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The problem of experimental modeling of design culture (on the example of the pilot design activity of the Department of Clothing Design of the Tbilisi Academy of Arts, approaches the direction of design)

Introduction

Each historical stage creates its own forms of culture, which are determined by the level of development of civilizational processes. So, for example, it is a generally recognized fact that the development of printing and the availability of books changed the way people think in their time - mental processes began to acquire a sequentially linear character. Today, global crisis processes - economic, social, demographic, environmental, etc. - have led us to the understanding that everything in the world is inextricably linked. The development of information technology has changed the environment of human interaction. The opportunities that opened up gave impetus to the reunification of all those who were separated. Science and practice of various directions came to the conclusion that in the next circle a person should embrace, reduce his discoveries to an indivisible perception of the world. To do this, it is necessary to restore broken connections, otherwise our perception will be incomplete and possibly incorrect. Now this synthesis is called a systematic approach. Now, perhaps, another

metamorphosis of a non-linear, more voluminous, holistic and capacious understanding of human experience is taking place. (Drucker P.[1]; Toffler E.[2]; D. Bell[3] etc.).

Of course, a change in mindset does not happen suddenly or by accident. There must be serious reasons for this. Today there is unlimited and accessible information, which has led to the weakness of verbal thinking in mastering the growing flows, perception becomes chaotic, fragmented, fragmented.[4].

It has been experimentally proven that unlike the memory of consecutive words, the visual memory of a person is practically not limited. Visual Forms allow you to “compress” the volumes of information, to perceive them not sequentially, but more holistically, “in one action”.

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[1]P. Drucker, *Innovation and Entrepreneurship: Practice and Principles*, New York: Harper & Row 1985.
[2] E.Toffler, *The Third Wave*, United States :Publisher William Morrow 1980.
[3] D. Bell, *The Coming of Post-industrial Society, A Venture in Social Forcasting*, N. Y.1973, 330 .
[4] M. McLuhan, *The Gutenberg Galaxy:The Creation of Man of Printed Cult*ure, K .: "Nika-Center""2003, 432.

Thus, the challenges of time are increasingly pushing a person to the active use of visual abilities. Verbal thinking of a person (logical, analytical, discursive) gives way to visual (opposite figurative, intuitive, discursive thinking). We need not linear sequential ways of thinking (conclusions and evidence that we are used to), but something else, caused by the need to instantly capture spatial information and analyze it.[5]. Interestingly, this feature attracts even advanced businesses in search of new ways of development. The era of the "creative class" and the creative economy, proclaimed by the famous Irish writer Richard Florida, is of increasing interest in business circles, since the boundaries of figurative perception are much wider than verbal ones - more that gets into the field of vision is firmly stored in memory[6] .

One way or another, in the practice of various disciplines (marketing, management, advertising, etc.) they are increasingly talking about the need to use the methods of imaginative thinking. These methods are called: - Intuitive thinking - Holistic thinking - Visual thinking - Creative thinking - Right hemisphere thinking - Productive thinking - Lateral thinking - Second logic - Organic logic - Gestalt logic.

By this time, it also becomes clear that the designer, as the bearer of a holistic consciousness, is almost the only specialist who thinks in a new way, in the spirit of a developing direction. It is characterized by figurative thinking. He is engaged in visual creativity and creates a product in which different meanings should be visualized - reflected - understood and accessible to everyone.

To understand the essence of design methodology, it is necessary to study its development and formation. I give a short digression from the history of the development of the methodological foundations of project activities.

Issues of developing a design methodology

Abroad, the first teaching aids on design and engineering appeared in the 1950s. They reflected the ideology of the time. Then there were some restrictions on industrial production and marketing. The orientation was focused only on the practical use of items. The main principle of the project was - the product should be simple and convenient and at the same time satisfy the taste of the user. There were no other social or cultural requirements for the design. The English design theorist F. Ashford defined design tasks in the mid-1950s as the creation of products that are sold and used "here and now". However, despite all the limitations, early methods played an important role in the development of design.

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[5] Edward De Bono, *Lateral Thinking: A Textbook of Creativity*. Penguin books 1982, 260.

[6] Florida R. ,*Creative class: people who change the future*, Publishing house “Classic-XXI” 2007, 421.

