



## DEVELOPMENT OF PEDAGOGICAL ABILITIES OF FUTURE TEACHERS OF DRAWING SCIENCE

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**Choriyev Olmosbek**

Doctoral student of Andijan State University, Uzbekistan

### ABSTRACT

This article provides information on the development of pedagogical skills and spatial imagination of future drawing teachers. Also, it is necessary for future drawing teachers to acquire the basic fundamental knowledge of engineering graphics and drawing. Helpful recommendations are given. Future teachers can correctly imagine the spatial position of a specific detail or object related to the science of drawing and its appearance in a clear image, projection methods, detailed clear image in three-dimensional space. Pedagogical information on the formation of skills is highlighted. The article pays special attention to the methods of improving the pedagogical skills of future teachers.

### KEYWORDS

Spatial imagination, pedagogical skill, clear image, pedagogical methods, graphic literacy, cutting and sections, projection concepts, geometric objects.

### INTRODUCTION

It is the same fact that the development of Science and technology, the fields of architecture, the construction of modern buildings and structures, the development of Mechanical Engineering today are the impetus for the development of Science in drawing science and the rapid growth of the human way of life in images. The

science of drawing is inextricably linked with the sciences of Fine Arts, pedagogy, mathematics, not only instilling human artistic aesthetic taste, but also about the spatial state of objects, details or objects the ability to imagine in high accuracy also matures in a person. This article is devoted to the issues of the

development of pedagogical abilities of future teachers of drawing Science, in which we study drawing and pedagogy in a harmonious way. "First of all, even if the future teacher has enough graphic literacy, has acquired the necessary knowledge from the field of drawing, and can easily carry out design work of different complexity, he cannot teach another person the knowledge he possesses if he does not have enough professional pedagogical skills"[1:67]. At this point, we turn to the field of pedagogy. Teaching is an honorable profession that requires a person to have pedagogical qualities such as patience, discipline, being able to get along with others, being able to explain complex terms in science in easy ways. The news that is happening in science and the requirements for the training of mature specialists in the future indicate that future teachers of drawing science should be taught to develop methodological skills, improve teaching tools and use it in the course of classes. In this way, the knowledge, skills and qualifications of future teachers are enhanced. Drawing as a subject in our country began to be taught from the 30s of the 20th century, and the importance of textbooks published by Russian scientists in this [3:110]. Drawing began to be taught in Russia from 1721. But in the early years, without drawing being taught as a science, geometric making and orthogonal projections were studied in mathematics, technical drawing in labor and physics, and vivid images in fine arts classes. From 1932, drawing was separated as a separate discipline. Currently, drawing is taught in Grades 8 and 9 of schools, professional colleges and higher education institutions. Taking a closer look at the history of drawing, as a result of the development of shipbuilding in Russia, drawings appeared that were strictly adhered to a more accurate drawing scale. In this, three projections began to be used, depicting length, width

