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Issues of Developing the Artistic Thinking of Architecture Students in The Process of Independent Education

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ABSTRACT

The article discusses the role of graphic training in the activities of future architects, and the problems related to the growth of students' creative competencies and the development of their artistic thinking. On the basis of pedagogical experience and existing scientific analyses, the author comes to the conclusion that the level of visual graphic training required for future architects is largely connected with the level of development of their artistic thinking. He dwells on the existing problems in the development of these important professional qualities in students and the ways of overcoming them, emphasizing that independent education has broad opportunities in this regard. As a solution to the problems in this area, the author has developed methodological recommendations and presented his proposals.

Keywords: Architecture, graphic education, independent education, modernization, digital technologies, transformation, competence, educational aspect, artistic thinking, cognitive thinking, creative approach, composition.

INTRODUCTION

It should be noted that in sketch projects created within the framework of modern architecture and architectural environment design, reliance is placed on aesthetic principles characteristic of the avant-garde trends of fine art, and compositional approaches and means of expression are effectively used. Therefore, it is natural that compositional solutions created ten or fifteen years ago may not fully correspond to today's rapidly changing socio-cultural and technological requirements. At the present stage, each sketch must be not only functionally and technically perfect, but also embody such qualities as uniqueness, originality and distinctiveness. The main reason for this is that the aesthetic taste of viewers and customers is becoming increasingly refined, and their individual characteristics and subjective views are placing high demands on creative solutions.

The acceleration of scientific and technological progress, as well as the widespread introduction of innovative construction materials and technologies, is creating a real basis for the emergence in the near future of completely new types of architectural objects and structures that have not been observed before. As a result, architectural compositions that are beyond the limits of imagination and combine a high level of artistic and engineering solutions are expected to appear in national urban planning practice as well. Such structures will undoubtedly be recognized as the highest product of creative thinking and will serve the development of aesthetic values in society.

In all periods of human history, examples of art and culture that are the product of artistic thinking have preserved their specific social, aesthetic and spiritual value and will not lose this significance in the future either. The field of architecture is no exception to this general regularity. From this point of view, in the process of training a highly qualified architect-specialist, it is not sufficient to limit oneself only to mastering modern computer technologies and software tools. The idea put forward by the French enlightener and philosopher Denis Diderot (1713–1784), meaning "do not trust an architect who cannot draw,"

further strengthens the theoretical foundations of this issue. These views show that the necessity of teaching fine arts subjects in the fields of architecture and design, and their role in the formation of professional competencies, are incomparable. Indeed, narrow specialized knowledge is insufficient for achieving a high professional level. In the development of such knowledge and skills, thorough knowledge of pencil drawing and its methods is of great importance. In fact, manual graphic representation methods are "used in many specialties in solving specific professional tasks in their proper place."

The professional competence of future architects must be formed and developed in close connection with artistic thinking, aesthetic perception and a creative approach. A future specialist at the higher education institution level must be able to find the necessary information, analyze it, distinguish the parts related to the main issue, generalize, draw conclusions and make independent decisions in non-standard situations. In this regard, in recent years, attention to students' independent work has also been strengthened in architectural education, and the issue of developing their creative abilities and artistic thinking has been at the center of attention.

The degree of study of the problem. It can be seen that a number of teacher-scholars have conducted scientific research on this problem. In particular, the possibilities of using the competency-based approach in the process of activating students' independent work have been analytically studied in the works of V. I. Baidenko, E. F. Zeer, I. A. Zimnyaya, B. K. Kolomiyes, N. A. Selezneva, E. E. Simanyuk and others.

V. I. Andreev, Yu. K. Babansky, M. A. Galaguzova, S. A. Novoselov, P. I. Pidkasisty, T. N. Shamova and others carried out effective work in researching the problems of organizing and improving students' independent cognitive and educational-creative activity.