Changes in design education have always been a reflection of changes in the manufacturing environment. So, for example, in the 1960s, some companies began to acquire the rights to design projects created by students of the Ulm School and the Bauhaus, for their further implementation. He showed that students can also have concepts that are ahead of their time and, to some extent, the inertial thinking of designers in the studios.

Theoretical studies of the late 1960s - the first half of the 1970s, devoted to the problems of design theory, allow us to talk about a new stage in the development of the methodological foundations of design activities.

An important development was the creation in 1967 at the University of California at Berkeley of the Design Methods Group (DMG). Members of the famous group are professors from the University of California - scientists and practitioners who have worked in the field of architecture, urban planning and design, as well as in the field of exact sciences and social and humanitarian knowledge. Several members of the Design Methods Group have simultaneously been professors at the most prestigious design universities in the UK and the US. The group agreed that the design methods developed in the previous period should be objective. This is outdated. Later, one of them, leading design methodologist H. Rittel, called these methods "first generation methods", which were based on the idea that there are certain design laws that can be "discovered" or "set". Rittel showed that this approach to design work was appropriate at a time when designers had relatively stable design goals that were changing at a much slower rate than the project was developing.[7].

In the 1970s, there were discussions about the influence of traditional artistic disciplines on education and the differences between the training of artists and designers.

The 1980s are marked by discussions about the role of computers in design and reflections on how design becomes a marketing tool. As a result, university disciplines have expanded with theoretical courses in the psychology of consumption and the basics of marketing.[8].

Already at this stage, the designer is forced to work in conditions characterized by high dynamism and special design complexity, which determines the need to develop “second generation” methods. Rittel notes that, unlike problem solving based on logical analysis, the designer's reasoning is rather disorganized. The reason for this, the scientist thinks, is not in the lack of intelligence, but in the nature of project tasks - there is no clear division of activity into task formation, synthesis and evaluation. All this happens at the same time. The design problem is

[7] H. Rittel, *Developments in Design Methodology*, ed. by N. Crossб N. Y.1984, 317-327.
[8] В.Л. Глазычев, *О дизайне. Очерки по теории и практике дизайна на Западе,* М.: Искусство 1970.

constantly changing in the process of solving it, because such important things as the understanding of what needs to be achieved and the methods of achieving it are constantly changing.

The influence of "second generation methods" of design on design schools cannot be denied. Since the 1990s, design teaching has become project-oriented.[9]. At American universities, attention is paid to creating a competitive portfolio, at German universities - knowledge of the workflow and rules, at British universities - the skills of experimentation, research, and explanation of decisions. The study of technology is mandatory in all areas. The digital environment has changed all approaches to design and has taught different designers to collaborate more with each other. At the same time, it gradually became clear that such a mindset, instilled in designers, can be extremely useful in business and entrepreneurship. The main change is that it is no longer enough to train staff for existing studios, agencies and design departments, because after graduation there is a great interest in starting your own business - be it a startup, studio or project. It became necessary to learn entrepreneurship, responsibility and free-thinking[10].

At the end of the 20th century, the development of such a socio-cultural phenomenon as project culture, which became a stylistic characteristic of modern thinking, was marked. General theoretical provisions about project culture in the context of our research, it is possible to draw a general conclusion that project culture includes educational and practical activities united by one goal - the development of project thinking and skills. Educational standards of the 3rd generation allow to largely independently determine the methodical and educational model of professional training of designers.[11].

The problem of design education

Thus, by the end of the 20th century, compared with the period of the formation of design (the beginning of the 20th century), design developed, acquired a special meaning and content, and became the defining stylistic characteristic of modern thinking. It should be noted that

today theorists consider design as a universal method that can be used in almost any life situation. A new understanding and application of the profession, as they say, is completed here and now. The interpretation of project activities has changed radically[12].

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[9] Joseph O'Connor, *The art of systems thinking. Essential Skills for Creativity and Problem Solving*, Publisher Thorsons 1997, 288.
[10] Catherine McDermott, *Design: The Key ConceptsTaylor* , & Francis, 2007, 264.
[11] C. W. Mills, *Man in the middle: the designer*, *Power, Politics and people*, the Collected Essays of C W. Mills, New York 1967.
[12] В.Р. Аронов, *Современная теория дизайна,* М.: Артпроект 2009, 7 - 25.

