drawing. When students solve these problems together with the teacher, they develop concepts.

In engineering and computer graphics classes, it is important to develop the following imagination and characteristics in students:

- a) Enriching the imagination in the processes of knowledge acquisition, accurate management (focus, memory, and attention focused on a specific goal).
- b) Students' speech abilities, ability to understand and use different sign systems (symbolic, graphic, and pictorial).

In an educational context, visual associations can be used to improve recall of material, organize information, and improve understanding of complex concepts. Creating visual connections between different elements helps students better understand the lesson material and improves cognitive processes. Development of analytical skills: Working with graphics requires analytical thinking and helps to develop the skills of analyzing and synthesizing information.

Increase motivation: the use of graphics in the learning process makes learning more interesting and exciting for students, which increases their motivation to learn. Thus, graphic knowledge and skills play an important role in the development of educational interests in students, help them to better understand information, develop creative thinking and analytical skills, and increase motivation to study.

Any type of activity, including teacher training, requires advance preparation and planning. The curriculum is not only limited to the necessary knowledge and skills to be acquired by students, but also determines the number of hours of study recommended for learning each subject. This stage of preparation is the direct duty of the teacher, and the teacher is prepared for it based on the educational programs. Taking into account the local conditions, the level of preparation of students and relying on his pedagogical experience, the teacher can slightly change the number of hours allocated to the study of this or that topic, as well as independently distribute the educational material to each hour. These works are carried out before the academic year, during the calendar-planning period based on the training plan. A lesson plan is prepared for each lesson.

Despite the fact that as a result of a number of objective and subjective influences, the teacher is sometimes forced to make changes to the pre-prepared calendar-plan, he should consider the careful development of the plan in advance as a necessary and responsible stage of his professional activity. The quality of the plan is the information, practical skills and competencies that the teacher wants to teach the students, the nature of the difficulties associated with learning each section of the program, and how clear and complete the level of preparation of the students is. is defined by imagination. The teacher prepares lesson plans throughout the year based on the calendar-plan and correctly determines the information necessary for making a plan for the next year.

Students' knowledge of engineering and computer graphics, their interest in graphic literacy depends on a number of influences.

The main of these conditions are as follows:

- The study of engineering and computer graphics, like other subjects, should be educational in nature and should be conducted on a highly scientific basis. The teacher should always explain the connections between theory and practice. In the first lessons, the importance of engineering and computer graphics in the development of technology should be explained to the students. Students should acquire the knowledge and skills in Engineering and Computer Graphics necessary for modern manufacturing and further education.
- In the process of preparing for the lesson, the teacher should clearly imagine the structure, size and content of the educational material. It is necessary to determine the purpose and tasks of the lesson in advance. When preparing for the lesson and passing it, you should not work according to the familiar scheme and template every time.
- In order for students to gain solid knowledge of the basics of graphic literacy, the teacher must have a deep knowledge of the theoretical and practical foundations of engineering and computer graphics. He should also have high methodological skills in teaching science, the ability to interest students in science.

The teacher should always remember that the end and result of the lesson, students' attitude and interest in science, are directly related to their preparation, knowledge and skills. Negligence, irresponsibility and other shortcomings always have a negative impact on the results of working

with students. The following words of A.S. Makarenko are very relevant in this regard: "If your work is always accompanied by failures and shortcomings, if at every step it seems that you do not know your job, you will not achieve anything other than discrimination and all kinds of sarcasm".

It is necessary for the teacher to carefully study the curriculum of engineering and computer graphics, to understand its main direction and content, to know clearly its purpose and tasks.

Students of technical and pedagogic universities (institutes, technical schools) must complete the mandatory individual graphic tasks specified in the program of engineering and computer graphics science and work assigned to check their theoretical knowledge. A graphic task, i.e. a work done individually, means a drawing done independently at home (outside of class) based on the topic covered. Graphic work is performed in a certain format in accordance with standard rules.

The formation of graphic knowledge among students is a complex process and is closely connected with the educational process. Taking into account the unique characteristics of all students in the educational process, the possibility of taking a lesson will not be as high as an individual approach to educational and graphic work. Therefore, the teacher can use the opportunities that he could not use during the lesson with students by doing independent and graphic work. Many years of observations show that students mainly acquire solid knowledge and skills by doing individual educational graphic work. Because the theoretical knowledge given during the lesson is mainly reinforced in practice through graphic work.

A step-by-step approach to graphic design works best. The first check can be done after the students draw the graphic work in thin lines. In this case, errors in the way the student placed the drawing on the paper, its border (frame), and the main text in the lower right corner of the drawing are checked. The drawing scale, dimensions, and geometric constructions are carefully observed. If the requirements of the standard are met correctly, the pencil will write "Permission to entronement" and the date of inspection will be marked.

If the standard requirements are violated, there are mistakes in the drawing, it is better to explain the topic to the student again. Such drawing shall be marked as "Corrected" and the date of inspection shall be marked. In this way, it is necessary to repeatedly check the drawing until it is error-free, and explain the ways of correcting the mistakes. Through subsequent checks, when working with students individually, the teacher will find out which student can recommend a variant of graphic work of which complexity, and to which one can summarize or explain the topic in detail.

A second check can be done after the drawings are in place. It is important that the thicknesses of the line types are the same throughout the drawing. Often, students do not draw the size and center lines as required by the standard, they draw them from the contour of the detail, the output line is more than the dimension line, that is, they do not delete more than 3-5 mm. The main goal is to fully comply with the requirements of the standard. In the final check, the main entry is checked for correct spelling and graded.

Some students make mistakes even at the last stage of drawing. In such a situation, it is necessary to allow to correct the error of that drawing without redrawing the drawing. A pencil should be used to check and correct errors in drawings. Because the students are worried when they see an ink pen in the hand of some teachers and think that "now they will paint my drawing in ink."

During the evaluation of graphic works, the fact that the drawing is submitted on time, that is, within the specified period, and its quality is taken into account.

CONCLUSION instead, it can be said that if the teacher attaches great importance to the fact that the level of complexity increases when creating independent and graphic tasks for students, the mastery of science and interest in science will be higher. Considering the importance of

graphic literacy, graphic knowledge and skills in the development of students' cognitive interests, we believe that it is appropriate to conduct training for students based on their life and direction in the teaching of engineering graphics.

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