Among modern researchers of artistic visual thinking who have actively studied the issues of developing creative and imaginative thinking in students and pupils in art education, we can mention the names of the Americans Elliot Eisner, Howard Gardner and David Perkins. In particular, one of Elliot Eisner's specific ideas is that art can generate specific forms of thinking that other disciplines cannot develop. In his opinion, art education develops a person's sensitivity to interpretation, imagination and form. David Perkins, a researcher of Harvard Project Zero, studied human thinking through art. He also developed a methodology for analyzing works of art in order to develop students' thinking. David Perkins is the author of the book The Intelligent Eye. Arthur Efland is also one of the leading theorists of art education. He studied the cognitive nature of artistic thinking and analyzed the role of art in the development of intellect. His book Art and Cognition was published. Kerry Freedman is a pedagogue who studied the problems of visual culture and the development of critical and artistic thinking in students. She is a well-known American professor in the field of art education and the author of the book Teaching Visual Culture.

The Russian researcher of the psychology of artistic creativity, Alexander Melik-Pashayev, studied the development of imaginative thinking and artistic perception among students and young people. He also studied the formation of artistic abilities in pupils. Boris Yusov is among the teacher-scholars who dealt with the issues of developing artistic thinking through the integration of different arts. He put forward the theory of polyartistic education. The theory of polyartistic education is a pedagogical approach aimed at teaching pupils several types of art at the same time, such as music, fine arts, theater, literature and others, in an interconnected manner.

The study of scientific literature that is important in the process of conducting and analyzing research work within the framework of the topic makes it possible to identify the contradiction between "the objective need for the formation of independent educational activity arising due to the increasing volume of necessary theoretical knowledge" in current conditions and the insufficient readiness of learners to independently solve educational problems aimed at developing the relevant qualities of the learner's personality.

The study of scientific literature and the analysis of research work show that the issue of developing students' artistic thinking in the process of independent graphic education specifically in architectural fields has not yet been fully developed.

METHODOLOGY

Artistic thinking is a person's ability to think creatively, imagine and find an aesthetic solution, and it is also a quality necessary for specialists in the field of architecture.

Observations show that the set of factors serving the development of an architect's artistic thinking is quite broad.

How can the concept of the artistic thinking of a future architect be characterized? If the ideas obtained from scientific literature and the views of specialists in the field are generalized, it is the architect's ability to perceive the environment aesthetically, creatively and functionally, as well as to imagine new spaces and bring them into form. This is not only drawing or creating a beautiful building, but also includes feeling the harmony between the human being, the environment and culture. Artistic thinking can be understood both as a person's ability and as a characteristic, and it is a developing process.

The main professional qualities that serve the development of an architect's artistic thinking can be expressed as follows:

1. Imagination and creativity. The architect creates in his mind a building or object that does not yet exist. He combines form, volume, color and light and develops new ideas.

2. Aesthetic taste. It is important to feel beauty and bring it into practical form. Every project must be not only convenient but also attractive.

3. Spatial thinking. Spatial imagination of space and the proper organization of internal and external volumes are the central part of the architect's thinking.

4. Observational ability. Drawing inspiration from nature, the urban environment, historical monuments and modern structures enriches artistic thinking.

5. Emotional sensitivity. The architect must be able to foresee how the space he creates will affect people: comfort, tranquility, inspiration and others.

Of course, the development of these qualities in students should cover all components of the educational process. Independent education, in particular, has great pedagogical opportunities in developing students' artistic thinking. It serves not only for the student to receive ready-made knowledge, but also for the formation of independent reflection, imaginative thinking and a creative approach.