This circumstance led to a methodological crisis both in the profession and in design education. In what direction will Georgian education develop in the near future - these questions have arisen with all their acuteness relatively recently. The educational process in the Georgian school of design, as well as throughout the post-Soviet space, for well-known reasons, was isolated from the formation of design theory and, to a large extent, design practice. There was a need to review and develop new goals, content, forms, methods and means of education. With the help of modern teaching methods, there is a need for a structural change in the quality of the educational process and a transition to a different system of functioning.

There is no doubt that the modern process of internationalization of higher education, the commonality of the tasks facing the educational systems of different countries of the world, create the prerequisites and opportunities for studying and obtaining the most successful foreign experience in educational policy. This is our current decision, since the traditional understanding of the content and goals of the professional training of designers in universities is unclear. In the three decades that the market economy has existed, the education system has not yet defined the set of skills that a certified designer should have at the end of higher education. For example, I will say one thing - the main criterion for the final assessment of a graduate is still knowledge. However, it is clear that the assessment of educational results today is determined by competence (the ability to solve numerous professional tasks), and not only by the quality of knowledge. Today in scientific circles, the opinion also prevails that the criterion for the success of a specialist is not so much the study of academic subjects. The main thing is the attitude of the student to his own knowledge. This, first of all, is facilitated by the acquisition of personal and professional experience by non-standard means in the learning process, mastering specific design thinking. [13]. For us, it is also indisputable that these transformations should be carried out taking into account the national characteristics of the development of education.

General foreign practical experience, we come to the conclusion that the most important task of further development of design-education is the realization of design-education. Hence, the idea that project learning technology should become one of the leading parts of the educational process in the conditions of the market economy is actively discussed. It is accepted that the project method (also called the problem method) is not fundamentally new in world pedagogy. The history of the project method begins at the end of the 19th century in the United

[13] Katja Thoring, *Roland M. Müller Understanding design thinking*. International conference on engineering and product design education. 8, 9 September 2011, City University, London, UK

States (1884, Chicago). American philosopher, psychologist and teacher John Dewey[14] They link the concept of pragmatic pedagogy. The main idea of John Dewey is that only what is useful to a person is valuable. Training should take place with the appropriate activity of the student, personally interested in this knowledge. That is, the teaching is not for the sake of teaching, no distraction. The founder of the model believed that it is important for the student to see how the acquired knowledge will be useful in later life. Developing this idea, V.Kh. Kilpatrick[15] and his associates created the concept of project-based learning. It was dominated by the idea of learning through the organization of "purposeful actions." They justified this by the personal interest of the students in what would be useful to them in their future work. In subsequent years, the theory was researched and developed. For example, unlike many authors who associate the creation of the project method with J. Dewey, the German scientist Michael Knoy suggests that the birth of the project method in education can be considered from the 16th century. According to his scheme, from that time on, the project method began to be successfully applied in Italian architectural workshops, then it spread to Europe, and in the 19th century to the USA. From there, this method, thought out and developed, returned to Europe. European countries became interested in the system, and since 1915 the project method has been considered and used in many countries of the world as a specific American educational strategy. However, the periodization proposed by M. Knoll is still conditional. Interestingly, the USSR was also interested in the system. However, the popularity did not last long. Due to low academic performance in the 30s, Soviet education returned to the academic methods of the learning process - a subject form of the content of education was introduced. The unpreparedness of teachers and students, superficiality, unsystematic knowledge, skills, habits, etc. were named as the reason.

Of course, over time, the idea of the project method has undergone some evolution. American psychologist, Professor Joy Paul Gilford[16] After the publication of the articles, the concept of creativity as a universal cognitive and creative ability gained popularity. From 1965 to the present, the rediscovery of the idea of the project and the third wave of its international distribution began. It is now becoming an integrated component of a developed and structured education system. But its essence does not change - to arouse students' interest in certain problems, which involves the possession of a certain amount of knowledge and project activities, provides a solution to these problems, the ability to practically use the knowledge gained, development. The main thesis of the modern understanding of the system of life projects is also interesting - "I know why I need

[14] John Dewey, *Froebel's Educational Principles*, Chicago: University of Chicago 1915, 111-127.
[15] William Heard Kilpatrick, *Foundations of Method : Informal Talks on Teaching*, Macmillan1925, 38.
[16] Joy Paul Guilford, «Creativity», *«American Psychologist»*, 5 (1950), 444—454,

everything that I study." I know where and how to use this knowledge." This thesis attracts many international prestigious high schools

because "they want to find a reasonable balance between academic knowledge and pragmatic skills."

