

INNOVATION IN ARCHITECTURAL EDUCATION

Olga Davydova, Ph. D^{1*}

**¹Associate Professor, Department of Architecture, SUSU*

***Corresponding Author: -**

Abstract: -

The choice of the form of representation of public experience due to the integration of fundamental science, the educational process itself and the needs of potential customers of project products is an actual problem for mastering cognitive, creative and organizational competences. The ability to predict their activities before the start of the project and the understanding that the activities of an architect do not begin and end with the project, but is a reflection of social ideals and values, and also aims at shaping the public consciousness of the future generation. Shifting the focus on self-awareness, self-assessment of its activities in the reflection of each stage is the basis for the formation of organizational competence necessary to fulfill social orders by the deadline. Organization of visibility in the relationship between teacher and students: 1) in understanding accepted and understood relevant information, 2) the possibility of self-unpacking of knowledge at the right time for students, within the framework of a holistic vision of the teacher's world, 3) self-diagnosis before public evaluation of the designed product. Assertiveness of creative personality and life according to the rules, appropriate use in the creative process of typical and standard, the search for new architectural forms and unused opportunities based on the analysis of typical and exclusive similar projects in the actual problems to be solved. Self-prediction and self-esteem, self-realization before consciousness, social assessment in a changing world, ready for the manifestation of new (other) qualities.

Key words: *-self-prediction, self-esteem, self-awareness, self-extracting of knowledge, information-intensive model, integration*



Distributed under Creative Commons CC BY-NC 4.0 OPEN ACCESS

INTRODUCTION

an innovative economy, the main factor in the renewal of production is a professional man with his intellectual and creative capabilities. Innovative education involves learning new knowledge through the integration of basic science, directly the educational process and production. In its best samples, it is focused not so much on the transfer of knowledge, which is constantly becoming obsolete, as on mastering basic competences, which then allow -as needed -acquire knowledge independently and form a new personality of a person who not only learns the world, but also acts, self-assessing in a timely manner (evaluating) the results obtained, being the "customer" of his education (his image of self). The ideal employee has competencies: vision and creativity, systematic thinking (which is much less often found in creative people), performing work on time and with desired results (which is extremely rare) (Hoffman Gref) Considering the study of architectural education the possibility of self-assessment for understanding and predicting their activities before public evaluation, based on the existing concepts of "self" -"I am a concept", revealed in the works of N.A. Berdyaev, M.M. Bakhtin, P.A. Florensky, K. Rogers, A. Maslow and other authors; pedagogy of cooperation Sh.A. Amonashvili, V.F. Shatalov, S.L. Soloveichik, S.N. Lysenkova, A.S. Makarenko, K. D. Ushinsky, N. P. Pirogov, L. N. Tolstoy, J. J. Rousseau, J. Korchak, C. Rogers; personality-oriented learning (V.A. Belikov, V.V. Serikov, I.S. Yakimanskaya, and others), the activity approach to personal development (L.S. Vygotsky, A.Ya. Halperin, V.V. Davydov, L.V. Zankov, A.N. Leontiev, S.L. Rubinstein, B.P. Yusov, and others); the psychological basis of the activity theory of learning in the studies of P.Ya. Halperin, Y. Aleksandrova, V.N. Druzhinina, E.G. Kabanova-Meller, A.N. Leontyeva, T.V. Lisovsky, N.A. Menchinskaya, S.L. Rubinstein, N.F. Talyzina; revitalization based on the theory of cognitive resonance (L. Festiger, L. S. Vygotsky, A. Ya. Halperin, L. S. Zankov, A. A. Leontiev, T. I. Shamova, etc.) of cognitive interest (L. I. Bozhovich, N.F. Dobrynin, A.G. Kovalev, A.M. Matyushkin, A.K. Markova, N.G. Morozova, V.N. Myasishchev, Z.I. Ravkin, G.I. Shchukin and others); the value aspect of personal development (Aristotle, Plato, Socrates, P. B. Alberti, R. Descartes, I. Kant, CI Lewis, M. Lomonosov, NL Khudyakova, etc.); we accept the World as something changing, where the future reality appears as an open and not fully predictable range of possibilities, new realities and qualities [2-20].

