



# IMPROVING TEACHING METHODS BY ORGANIZING INDEPENDENT EDUCATION IN THE SUBJECT OF CONSTRUCTION DRAWING

Utarova Mekhribon

2nd Year Master's Student of the Urgench State Pedagogical Institute,  
Engineering Graphics and Design.

## Abstract

The article discusses issues related to the effective organization of independent learning in teaching the discipline “Construction Drawing.” It analyzes methodological approaches aimed at developing students’ independent learning competencies in accordance with modern educational requirements. The study proposes ways to enrich the content of independent learning, integrate it with practical tasks, and organize it based on digital technologies.

**Keywords:** Construction drawing, independent learning, teaching methodology, professional competence, graphic training, educational technologies.

## Introduction

Today, in the higher education system, the student's independent educational activity plays an important role in the process of training specialists. Especially in the process of mastering engineering and graphic disciplines, including construction drawing, the development of student independent thinking, graphic imagination and practical skills is an urgent pedagogical problem. Construction drawing is one of the main disciplines in the formation of professional training of future teachers of engineering graphics, which requires students to have spatial thinking, graphic literacy and technical thinking. Practice shows that the possibility of fully forming these competencies within the framework of classroom training is limited. Therefore, there is a need to organize independent education in the subject on a scientific basis and systematically introduce it into teaching methods. In pedagogical literature, the issues of organizing independent education have been covered by various researchers. In particular, the issues of



considering independent learning as a factor of personal self-development, determining its didactic functions, and improving methods and tools have been studied. In scientific works on the methodology of teaching engineering and graphic sciences, mainly the methodology of classroom training, practical and laboratory work has been covered, and the organization of independent learning as a special methodological system in the discipline of construction drawing has not been sufficiently studied.

### **Research Methodology**

On the problems of developing students' spatial imagination in drawing lessons and increasing the effectiveness of graphic education, scientific research has been conducted by scientists from our republic and abroad, such as A.Umronkhodzhaev, E.I.Roziev, I.Rakhmanov, M.N.Makarova, V.A.Gerver, A.A.Pavlova, Yu.F.Katkhanova, Ye.A.Vasilenko, Ye.T.Zhukova, Ye.I.Korzinova, A.A.Yakubovich. We relied on the opinions of these scientists on the issues of improving teaching methods through the organization of independent education in the subject of construction drawing.

**Analysis and results.** The issue of improving teaching methods through the organization of independent education in the discipline of construction drawing requires separate scientific research. For this, it is necessary to improve teaching methods based on the effective organization of independent education in the discipline of construction drawing. First of all, it is necessary to pay attention to the issues of determining the content and functions of independent education in the discipline of construction drawing, analyzing modern pedagogical approaches to organizing independent education, developing independent education methods based on practical drawing tasks, and integrating the capabilities of digital technologies and graphic programs into independent education.

Improving the teaching of construction drawing through independent work is carried out through the introduction of active methods: studying the material on the basis of textbooks, using CAD systems, problem-solving tasks and modeling real objects. This develops engineering thinking, independence, motivation and self-learning skills, ensuring the transition from reproductive learning to creative design.



It is advisable to organize independent learning in the discipline of construction drawing in the following main areas:

Organization of independent work: Using methods aimed at independent mastery of new knowledge, for example, working with educational literature, drawings and standards.

Application of modern technologies: Independent creation of 3D models and construction drawings through the introduction of CAD systems, which significantly increases the quality of education.

Problem-solving approach: Setting students problem tasks that require finding a solution, analysis and independent drawing.

Variety of forms of control: Use of self-control, mutual control and protection of independent graphic projects.

It is advisable to implement the following methods of independent activity in the discipline of construction drawing. Reproductive method: Making drawings based on a sample, copying, working with methodological instructions. Partially exploratory (heuristic) method: The student independently performs some actions in solving tasks (for example, sketching from a detail to nature). Research method: Independent design, completion of coursework, including construction drawings. This approach transforms the role of the teacher from a teacher to a consultant and serves to form professional skills in students and pupils. In the process of independent learning, the student appears not only as a learner, but also as an active subject. This requires the teacher to fulfill the role of a consultant and guide, not a supervisor.

## **Conclusion**

The results of the study show that the scientifically based organization of independent education in the discipline of construction drawing significantly improves the teaching methodology. The combination of independent education with practical tasks and digital technologies serves to develop students' graphic literacy, professional thinking and independent work competencies. This approach is of significant pedagogical importance in increasing the effectiveness of teaching the discipline of construction drawing.



## References

1. Ro‘ziev E.I. Geometrik va proeksion chizmachilik T.: “Yangi asr avlodi ,” 2010.
2. Ro‘ziev E.I. Muhandislik grafikasini o‘qitish metodikasi T.: “Yangi asr avlodi,” 2010.
3. Umronxo‘jaev A., Jumashov Sh., Norqulov A. “Mashinasozlik va qurilish chizmachiligi” kasb-xunar kollejlari uchun o‘quv qo‘llanma T.: “O‘qituvchi” 2005.
4. Fayzullaeva N. Pedagogik bilimlar – o‘qituvchi kasbiy mahoratining nazariy asosi //Uzluksiz ta’lim j. – T.: 2006. 6-son. – 102-b.
5. Ibadullaeva N. 2024. Razvitie xudojestvenno-tvorcheskix kompetensiy studentov izobrazitel'nogo xudojestvennogo obrazovaniya. Obщestvo i innovatsii. 5, 10/S (okt. 2024), 55–62. DOI:<https://doi.org/10.47689/2181-1415-vol5-iss10/S-pp55-62>.
6. Ibadullayeva N.E. Tasviriy san’at ta’limida talabalarning badiiy-ijodiy kompetensiyalarini rivojlantirishda kompyuter grafikasi imkoniyatlaridan foydalanish. International scientific and practical conference on the topic: “Priority areas for ensuring the continuity of fine art education: problems and solutions”. Vol.1.No.01.20.november.2023. Qarshi-2023.(2023): <https://ojs.qarshidu.uz/index.php/ts/article/view/206>
7. Ibadullayeva Nigora Egamberganovna, O‘tarova Mehribon. O HYPERLINK "<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138&btnI=1&hl=en>" liy HYPERLINK "<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138&btnI=1&hl=en>" HYPERLINK "<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138&btnI=1&hl=en>" ta’limda HYPERLINK "<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138&btnI=1&hl=en>" HYPERLINK "<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138&btnI=1&hl=en>" ta’lim-tarbiya HYPERLINK "<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138&btnI=1&hl=en>" HYPERLINK "<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138&btnI=1&hl=en>" HYPERLINK



&btnI=1&hl=en"samaradorligini [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en" [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en"oshirishda [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en" [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en"pedagog [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en" [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en"kadrlarning [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en" [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en"kreativligini [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en" [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en"oshirishning [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en" [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en"pedagogik [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en" [HYPERLINK](#)

"<https://scholar.google.com/scholar?oi=bibs&cluster=2999191719411492138>

&btnI=1&hl=en"shart-sharoitlari. So‘ngi ilmiy tadqiqotlar nazariyasi. Volume

8, Issue 6. 2025/6/13. 107-110 b.