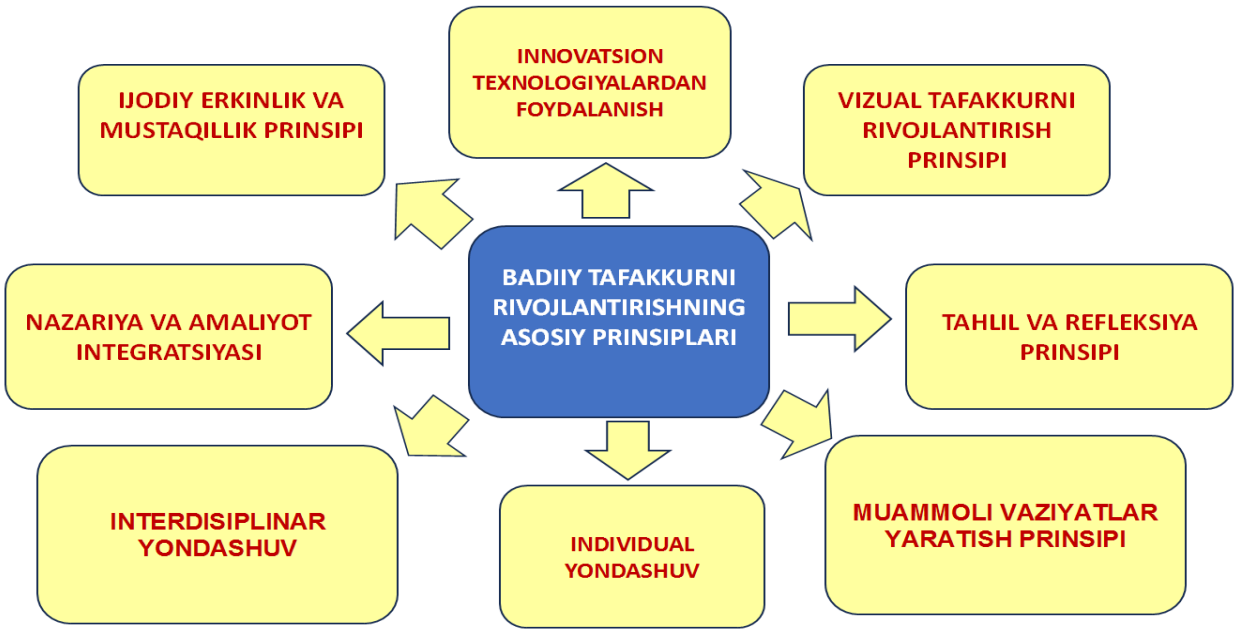
The main opportunities of independent education are as follows: development of creative thinking. Through independent analysis of all examples of art, including the art and culture of architecture, the student learns to express an aesthetic attitude toward reality. This strengthens his imaginative and critical thinking. Formation of the ability for independent analysis and drawing conclusions. In the process of independent education, students search for information, compare, analyze and draw personal conclusions. This process develops the skills of artistic perception and aesthetic evaluation. Expansion of aesthetic worldview. Independent study of examples of national and world culture enriches students' spiritual and aesthetic taste and increases their interest in cultural heritage. Creation of a creative environment through information technologies. Electronic libraries, the Moodle platform, multimedia resources and online courses increase the effectiveness of independent education. The student has the opportunity to conduct artistic reflection on the basis of visual and audio materials. Development of individual abilities: independent education is organized in accordance with the interest and talent of each student. As a result, the student's need for creativity, free thinking and self-expression increases. Use of artistic-pedagogical technologies. Creative projects, artistic analysis and presentations activate students' aesthetic thinking.

All the listed aspects are types of cognitive activity that serve the development of students' creative abilities and their artistic thinking.

From this, it can be concluded that independent graphic education can be considered as the main aspect of developing students' artistic thinking.

The development of artistic thinking among future architects in the process of independent education requires the formation not only of technical knowledge, but also of creative and aesthetic thinking. Because in this process, the student relies on his knowledge and skills, thinks independently and applies his personal competencies.

The following diagram illustrates the main principles of developing artistic thinking in the process of independent education:



1. Principle of creative freedom and independence. The student should be given the opportunity to express his ideas freely. Finding a solution not through ready-made patterns, but through independent research and experiments, is encouraged. This approach expands artistic thinking.

2. Principle of developing visual thinking. Architecture is a type of visual art. Students enrich their imagination by regularly drawing sketches, making models and creating compositions. In this process, observance and attention to details are important.

3. Integration of theory and practice. Artistic thinking does not develop only with theoretical knowledge. It is necessary to connect subjects such as the history of architecture and art theory with practical projects. For example, applying historical styles in modern projects.