Modern psychological and pedagogical research process of knowledge

With the advent of a computer that solves many of the thinking processes much faster than a person who has "an extremely limited cognitive resource" and a "complete picture of the world", the latter remains the advantage of a person with the ability to predict relevant activities. The language of images is the basis of human consciousness (co-knowledge in the model of holographic reality). The whole is known before the parts and its structure is stable relative to the variability of the surrounding world. The mechanisms of cognition are revealed: "Before the birth, a large number of different groups of cells -neurons -form in the human brain. As they gain experience, neurons receive specialization. Specialization is determined once and for all as once acquired experience. When acquiring a new experience, the next experience is superimposed on the previous one, and the old one is corrected. In turn, the existing experience determines how the new one is perceived. With age it becomes a lot of experience, and it is more difficult to adapt it when acquiring a new one, since it is more difficult to find a group of non-specialized neurons" (Y. Aleksandrov).

"It has long been known that a person acts only insofar as he is able to predict ... Intelligence is not just the speed of information processing by man, not just the ability to creatively solve problems, it is primarily the ability to reconstruct in the mental space the structure of the characteristics of a task. This mental space should have a certain dimensionality (actual space), a certain stability and determine the success of the solution of the problem (if a person has not solved the problem in a finite time, he will never solve it). If we proceeded from the hypothesis of the speed of information processing, it would mean that any person can solve an infinitely complex problem in an infinitely long time (but this is not so). (V.N. Druzhinin).

The new approach to learning includes the personal approach, the fundamental nature of education, the creative principle, the essential and acmeological approaches, professionalism, the synthesis of two cultures (technical and humanitarian), the use of new technologies.

Architecture as a vivid example of the synthesis of technical and humanitarian cultures in construction and participatory design with an understanding of equal responsibility for controlled qualitative and quantitative results, leads to innovative architectural education in resolving contradictions between:

- the need to predict the results of their own educational activities today and now and the possibility of the gradual mastering of knowledge in the educational process;
 - the shift to self-determination, self-esteem, self-awareness, self-study in the learning of cognitive activity and lost the ability to make an independent decision in a huge information flow;
 - implementation of the work on time and creative personality assertive -a kind of self-expression in the ability to do things their own way, ignoring certain rules derived from social experience.
- Thus, there is a need to create a single (typical) model of architectural architectural design that allows you to independently unpack the necessary information for practical work (new or already studied) with the possibility of forecasting and self-assessment in the search for another (new) relevant to public interests.

Structuring information as an incentive for innovative discoveries

Information digital technologies are already being actively introduced into the educational process. Systems of access to educational programs and educational results of many universities become open. Interactive training equipment is being developed and implemented with updated content, possibilities for checking the development of cognitive, creative and organizational competences based on the results of processing the received data. This actively

changing process needs a certain stability and integrity, an integrated presentation of the material, with the possibility of placing the content of the taught disciplines in a certain packed structure by teachers and "unpacking" as necessary by students who, seeing the complete picture, will be able to predict, analyze their activity, showing greater activity. to solve creative problems. Memory and history are an integral part of DNA, our language, our style and our cities and therefore is an accelerator of our ingenuity (Charles Jenks).

The study of the laws of ancient architecture by many theorists (Leon Battista Alberti, Antonio Filarete, Francesco di Giorgio, Giacomo da Vignola, Andrea Palladio) led to the development of new architectural ideas of Baroque and Classicism. In their approach and conclusions, the works differed. However, consideration of the architectural form through the mutual influence of meanings and matter, semantics and constructive expediency of the organization of form and space, where semantic space correlates with the material world by information flows, continues in modern research in search of new (other) forms, functions, meanings associated with images pictures of the world, in terms of mixing user types.

Dmitry Mendeleev created his periodic system of chemical elements on the basis of the integration of physics and chemistry. In the periodic system of arts of Bulat Galeev, the integrative properties of existing arts are considered and the appearance of new ones is predicted.