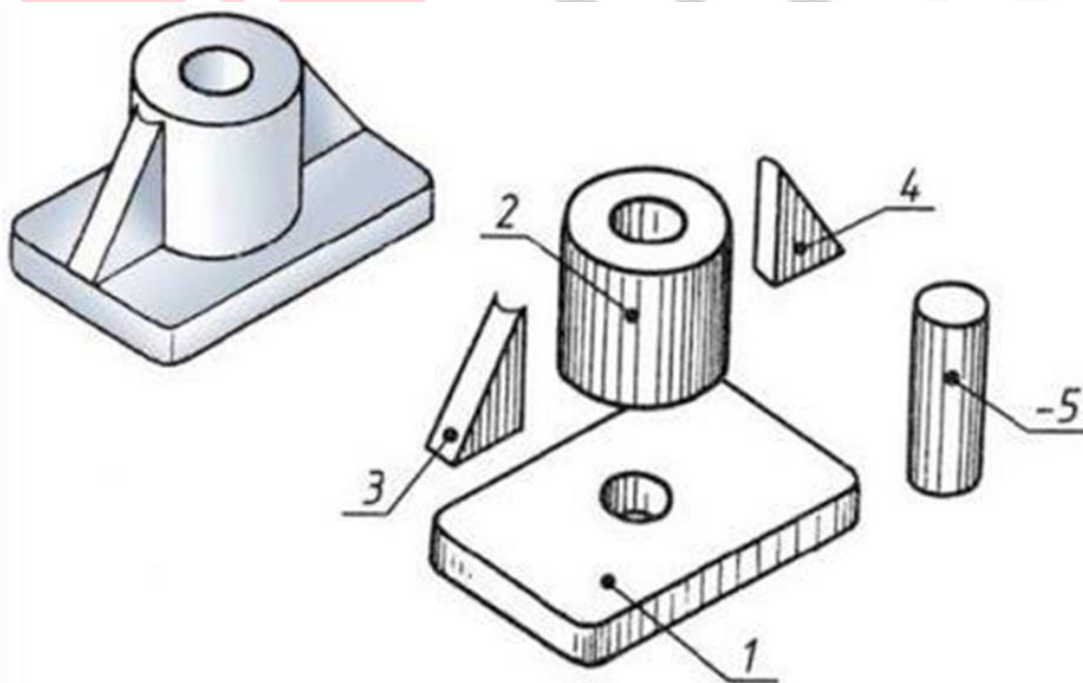
and height. In the 18th century, the drawings were executed in a meticulous and colorful tone. These drawings showed conditional cuts and painting according to the material of the cut of the piece. In the field of development of the theory of their implementation, the implementation of methods of representation of spatial bodies in the plane, several ancient scientists and allomas took a leading place in the field of engineers and architects, and folk Masters. M. Kant and his predecessors considered Euclidean geometry to be the only, if not divine, geometry. The famous Greek astronomer Ptolemy, who lived in the 2nd century BC, also dealt with perspective and wrote his work of five books, which he created in the field of observational perspective related to shape, size, color and shade when viewing things. "Thus, drawing (drawing) has been considered crucial to the role of drawing in the development of human consciousness, in the perception of the being around oneself, and in the development of the great blessing of thinking by bringing one's understanding to another"[6:87].

## METHODOLOGY

Decree of the president of the Republic of Uzbekistan No. 5763 of July 11, 2019 "on measures to reform management in the field of higher and secondary special education", No. 5847 of October 8, 2019 "on approval of the concept of development of the higher education system until 2030", No. 30, 2018 "on measures to create a modern system of selection of promising management personnel" PQ-3755-Resolution No. 4391 "on measures to introduce new principles of management into the system of higher and secondary special education" is further improving the quality of Education. One of the main problems is the implementation of innovative technologies, the

implementation of modern achievements of Science in the educational system on the basis of established priorities, the provision of research and educational scientific centers on the basis of higher educational institutions, academic lyceums and professional colleges in industrial production enterprises-i.e., the mutual integration of education and production with science by. In this process, the main goal is set to create conditions for increasing the creative and intellectual potential, practical qualifications and skills of not only the leaders and educators, but also the teachers of higher education institutions involved in the process of professional development and retraining, including raising the capacity of educators with a scientific degree and title operating in the Higher, Secondary In the process of improving and retraining the skills of

pedagogical personnel, the teacher is a necessary requirement of progress to the individual of practitioners. The concept of spatial imagination of course occupies an important place in the development of professional-pedagogical abilities of the graphic skills of future teachers of drawing science. So what is spatial imagination and why do we need it, what is the place in drawing science? It is natural that questions arise. Spatial imagination is a full-fledged reflection of an object in three-dimensional space in the consciousness of a person. In order to develop and develop this ability in the future teacher on the basis of pedagogical technologies, we will consider some exercises below. From a given model of the detail, we divide it into geometric bodies based on graphic analysis:



Draw 1.

