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FORMING STUDENTS' GRAPHIC COMPETENCES WITH THE HELP OF COMPARATIVE TEACHING AS A PEDAGOGICAL PROBLEM

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Abstract
This article considers the issue of using comparative teaching methods in the formation of students graphic competencies as a pedagogical problem. Graphic literacy is an important competency in modern education, and interactive and comparative teaching methods are necessary for its effective development. The article describes the theoretical foundations, practical possibilities of comparative teaching, and proposals for its integration into the educational process.

Keywords: Comparative teaching, graphic competence, pedagogical problem, visual thinking, teaching methods, comparison, analytical thinking.

Introduction

In the modern education system, one of the important tasks is to teach students to work with digital and visual information. In particular, the formation of graphic competencies - that is, the development of skills in working with projection and construction drawings - is considered extremely relevant in today's information society. However, traditional teaching methods do not provide sufficient effectiveness in the formation of these competencies. For this reason, the comparative teaching approach encourages students to actively think, to gain deeper knowledge through comparison and analysis.

Comparative learning (graphic programs and traditional) is a teaching method that allows students to identify differences and similarities based on the comparison of several objects, phenomena, or concepts. Through this method, students acquire the following skills:

The student will have the competence to transform information into a graphic image. The student can process graphic information and organize it logically, based on his/her level of knowledge.

Analyzes drawings correctly and uses them appropriately, understanding their level of complexity. Can sort through multidisciplinary sources

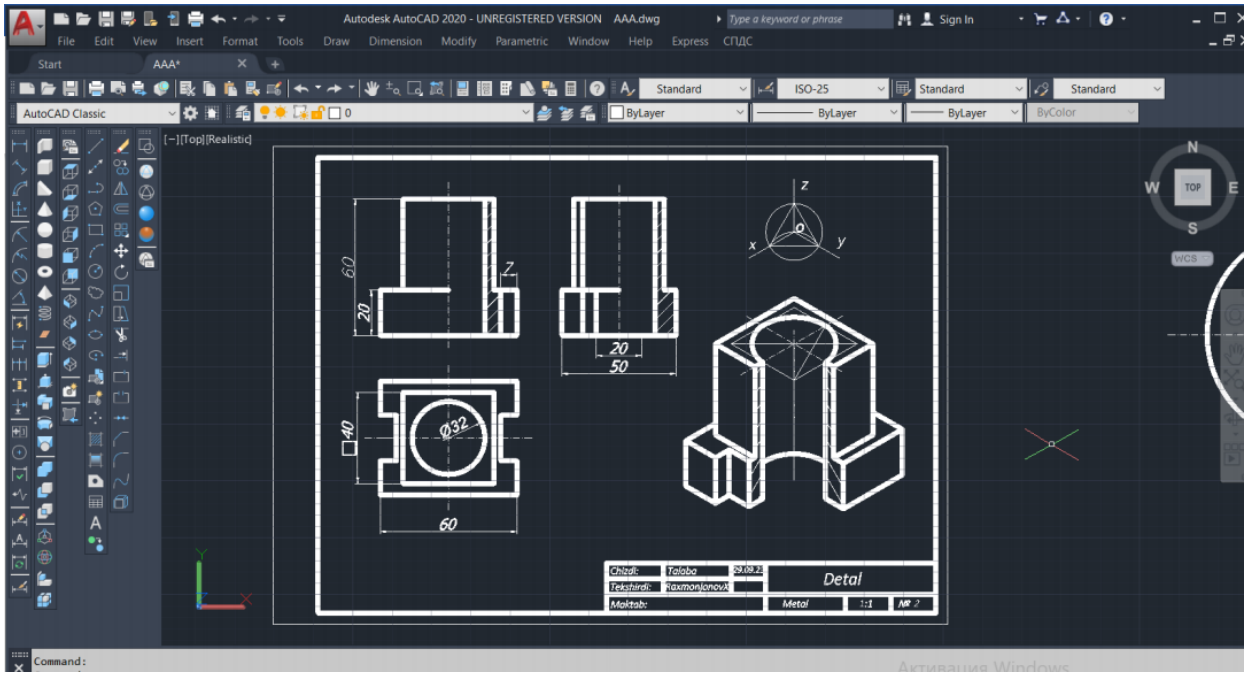
The drawing can identify mistakes. By analyzing why they made them, they can avoid future mistakes and know which path to take in such situations. Graphic competence is the ability to understand, create, and analyze information in graphical form.

This qualification is especially important in STEM subjects, such as economics, statistical analysis, and information technology.

