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Scientific-Basic Approaches to Improving Graphic Literacy among Students

Ibragimov Abdurakhim Rashidovich
Faculty of Physics and Technological Education, Teacher, Department of Technological Education and Fine Arts

Abstract. *This article discusses the role of drawing in modern technological progress, its importance in engineering, architecture and production processes, its role in the educational process and its contribution to the development of the thinking of the younger generation. It also analyzes the close relationship of drawing with other disciplines and its practical importance in professional fields.*

Key words: *graphic literacy, information technologies, visual thinking, design, analytical thinking, interactive tools, learning process.*

Today, in a context where modern technologies, design and visual information flow are widespread, graphic literacy - that is, the ability to correctly understand, analyze and create graphic information - is becoming one of the necessary skills for every student. Graphic literacy should become an integral part of the learning process, especially for students studying in such areas as engineering, economics, pedagogy, IT, architecture.

The concept of graphic literacy and its componentsGraphic literacy is the ability to understand, analyze and create graphic materials (diagrams, graphs, drawings, tables and design elements).

Graphic literacy is a set of knowledge, skills and competencies that allow a person to perceive, analyze, create and edit graphic objects and images. These skills are necessary for students not only in technical areas, but also for general sciences and creative activities.

Tatyana Viktorovna Zvereva conducted research on the development of graphic literacy. In 2013, the article “Formation of graphic literacy of students in the process of designing decorative items” was published. This article pays special attention to the development of graphic literacy in the process of designing decorative items on the material through graphic images in the form of a sketch, drawing, technical drawing or drawing. The connection between the formation of graphic literacy and graphic competence in students of fine arts in the process of teaching decorative and applied arts is substantiated. Trubnikova Lyudmila Ivanovna published an article “Computer-based teaching of graphic subjects as a condition for the formation of graphic competence” published in 2013. This article provides information on improving various teaching methods for the development of graphic competence. This article discusses one of these methods - independent graphic work using computer programs.

Its main components are:

Development of visual thinking and spatial imagination;

Reading and analysis of graphic symbols;

Representation of information in graphic form (for example, in a drawing or graphic form);

Skills in using graphic tools (AutoCAD, Photoshop, Excel, Canva, etc.).

2. Determining the level of graphic literacy among students

Analysis shows that most students have certain difficulties in using graphic tools and analyzing graphic information. According to the results of the questionnaire and tests, approximately 45-50 percent of students have difficulty interpreting graphic expressions correctly. This indicates that graphic literacy is not given sufficient attention in the curricula.

3. Effective methods for improving graphic literacy

The following approaches play an important role in improving graphic literacy:

Integrated teaching methods - studying scientific topics together with graphic tools;

Interactive technologies - introducing modern visual programs into the teaching process (GeoGebra, Tinkercad, SketchUp);

Practical design tasks - students develop independent graphic projects (infographics, diagrams, design layouts);

Cross-disciplinary approach - connecting mathematics, computer science, art and technology with graphic literacy.

4. Criteria for assessing graphic literacy

The following criteria are considered the main ones when assessing the level of graphic literacy:

The ability to analyze graphic information;

The ability to work with graphic tools;

The clarity and clarity of visual solutions;

The functional and aesthetic aspects of the created graphic design.

Improving graphic literacy is an important factor in training personnel in accordance with modern requirements. In this regard, an integrated approach, practical training, and the use of innovative technologies can develop students' visual thinking. Revising curricula and widely introducing graphic literacy elements not only increases learning efficiency, but also strengthens students' practical knowledge and skills.

In human creative activity, graphic images perform two interrelated functions. Firstly, drawing is a unique tool for thinking, and secondly, it is a means of conveying ideas.

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