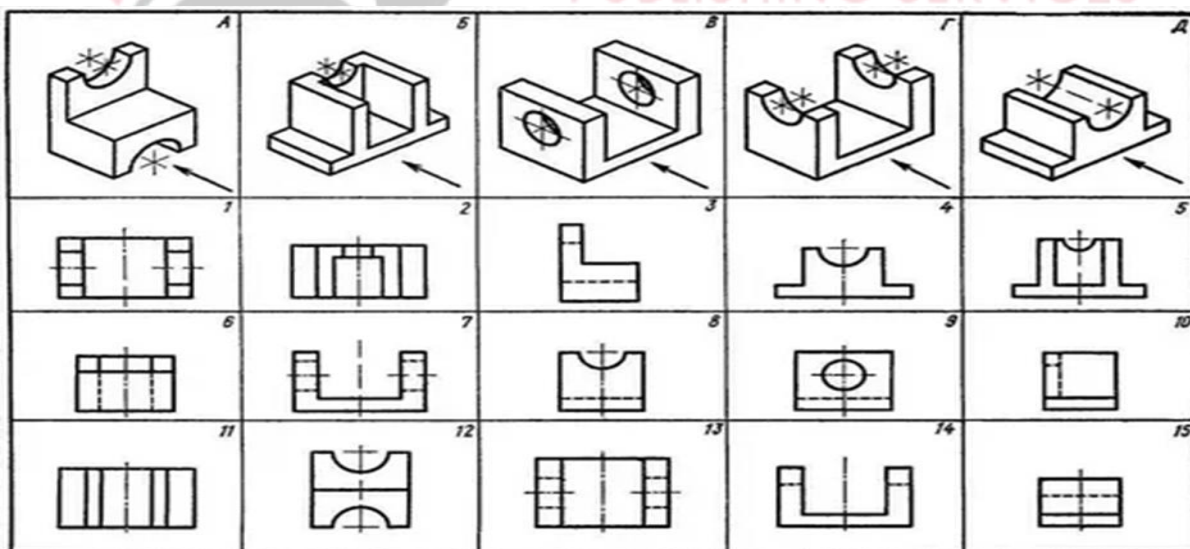
Drawing a drawing of a detail according to the finished drawing, or reading it into geometric bodies, poses much more difficulty in new learners[10:87]. For this reason, it is desirable for future teachers to use the objects depicted on the plane of basic geometric bodies and projections as visual weapons from the detailed models in which the interior views of the object are fully formed. In this regard, we will consider a number of exercises aimed at developing the abilities of future teachers to analyze detailed geometric shapes. The recommended exercises include the following tasks:

- determination of important and non-essential properties of basic geometric bodies; - analysis of The Shape of basic geometric bodies (by models);
- analysis of The Shape of the part formed from different combinations of basic geometric bodies (by models and machine parts);

- restoration of an item or detail according to the description of its views, its obvious image;
- write a description on an item or detail and b.

We also use pedagogical technologies in drawing lessons. We can use different game techniques in order to organize classes fun and efficiently. In this method tool, the lesson will be interesting and will be picked up with fatigue and boredom. 1. The game "who's making fast". Making a model of a detail consisting of different projective views according to the game's condition. In this, the graphic design skills of future teachers are developed.