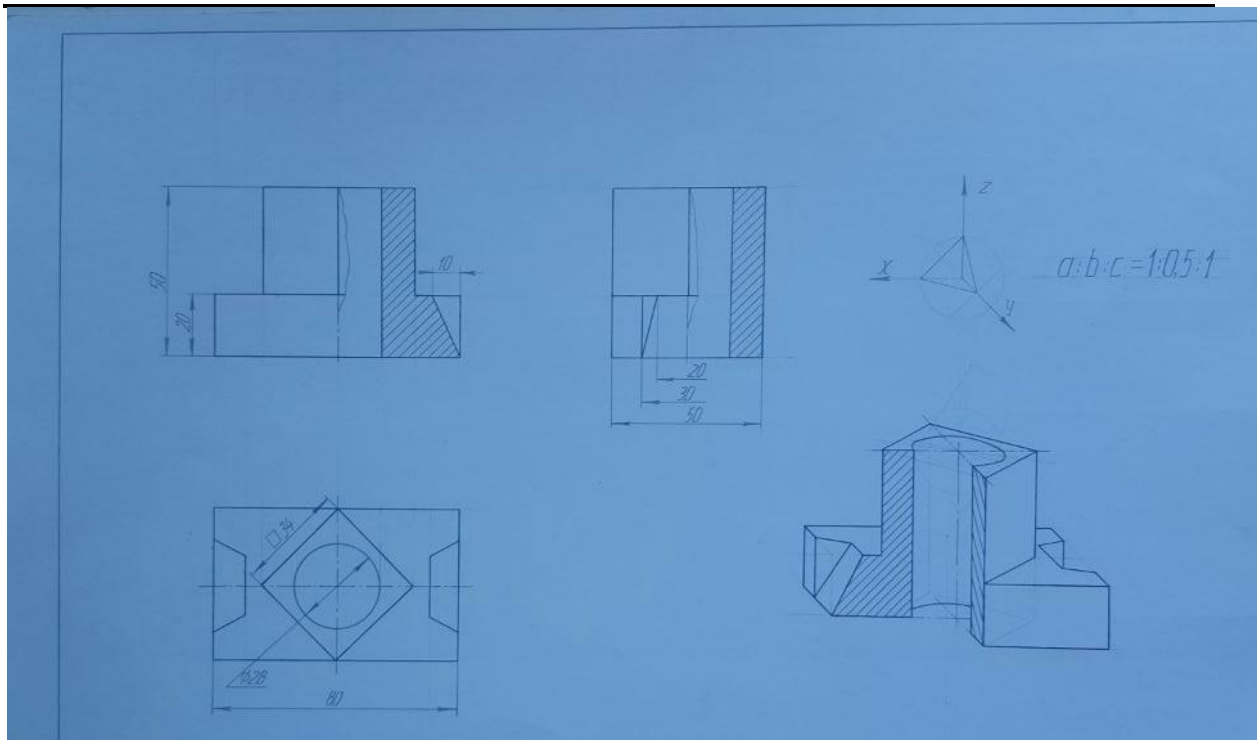
It is far from the notion that a drawing made using a program cannot develop a student's thinking skills. Memorizing the program's panels and being able to use them creatively is also very useful for developing spatial thinking, and is effective in illuminating various possibilities.The following problems arise when forming graphic competence through comparative learning:

Lack of didactic materials: Visual aids suitable for graphic comparison are required. Below we will consider drawing using the AutoCAD program as an example. A drawing drawn in a graphic program differs from a work drawn in a practical way (ruler, compass, paper, etc.) in the stage of execution. The work done in the program is much more convenient, but it requires studying a special training course to complete it. The problem is that a computer with a graphics program and funds are required to study in the course.

Methodological training of teachers. In order to effectively conduct comparative teaching, teachers must have special methodologies. The problem is that these methodologies are not sufficiently developed and there are difficulties in mastering them by teachers. Low motivation of students: If they do not understand the importance of graphic analysis, they may be indifferent to it. Information overload: Most of the graphical information searched on the Internet can be confusing for students, and graphical tutorials can help them know which ones are correct and accurate. For example, a student looking for a solution to a moderately complex drawing problem should first have fundamental knowledge. He or she will create a model of the data in a graphics program and then check it. If the drawing does not look like the drawing model in the program, then he or she can conclude that the given problem is wrong.



drawing 1



drawing 2

We will compare and analyze drawing 1 and drawing 2. Drawing 1 was made in AutoCAD. This work is much more convenient and has many advantages over the traditional method (drawing 2) in terms of storage, transfer, and output, but since drawing a drawing in the traditional method requires an algorithm, thinking about how to find it increases the student's level of knowledge.

Suggestions and solutions. Introducing comparative graphic exercises: For example, comparing and analyzing two different infographics.Integrated tasks: Tasks aimed at developing graphic competence in mathematics, geography, and economics.Teaching graphic visualization tools: Developing skills in creating drawings using modern graphic programs such as AutoCAD and KOMPAS. Discussion-based learning: Achieving deeper understanding through group analysis of drawings and exchange of ideas.

Comparative teaching is one of the effective methods in forming students' graphic competencies. It provides not only analysis of graphic works, but also consolidation of knowledge based on deep thinking and reasoning. As a teacher, the correct integration of this method into the educational process and the formation of students as active participants is a priority task of todays education.

The modern education system requires students to acquire not only theoretical knowledge, but also practical skills and competencies. In particular, graphic competencies that is, the skills of analyzing graphic data, working with drawings and diagrams, creating and interpreting them are of great importance for many fields, such as engineering, technology, economics. From this point of view, the formation of graphic competencies is emerging as an urgent pedagogical problem today.

Research shows that the comparative teaching method that is, teaching by comparing two or more examples, models, or solutions within a topic or concept is an effective tool for developing students graphic thinking. This approach strengthens their ability to think analytically, understand logical connections, and draw their own independent conclusions.

On this basis, it can be concluded that the comparative learning approach should be used as an innovative pedagogical approach in the process of forming graphic competencies. This, in turn, will serve to increase students digital and visual literacy and strengthen their preparation for professional activity.

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