Thus, project-based learning in pedagogical practice is not fundamentally new, but it is referred to as the pedagogical technology of the 21st century, since it provides the ability to adapt to the rapidly changing world of post-industrial society. I think the effectiveness of this learning model today is beyond doubt. We try to join their ranks. Accordingly, since we have a claim to bring students into a new space, our task as teachers is to develop a methodology for educational technologies of the educational process, which is based on the theoretical foundations of design design and the use of the latest, innovative ways of design education, the development of specific design thinking in students , the transition to problem-based learning and A.S. . We think that this is how we will move to a newer, higher quality level of education. Most importantly, the training will be closely related to the professional activities of the future designer. However, it must be said that in the international research space, various approaches are developed by trial and error, a task is formulated and accepted, but a system of pedagogical and philosophical concepts has not yet been formed. There is no project-based learning model, a generally accepted methodology for the formation of competencies. We would add these common problems to ours - it is necessary that theoretical knowledge and practical activities obtained in the classroom intersect at the enterprise, it is necessary to have a material and technical base and much more that our education system does not have. Today it is already recognized that the preparation of students for design education is no longer keeping up with the dynamics of current changes, the requirements for design are growing and changing much faster than the education system can take into account.

As for, in general, the current SCCA training process in fashion design. New technologies and constant changes force us to be more dynamic and ready. Consequently, this circumstance frees us from limited methodological conditions, makes it possible to determine our own way of understanding the problem. Undoubtedly, in the context of integration into the global educational space, interest in foreign experience in our field is natural. Accordingly, special attention is paid to areas that represent the most interesting examples of the development of fruitful ideas, concepts and experiments in the field of professional design education, focusing on the knowledge and skills that are in demand in the labor market. Our goal - based on the novelty of the idea, interdisciplinary creativity, experiments, the result must meet today's design and creative requirements. Our activity in this direction still depends on personal initiative and funding, which is very scarce.

In all possible and acceptable ways, we are trying to break through the interfering framework of the existing educational program, subjective or objective objections. Based on the foregoing, the forecast here is as follows: in order for a specialist to be in demand, he needs to

constantly update his knowledge, delve into the features of other professions, and education should prepare him for this.

It is possible to predict a large demand for interdisciplinary specialists in the near future. "Otherwise, the future designer will not be ready to cope with his tasks.»[17]. Hence, our main task is to prepare for professional activity in a market economy; Hence the principles of our educational process and efforts to fulfill the main tasks arise: development and experimental verification of new content, forms and methods of teaching, educational technologies; Providing free creative space for students, from universalism to an individual approach to learning; Development of creative abilities, personality, initiative, etc. . We try our best to fulfill these requests. To do this, the program and structure must be fundamentally different from the traditional education system. In this format of the educational process, the approach of the traditional reproductive method, which is the antipode of projective methods, certainly does not allow this. Because design is a priori a creative sphere of human activity aimed at creation. A mere statement of facts and certain skills are not enough to succeed in the field of design. Therefore, the question of how to teach is the most important and very difficult issue in the entire process of teaching students. Of course, we by no means deny the importance of the reproductive factor. The idea that creativity does not arise from scratch was clearly and accurately expressed by Robert Solso in his work "Cognitive Psychology": "When an apple fell on Newton's head and inspired him to develop a general theory of gravity, he hit an object full of information. "[18]. In accordance with this task, it is necessary to create new methods and technologies for training designers for teaching the main special disciplines, it is necessary to involve each student in an active cognitive process, to create an adequate educational and subject environment that provides free access to various sources, the possibility of joint work on various problems.

It should also be said that learning in the broadest sense also includes complication and synthesis, the teacher works with many variations, and in his work there is also no "one right answer" to the optimal solution. As with the designer, the educator places an emphasis on alternative ways of thinking, decision-making strategies, and action plans. We can say that today

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[17] Joseph O'Connor, *The art of systems thinking. Essential Skills for Creativity and Problem Solving*, Publisher Thorsons 1997.

[18] Robert L. Solso, *Cognitive Psychology*, New York: Harcourt 1979, 499.

design teachers are double professionals: designers and educators. And each of these roles, of course, has its own specific tasks. For example, practice has shown that students have different approaches to solving project problems. Some of them prefer greater clarity in their problem statement, some want more personal freedom in research and interpretation, some find it difficult to choose alternatives and seem less capable of creative activity in search of the

simplest "correct" solution. This implies the task of the teacher to find a strategy that will be adequate to the type of thinking of a particular student or his stage of creative development.