4. Principle of analysis and reflection. It is important for the student to be able to analyze his work and identify its strengths and weaknesses. Studying and comparing the works of famous architects also develops thinking.

5. Interdisciplinary approach. Artistic thinking is not limited only to architecture. Familiarity with painting, design, sculpture, even music and literature enriches creative thinking.

6. Principle of creating problem situations. Giving students tasks based on real-life problems, for example ecological or urbanistic problems, encourages them to find creative solutions.

7. Use of innovative technologies. With the help of modern programs, such as 3D modeling and VR, the student has the opportunity to express his ideas in new ways. This further develops artistic thinking.

8. Individual approach. In the process of forming special competencies in students on the basis of developing project thinking and effectively using means of graphic communication, the harmonious development of technical and creative skills is considered an important factor. This is because graphic training is an important component of architectural education, and it serves to form the visual thinking ability, spatial imagination, compositional perception and aesthetic taste of future architects. At the same time, students' independent graphic assignments also have great importance in the educational process. Such works not only strengthen the acquired knowledge, but also help to develop an independent and individual approach in solving professional tasks. As a result, the student's range of cognitive thinking expands, and his artistic and creative thinking develops further.

Each student's creative ability is different. Therefore, in the process of independent education, their personal

interests and opportunities should be taken into account. The main directions in applying this topic to practice are a set of systematic works that ensure the transition from these principles to real educational and creative activity.

As mentioned above, the problem of developing the artistic thinking of student youth is also considered one of the main problems in the pedagogy of art education. Although many artist-pedagogues have expressed their scientific views within the framework of this topic, it can be seen that they have different conclusions and methodological approaches.

Based on the above ideas, the following pedagogical methods serving the development of the future architect's artistic thinking can be recommended:

The following can be proposed as methods for developing artistic thinking in independent graphic education:

1. Method of observation and analysis. In this method, students observe natural objects, architectural structures, examples of national and world architecture, and analyze form, proportion, rhythm and composition. As a result, the student's ability of visual perception and aesthetic thinking develops.

2. Method of academic drawing.

Drawing on the basis of pencil drawing, light and shade, perspective and anatomical construction develops spatial thinking, the feeling of form and the ability of constructive analysis. In particular, depicting architectural details and interior elements is considered important.

3. Method of creative interpretation. The student is given the task of depicting one object in different styles: realistic, modern, minimalism, national style, and so on. This method strengthens the creative approach and the ability to make independent artistic decisions.

4. Method of compositional exercises. Tasks related to composition serve to study the balance of forms, rhythm, contrast, symmetry and asymmetry. Students search for various compositional solutions through sketches.

5. Method of project thinking. Small projects related to architecture, such as a facade solution, interior composition and landscape composition, are carried out through independent work on elements of the urban environment. This process harmonizes artistic thinking with technical thinking.

6. Method of working with references and analogues. Students study famous architectural objects and design works, and analyze composition, color, plasticity and functional solutions. This forms professional visual culture in them.

7. Method of digital graphic technologies.Use of modern programs: 3D modeling, digital sketching and performing visualization works. For example, programs such as AutoCAD, SketchUp and Revit are considered important tools in developing architectural thinking.

8. Method of problem situations. Students are given a specific architectural problem: developing a compositional solution for organizing a building area, finding a lighting solution, creating ecological design, and so on. This method develops independent analysis and innovative thinking.

9. Method of portfolio formation. The student collects his works: sketches, compositions, graphic works and projects. Through the portfolio, the dynamics of creative growth are observed and self-assessment is formed.

10. Method of reflection and assessment. The student analyzes the work he has completed: identifies strengths and shortcomings, gives an objective assessment. He thinks about new solutions and reflects on them. This forms the future architect's skills of independent thinking and professional self-development.

At the same time, there are many pedagogical and psychological factors reflected in the process of independent education, which, undoubtedly, play a very important role in achieving the intended results.

