

PEDAGOGICAL ASPECTS FOR THE DEVELOPMENT OF STUDENT DESIGN CREATIVITY

Bekzod Olimovich Sherriev
Bukhara State University

ABSTRACT

The article mentions the use of computer technology in the development of design creativity, spatial imagination of students, as well as the capabilities of their creative abilities.

Keywords: *designer, creativity, abilities, computer technologies, student, imagination, knowledge, thoughts, learning process, scientific novelty, project.*

Only when the thinking of a qualified specialist is strong will his work productivity increase. The famous Japanese designer K. Ecuana said that "feeling the essence of things is the basis of the concept of design thinking". This ability does not arise spontaneously. In our opinion, it is necessary to systematically impart knowledge on the basics of design from the elementary grades and to develop students' design-based thinking, i.e. design thinking.

So what is design thinking? How can it be developed? Thinking is one of the most important concepts in the fields of science such as philosophy, psychology and pedagogy, which have been variously defined by scientists.

In our opinion, the definition given by V. Karimova fully reflects the essence of the term design thinking: "Thinking is a generalized and abstract form of reflection, which provides a complex, comprehensive relationship between objects and phenomena that are objects of human consciousness." It should be noted that because we know the cause and effect relationships between things and events, as well as the laws of change and development, we can predict or create things and events that do not exist but may exist.

We have proposed our own definition, which fully reflects the characteristics of general secondary school students, based on the analysis of the descriptions and descriptions given to the concepts of design, thinking and concepts of design thinking:

Design thinking is a form of reflection in the human mind of creative activity aimed at establishing all-round connections in the physical qualities and appearance of objects, objects and the living environment in general.

Design thinking should be formed in a person gradually from a young age. Creative, mantle, visual, figurative, abstract types of thinking, the state and processes of a person's psychological characteristics, attention, cognitive memory, intuition, emotion, imagination and intuition are fully involved in the imagination of design thinking.

The development of the concept of design in students is a complex and time-consuming process, and the application of the didactic principle, which represents the interdependence of theory and practice in inculcating it in the minds of students, allows this process to be effective. We need to be able to explain to students the formal qualities of objects, as well as their function in harmony with the external environment, while introducing them to all-round connections in appearance. Usually, when looking at an item, its value, benefits, beauty are taken into account, but practical benefits, aesthetic experiences, personal psychological impact, color, color combination, emotional impact, what it is made of, compatibility with other items are not taken into account. In developing design thinking in students, we need to equip them with knowledge about the history of the objects around them, their impact on the evolution of our culture and spirituality, and its place.

This requires increasing the effectiveness of pedagogical-aesthetic cooperation in the development of design thinking, which facilitates the pursuit of goal-oriented scientific innovation in the organization of the

educational process, the impact of emotions through colors and shapes that affect the psychology of the creative person.

Students should be aware of the following when implementing a design-based design process:

- the operating conditions of the designed machine or equipment;
- accurate (or partial) assessment of the effectiveness of the projected product;
- know the purpose of the projected product;
- imagine what other options will be available;
- be able to explain the economic requirements.

In the process of school education, when performing design projects of products, the student learns the function of the product, its general structure, technological possibilities of production and its relationship with other objects. Students complete the projects they have started, create products based on them, and make creative changes to the process to make the items elegant, durable, and affordable. "It is obvious that organizing labor education classes in this way leads students to try their hand at the field, to see a creative example, to be proud of their creativity and to have confidence in their abilities.

Based on this research, we believe that in order for students to be effective in implementing design projects, the following should be done:

- Development of assignments, information for students on the implementation of design projects, as well as visual aids and guidelines for teachers;
- Development of criteria for assessing the level of formation of creative skills in students on the basis of design;
 - to take into account the individual characteristics of students in the design process on a design basis;
- Fostering mature individuals by instilling in students an interest in design and design-related professions, developing their creativity;
- Determining the amount and quality of knowledge and skills that students should have in the basics of design, and their distribution by class;
- Improving the content, structure and external framework for the implementation of design projects through new information technologies.

In order to ensure the effective implementation of these tasks, it is advisable to use computers in the lessons of fine arts to ensure the successful implementation of design projects by students and to enrich their worldview, to develop their creative thinking.

The main objectives of the use of information technology in the development of design creativity of students are:

- open up opportunities for students to access non-traditional sources of information, create opportunities for independent thinking and creativity;
- create conditions for students to create independently and create opportunities to design, modify and compare different variants of the design product;
- to be able to use computer technology in teaching, to develop students' consciousness, to develop creative research, to provide additional advice and guidance for the selection of the most suitable designs for the created product;
- have a convenient option to increase students' computer literacy and assess their level of mastery;

Students will have the following advantages when completing design projects using a computer:

- project development;
- make changes to the project;
- save the project in computer memory and use it in the future;
- rearrangement of a separate part of the project, etc .;
- make entries in the project;
- move the project to other files;
- Text interpretation and other options are available.

In order to take full advantage of these opportunities, teachers of labor education in general secondary schools should know the following about information technology:

- information and creative processes in science, technology and culture;
- mastery of modern methods and techniques of information exchange; - To be able to effectively use computer technology in teaching science, developing students' creative abilities and knowledge of the basics of design;

-knowledge of existing local and global network systems, be able to use the Internet and its capabilities;

- have the ability to work with text and graphics editors with the help of computers, be able to perform design projects;

- have an idea of the software tools for the implementation of information technology;

- be able to use computer devices as a teaching tool in the organization of lessons;

- to be able to use the automated system of training and control in the activity;

- be able to know and apply the information system of educational materials;

- be able to create a database on the subject taught;

It should be noted that the development of the education system today is impossible without information technology, because with the help of these technologies there is a great opportunity to present various topics in the sciences in a visual and understandable way. With a timely understanding of these advantages, it is advisable to create and widely use curricula based on advanced pedagogical and information technologies.

Application of computer technologies in the development of students' design creativity in the classroom. As a result, effective development of professional relations is observed.

Students strive to fully master the topics covered in order to complete the tasks assigned to them and respond to the control tasks.

The results of our research in computer-assisted training show that a computer can achieve results in a short period of time, while saving a number of learning tools, materials, and time to complete design projects in a simple way. Based on the above considerations, the role of computer technology in the development of students' design creativity can be explained as follows:

- saves time in computer-aided design;

- Students will have the opportunity to practice individually and test their abilities;

- Students can be taught independence, independent thinking, interaction.

From the above considerations, the following conclusions can be drawn about the use of computer technology in the development of students' design creativity:

- The ability to perform design projects on a computer allows the student to work independently;

- students become more interested in design and design-related professions;
- Students will have ample opportunities to develop knowledge, skills and abilities;
- During the design process, opportunities for students' creative abilities are created as their spatial imagination expands.

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