In accordance with this task, for the training of designers, as already mentioned, it is necessary to create new methods and technologies for teaching the main special disciplines; It is necessary to involve each student in an active cognitive process, to create an adequate educational and subject environment that provides free access to various sources, the possibility of working together on various problems. Our project activities are very important for such activities as an effective means of developing students' critical thinking and creativity. To date, the most promising in design education is the method of projects.

Development of a project-based learning model for the TSSA Academy fashion trend (experimental development of a project-based learning model)

Project culture is stated as the basis of the educational paradigm of the 21st century. At the present stage of development of society, the design culture is a field of general scientific knowledge, which implies a complex of knowledge, skills, experience, as well as personal qualities that ensure their use in the practical sphere. The culture of design is realized as a special type of thinking and design and artistic activity of people.

Summarizing foreign practical experience, we come to the conclusion that special attention is paid to the implementation of project-based learning. Increasingly, designers have to solve problems that have never before touched their creativity. Therefore, one of the promising directions in the development of the education system is the widespread introduction of the project-based teaching method, which, in order to solve specific practical problems, is focused on increasing the cognitive activity of students. The essence of project-based learning lies in the concept of "project", which is defined as an idea, as a developed plan for a structure, a mechanism; Creation of a model of an object in accordance with socio-cultural, utilitarian, practical, aesthetic functions and patterns of shaping.

To date, the most promising method in design education is the method of projects, which involves a combination of ideas, attitudes and behavior of subjects involved in project activities.

This combination allows all its participants to easily and without problems implement projects. This method allows the teacher to intensify research work through the use of various forms and methods of students' independent cognitive and practical activities. In the process of project activities, problem-based learning methods are used, which create opportunities for modeling the process of activity and generalizing knowledge in other scientific disciplines necessary to solve the problem. With the help of this methodological technique, the student solves specific tasks and problems, goes beyond stereotypical solutions in order to find a non-standard way out of the situation.

There are many unknown and unexplored directions in design engineering in Georgia. Therefore, teaching a student to invent, develop, design a design object is not as easy as it seems at first glance. Yes, students study relevant professional disciplines and these skills will definitely help them in their professional activities. But no one knows which discipline from the list of curricula will be useful in one case or another. Therefore, the formation of professional competencies, the acquisition of professional skills in the field of design is the most basic and most important thing that students should receive in the educational process. All methods and methods of creative thinking known to psychologists, educators and in general to any professional in creative activity help to understand the design process. Therefore, the teacher must develop project-based teaching methods. The problem is which one to offer to a particular student for the development of a particular project. In this type of activity, everything is very individual. Or, perhaps, a unified methodology for the design process will be developed, which will lead any student, with any “set” of skills, abilities and talents, to the formation of professional competencies, to the possibility of their use in the future when designing. design objects. This is a problem of choice: which way of developing professional competencies will give an acceptable result? We think that even if a student has a very interesting idea for design, at the first stage he should fix it in his plans, determine its development and how to use it, in which part of the project; That is, it is necessary to "create a plan of action." Consultations, exchange of impressions and thoughts, forecasts, explanations or comments are necessary already in the design process. The teacher can single out this period and, in general, offer the student a method of understanding the first stage of design, that is, a method of constructing work at the stage of first ideas and conceptual thoughts. Based on our experience, we consider it necessary to consult with students of creative professions and approach individual interviews. As a result of such communication, each student develops ways to achieve results acceptable only to him.

,,COMBINATORICS"

For greater concreteness in our work, we try to demonstrate the creation of an objective model in accordance with socio-cultural, utilitarian, practical, aesthetic functions and the laws of shaping on the example of an experimental, educational and creative project "Combinatorics"; present design as a process that shapes and develops design thinking; That the essence of project-based learning is the concept of "project", which is defined as an idea, as a developed plan for a structure, mechanism, device. The project is focused on the involvement of fashion design students in project activities. The student's work process takes place in several stages from the initial idea to the embodiment of the object in the material. A review of the scientific literature on the stages of project design showed us that researchers have no fundamental differences in their approaches to this issue. Nevertheless, generalizing many assumptions, we

can say that the position of the American scientist Herbert Simon is closest to us.[19], who outlined the 7 phases of design and engineering, and Carl Freya, director of the Future of Work program at the University of Oxford.[20] A model in which he identifies 17 distinctive features of the project method. Taking into account our features and conditions, based on the version of these scientists, we have defined the approach to the implementation of the project as follows:

The format of the Combinatorics project is multi-figure installations (subject series, op art, fabric technologies, video art); The combinatorics project is divided into zonal zones - 6 spaces; The scale of the zoned wall is 6 m (total 36 m); design of the wall plane - in black and white (graphics); Techniques used - the texture of the "cross", obtained from the fabric; texture options; spatial objects/non-standard patterns; Material - biaz

Design is carried out in two stages: pre-design and design. The previous stage of the project is associated with the collection of information about the design problem, generalization, search for possible ways to solve this problem and the development of their own principles. The design phase of the design process involves the practical creation of a design product. Our peculiarity in this case is that design engineering as an academic discipline does not appear in the educational process. Accordingly, students are less ready for such processes, and it is necessary to carry out more preparatory work with them, because the formation of an idea and concept is an important and necessary stage in the development of any design object. This helps simplify and optimize design decisions.

Thus, the first stage is an explanatory and illustrative method. The main action is to familiarize the project participants with the teacher's project initiative, explain and illustrate the

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[19] G. Simon, *"Sciences of the Artificial",*
https://monoskop.org/images/9/9c/Simon_Herbert_A_The_Sciences_of_the_Artificial_3rd_ed.pdf
[20] Carl Benedikt Frey, *Project method",* publishing house "Baltz", Germany 1997

topic. The task of students is to listen, remember and understand the flow of facts, ideas, conclusions and assessments. The value of this method is in its simplicity and accessibility, it is effective in discussing theoretical issues that do not require independent reflection, but only ready-made knowledge as an axiom. There is definitely a problem here. The student acts only as a passive recipient of the flow of information, at the same time he does not think and remember everything. Therefore, the main disadvantage of the pre-project stage is the lack of creativity. For students of creative specialties who are accustomed to creative activity, this method leaves no freedom of expression. Nevertheless, as our practice has shown, this process should not be ignored. For our students, this is important for various reasons, especially at the initial stage.

Next - the design stage: ; 1) we develop a project initiative; 2) discussing the shape and dimensions of the design object; 3) working on its structure and content; 4) select and specify the style of creating a design object; 5) looking for methods and means of developing all provisions of the concept; 6) self-organization of design production; 7) entry into discussions,

etc.; 8) project participants inform each other about the progress of work; 9) The path that the students took when developing the project can be conditionally defined as follows: each stage was characterized by its tasks, mechanism and result.

In the process of going through these stages, problems were formulated, the right questions were asked, ideas were comprehended and the best solutions were chosen. At the same time, these stages were not linear - it was possible to go through different stages at the same time, or, if necessary, return to an already completed stage. Clarifications, changes, corrections of the work performed contributed to a faster transition to the design stage of design objects. Accordingly, the professional competencies of the designer were formed. Thus, each stage can be considered as part of the educational process, where a whole range of skills was formed, namely, the rapid and creative development of teaching methods, project, communication, organizational skills, the development of initiated creative abilities, understanding of values, etc.

It should be noted that it is not always possible to generate new interesting (creative) solutions and original ideas using already proven design methods. Both foreign and own pedagogical experience shows that the development of project thinking among students, overcoming psychological inertia, the search for non-trivial ways in creativity is carried out through the active use of heuristic methods (combinatorics, transformation, modular design, deconstruction method, etc.). According to scientists, heuristic methods are non-traditional methods and techniques for activating design thinking, with the help of which a large number of ideas are activated in a limited period of time. The practical implementation of these creative technological methods, together with traditional empirical methods, contributes to the

development of students' creative thinking, artistic and design competence, initiative, the disclosure of individual creative abilities, the rapid finding of new solutions and raising professionalism to a high level (Gordon.u..[21] ; Grawford H.P.[22]; B. Matehett, A.H.Briggs.[23]; E.I. McCrory.[24]; A.P. 0sborn.;[25], D. Poya.[26]; Ch.S. Whiting.[27]; Ch.S. Whiting [28] etc.).

Some modern heuristic techniques are practically implemented in our project. For example, the combinatorial method is the acquisition of practical skills in designing a collection in a modular way.