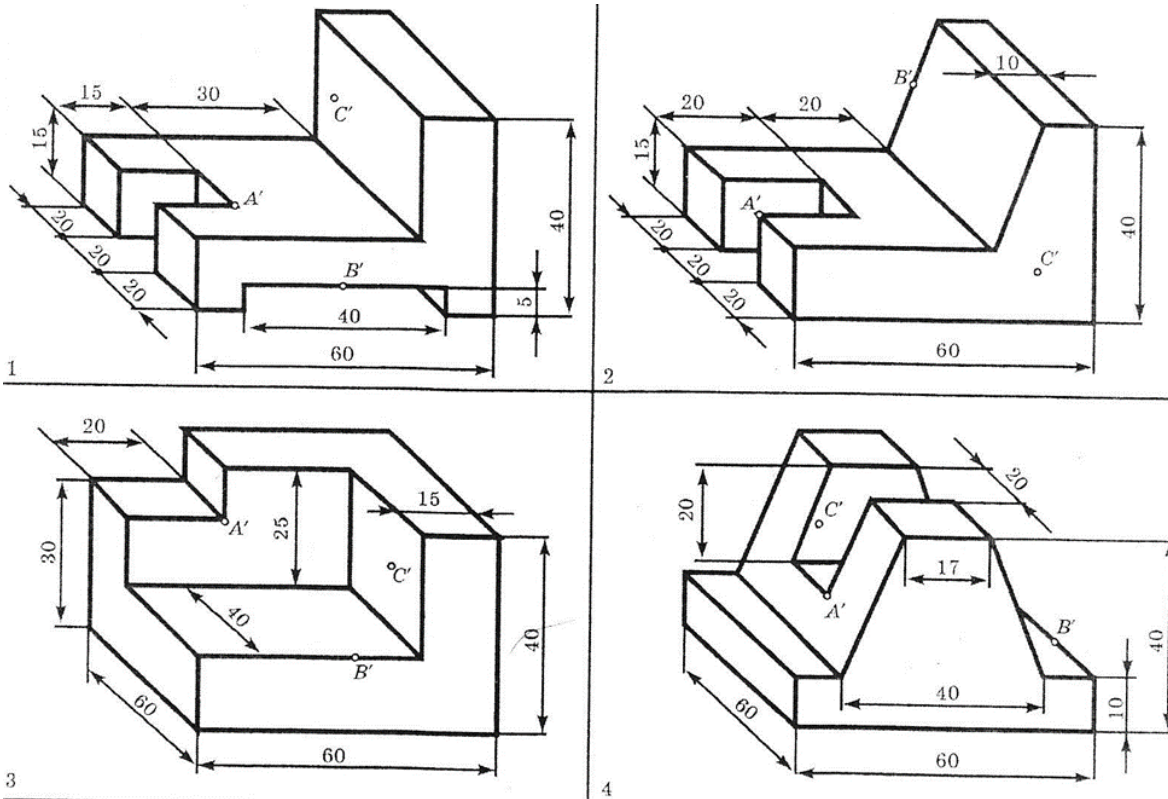
Goal: Improving the design skills and spatial thinking of future teachers, strengthening the knowledge gained in reading drawings. Teaching them to analyze details. Equipment. From a few of the different geometric details, most are models of the parallelepiped type (3rd shape). views of the model made from these



Draw 2.

Detail of the game. Teacher: "who can make models of details from these geometric surfaces according to their given appearance?, and shows himself by making a model of a single detail as an example (Figure 5). The Clapper then asks one of the students to make a model

of a different detail. In the game, each student must be able to make a model of a detail. Readers who make the most beautiful and correct model in the game are considered winners[7:56].



Draw 3.

## RESULTS

In our country, it was achieved to create the necessary base of opportunities for the upbringing of a spiritually mature, spiritually healthy, harmoniously matured generation. The effective implementation of the "state program for the development of the ridge of higher education" is a vivid evidence of this. The introduction of educational technologies into practice, especially

Information Communication Technologies, which are considered as the main factor in improving the effectiveness of education and education, consists in the rational use of multimedia resources, the cultivation of the cognitive abilities of future teaching pedagogical personnel, which is a positive result of this. The advantage of Information Communication Technologies is that it teaches the student to think

independently, expand his worldview, listen and observe, strive and seek, develop thinking, work on himself independently. In engineering computer graphics, too, it is necessary that students can use AutoCad, 3dmax, Power point, Paint, programs so that they can read their drawings more easily and conveniently, and so that they can better imagine the drawing. Teacher and future drawing “teacher” student will work together[6:119]. The teacher, as a manager, shows the student different directions. The student actively acts in the course of the lesson, thinking independently himself. Teaching to effectively apply their skills in the lesson will increase the effectiveness of the lesson. The introduction of new pedagogical technologies at all stages of education, in particular, the effective and rational use of Information Communication Technologies and the achievement of high efficiency, is a matter of particular importance. The formation of professional competence of the future teacher occupies a special place among the complex problems in the training of educators. Especially at the current stage of reforms related to the modernization of education, the problem of adaptation to professional pedagogical activity is more evident. Future teachers are becoming richer with the formation of professional competence of the teacher, along with practical, psychological, methodological, research types[2:98]. The task of professional competence should include groups of diagnostic, communicative, managerial and projective studies in the substantive characteristics of professional formation. The cognitive activity of an educator is largely determined by the complexity, dynamics, non-standard nature of what is being studied, the influence of boundaries that distinguish social phenomena, their search, uncertainty, which implies the qualification of observability, modeling the inner world of the