RESULTS

Observations and practical experience show that within the framework of the subjects "Architectural pencil drawing, painting," students do not have sufficiently formed skills in deeply understanding the basic theoretical rules, consistently interpreting them, independently analyzing and systematizing practical tasks, determining the logical structure of the work process and identifying the elements of effective organization of independent activity. This

situation, in turn, can be explained by the fact that the methodological support in the educational process is not perfect at the required level or that the existing approaches do not fully meet modern requirements.

In addition, in practice, it is observed that the content of assignments recommended for independent work is often developed without being integrally connected with the procedural and motivational aspects of students' activity. As a result, such assignments do not arouse internal interest in students, do not stimulate their need for knowledge, do not contribute to the development of artistic and creative thinking, and reduce the effectiveness of independent activity. Therefore, the possibility arises that learners' motivation to perform independent work may consistently weaken.

The main goal of this process is to train highly qualified future architects who have the ability to receive independent education, approach professional activity creatively, acquire innovative thinking skills, through the effective use of various pedagogical methods. In modern educational conditions, without abandoning the effective aspects of traditional teaching methods, the application of innovative methods and their systematic integration at various stages of the educational process is an important factor in achieving the expected results.

An integral part of art education is the formation of a system of value orientations in the field of art — understanding the artistic heritage of the past, the creative process itself and its results as values. Art models a system of values and aesthetic orientations, and forms and develops a person's aesthetic attitude and views toward reality. For this reason, in graphic education, great attention is paid to pencil drawing, which is considered one of the foundations of fine art. "From the point of view of modern didactics, textbooks and teaching aids are an information model of teaching, a specific scenario of the educational process. They reflect the theory and methodology of education, the scope of knowledge, skills and abilities, the general culture and experience of human activity..." says the teaching aid on pedagogy by the Russian pedagogue-scholar P. I. Pidkasisty. Art education must also constantly develop and modernize; it has the characteristic of growing and integrating. From this, it can be concluded that education and all its forms have very great importance in the growth and development of the student's knowledge and skills. Therefore, the level of the quality of the work carried out in the field of art education and the development of students' artistic thinking depends, among other things, on independent education and its comprehensive proper organization.

Education as a pedagogical category has its own characteristics. One of them is expediency. Education serves the purpose of transferring the culture and experience accumulated by humanity from older generations to younger generations, creating conditions for their personal development and preparation for performing certain social roles in society. As a result, a person reaches certain levels in mastering knowledge, skills, qualifications, activity and experience of relations. "The main target components of the concept of education consist of mastering and using spiritual heritage, developing the creative potential of the individual, and directing a person toward positive creativity."

These factors place a high level of responsibility on professors and teachers working in this field. Within the framework of various components of the education system, it is important to create optimal pedagogical conditions in bringing the content of independent education to a qualitatively new stage, as well as to take into account students' individual psychological characteristics in the process of working with them. Because one of the main factors in the process of receiving independent education also depends on the learner's independent action, inquisitiveness and the level indicators of his desire to search for new knowledge.

"The motivational component implies the necessity of having the skills to activate one's positive intentional experience, such as preference, belief and mood, to find life meaning in the work being performed, and to maintain motivation aimed at achieving a goal and satisfying needs at all stages of independent work. Motivation is from the Latin 'movere', meaning 'to move', 'to impel'. Independence is interpreted as an integrative characteristic of the person, and it is considered an important determinant of the individual's aspiration to acquire knowledge independently and the level of initiative. The specific aspects of this phenomenon become more evident in certain types of activity, in particular, in the context of the manifestation of the student's personality in the process of independently mastering educational material. In other words, the student's level of independent thinking and activity is reflected in the components of educational activity that require meaningful and effective activation.

CONCLUSION

The application of pedagogical methods that serve the development of students' artistic thinking in the process of independent graphic education creates a basis for developing the creative thinking ability of future architects, increases their aesthetic taste, spatial imagination and compositional culture. All of these serve to form a creative, creative and innovative approach to work in students.

In modern architectural education, the combination of traditional academic approaches with digital technologies and creative project methods is recognized as the most effective means.

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