The name Combinatorics comes from the Latin word "combina", which translates as "combination, connection." More often this term is used in the field of mathematics, where it is used in the study of discrete objects. Combinatorics in art, in particular in ornamentation, is a way of connecting, arranging and arranging individual images, in which special mobile forms are replaced by various combinations of the same elements (morphotypes). One of its characteristic features is its openness to the free development of form.

The primary task facing the students in the project was to find, with an individual approach, a combinatorial element, from which, using heuristic methods based on the module, ornamental structures were to be developed that would be associated with cyclic compositions. To accomplish this task, various independent spatial forms-objects of volumetric images, inextricable, cyclic chains were created in the process of work by permutations (displacements), groupings (contact of forms), turns, organization of rhythms. ornaments were created, which were collected and placed rapportally (independent graphic compositions) on canvas. The use of compositional techniques to create chains of combinatorial elements gave the object maximum aesthetic and decorative expressiveness.

So, with the help of combinatorics of morphotypes, we have formed new combinations and, accordingly, new forms (non-breaking cyclic chains, graphic black and white colors and fabric surface treatment, etc.). For combinatorics, we used elements of a geometric shape and rectangular contours, such as a square or a triangle, because any shape with rounded and curvilinear contours has less formability than shapes with straight lines.

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[21]Gordon W.I.I. *‚Synectics: The development of creative imagination*. I.Y., Harper 1961.
[22] Grawford H.P., *The techniques of creative thinking. How the use your ideas to achieve Success*. Veils,Vermont, Faser Publ. Co 1964.
[23] B. Matehett, A.H.Briggs, *Practical Design Based on Method. In: The Design Method*. L., Butterworths 1966.
[24] E.I. McCrory, *The design method in practice* In: The design method,* London, Butterworths 1966,170.
[25] A.P. 0sborn, *Applied Imagination; principles and procedures of creative thinking*, N.Y.1953.
[26] D. Poya, *How to solve the problem*, M: “Librocom” 2010, 132–133.
[27] Ch.S. Whiting, *Creative thinking,* Reinhold;1st Edition 1958), 168.
[28] F. Zwicky, *Morphology of Propulsive Power*, Monographs on Morphological Research, H I Society for Morphological Research, Pasadena, Calif. 1962.

As a result of the project, we received: development of skills for intuitive composition building; acquisition of practical design skills in a modular way; development of skills in the generation and production of artistic ideas; development of skills for finding the optimal combination and solving visual problems with minimal means; creation of spatial form-objects of 3D images using new technologies; development of performing technique skills; Creation of a conceptual object from fabrics and designs of innovative textures obtained as a result of experimental studies; Development of spatial thinking.

We developed the visualization of the result of the project as follows - the general line of development of the concept (concept / wall + creative form / object + rational costume) and, finally, the presentation of the spatial composition (installation) and one of the forms of contemporary art - performance.

In our opinion, the approaches we use allow for a conditional plan of action. When using such a plan, the specific tasks of the design project will be creatively solved already at the initial stage of the project. You can move from simple to complex, from general to specific, gradually and systematically to an interesting and professional design of the object. Accordingly, professional skills and competencies develop.

Conclusion

We discussed the possibilities of project-based learning, the features of using this educational technology. During the implementation of the project, the following were observed: special interest of students in tasks and results; The majority showed independence in the collection of material, in the process of performing the design stages; Identified students with leadership qualities, able to convince others to implement their idea; The responsibility of students for work has increased, they have felt what it means to complete a design project by a certain date, the level of design, the opinion of stakeholders has become important for them. However, it should also be noted that some students were satisfied with the average results of the work, only the role of the performer and did not strive for any achievements. We see in this, on the one hand, the reality of life (not everyone can be a leader, a creative person), on the other hand, our responsibility and the activation of individual approaches to such students.

Thus, summarizing foreign practical experience and our pedagogical activity, we come to the conclusion that the project method provides high motivation for creativity, the development of design thinking, student initiatives, the formation of a design culture, teaches the techniques and skills of intellectual work, provides a combination of theoretical knowledge with practical , what is not less important. At present, we are: actively continuing to search for ways to improve the

methodology for teaching design, which, in our opinion, is necessary in the educational process of higher education; We are in a constant mode of studying foreign experience, trying, as far as possible, to experimentally verify and independently determine the methodological principles; We try to provide students with free creative space and conditions for independent activity. Our project is a prolegomena in this direction.

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