interlocutor. In this case, the features of self-regulation are characterized by the need to constantly improve their knowledge and skills, the decisive improvement of their own actions aimed at other people. The place and importance of the science of "computer graphics", which is currently being taught at the Osms, in the satisfaction of the material and spiritual needs necessary in our social life, and in the breadth of opportunities for automating their work activities, can be viewed by specialists in all fields. That is why, at the same time, the Republic is engaged in the study of computer graphics in Osms in different areas, creating methodological foundations for the use of its capabilities in a number of areas, the effective use of computer technologies and new areas that are entering our lives (specialized artist, special effector, vector art master, CAD-master, modeler, animator, texturist, visualizer, etc.k) the issue of providing qualified professionals, such as, led to an increase in the need for "computer graphics" to be taught as a subject in OTMs[6:73]. Today, it is important to use the necessary pedagogical and psychological tools in practice and scientifically substantiate them, in increasing the graphic competence of teachers of "computer graphics" and Draftsmanship in Osms, in teaching the science of computer graphics, in instilling students in their purposeful actions towards science and thereby instilling in them the possibility of achieving any result. It is known that when students have the necessary initial knowledge and skills in the subject of "computer graphics" before arriving at the OSM, their spatial imagination, the features of being able to read a drawing, necessary in the subjects of graphics, are formed[6:43]. This testifies to the fact that it is advisable to start courses related to it from a system of secondary special, vocational education. Thanks to the scientific research of a number of

researchers, scientific results are being achieved, the practical implementation of which can greatly influence the educational process.

## CONCLUSIONS

In drawing classes, it is always up to the teacher's skill to be able to generate enough skills in students' graph activities. "The execution of drawings is an incredibly complex and complex process, and the success of the work largely depends on the correct Organization of the work Seat " [4:14]. Carrying out graphic activities together with the pedagogical system is one of the most necessary conditions. Otherwise it will not be possible to get used to the intended purpose from the process of interpretation. It is convenient to make models of geometric surfaces from penoplast oak wood. When using models of details, it becomes easier for students to imagine the spatial elements of the hole, groove, ditch cut in them. Before starting this creative design game teacher it is possible to divide the views of the selected detail into geometric surfaces and make their models with the help of students. In the process of interpretation, with various didactic game technologies, it is possible to achieve the development of their graphic potential by interested readers in this science. In conclusion, it is necessary to research that arises from the reality that exists today.

## REFERENCES

1. Yadav J. "Geometric and projection drawing. - T.: Science, 2008.
2. Muradov Sh. v.b. Topography K drawing. - T.: Chulpan, 2009.
3. Yadav J. Mechanical engineering drawing. - T.: Uzbekistan, 2009.
4. Rakhmonov I. and a.Valiyev. Drawing. - T.: Successor-publisher, 2011.
5. Rakhmonov I. v.B "drawing" - T.: Successor-publisher, 2016.
6. Roziev U., Ashirboyev E.I. Engineering graph training methodology-T.: 2010.
7. Rakhmonov I. - Didactic games from drawing. - Tashkent, 1992.
8. Muradov Sh., Kokiyev K., Obloculova B. B. - Correlation of change coefficients in axonometric projections with oblique angles in the construction of clear images, scientific information of the Bukhara state unit, 2/2019.
9. Saidaliyev S. "Drawing geometry and engineering graphics-Tashkent: TAQI, 2017.
10. Rakhmonov I., Valiyev A.V. - Modern technologies for teaching engineering graphics science-T.: 2009.