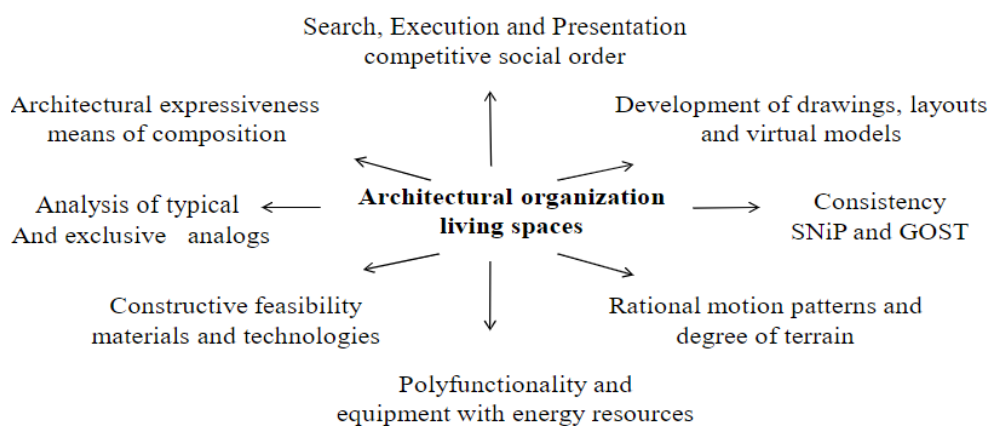
Constructive work with customers of architectural activities in the process of professional and educational activities is economically important. The presence of understanding that a society, evaluating a product, will look for the old in it, and then a fundamentally new (other) and its expediency.

Thus, reflection -conscious self-analysis, self-understanding of the rules of behavior in the organization of architectural activity, saving wasted efforts, prevention of professional self-ignition through Life by the rules, comes to the fore. The founder of TRIZ (the theory of solving inventive problems) G.S. Altshuller proposed an algorithm for solving problems: "Awareness of the problem → setting a goal formulating tasks → choosing a strategy planning → monitoring the implementation of plans understanding the results of activities" and recommended filling out the following table[1]

What is	Why it does not suit	What do you need
Problem formulation		
Known experience	Ideas for improvement	Is the problem solved

Model holistic form representation of integrated knowledge

Since the architectural organization of the living space is influenced by politics, religion and mythology, climate and landscape, building technologies and the existing typology of buildings, structures, fashion and prestige, etc., the learning process includes the implementation of architectural projects at various levels, with differences in the solution needed posed problems with tremendous information. However, the presented model, which has a general structure, predictably applicable first for self-control, and then for public control, becomes a guide in making independent decisions. Identification of characteristic, stable elements of project activities that are accepted by the public and elements of variable creative activity will allow you to effectively organize constructive communication with customers (teachers), identifying personal meanings of creative activity, leaving an indisputable relatively stable part



Picture: Model holistic form representation of integrated knowledge

The art of architecture harmoniously combines the necessary universal and professional, artificial and natural, social and individual, conceptual and figuratively expressive factors into a single artistic whole -a work of architectural art that expresses the personal author's picture of the world through the individual language of the architect in contexts of time and place. The concept (from the Latin conceptio -"understanding", "system") contains the principle (spatial, logical, coloristic, etc.) of reducing the integrity of several separate "themes", modeling in the context of thinking of the studied culture. The concept is formulated in the form of a paradoxical thesis -a problem.

Understanding of information (1-reception, 2-processing, 3-application) is associated with individual features. It is not enough to convey holistic information; it is important to ensure its efficient reception and processing. Visibility in the relationship -the key to success. Having prepared in advance questions-interviews to reflect your understanding (reception), it is proposed to analyze typical and exclusive similar projects in order to find out the relevance of your concept and create your architectural composition, knowing even before the design that it will be different (new) from the existing one.

The existence of a typical image has a sense of predestination and predisposition. An artistic image is a kind of integrity that organizes artistic meanings, moods and feelings, which also implies a certain systematicness inherent in it in the construction of architectural forms (according to O. Butkevich). On the other hand, the meanings themselves are shaped by nothing but a myth. The architecture of the post-industrial era, whose image is made up of textual correspondences with its original semantics, falls under the definition of metaphor. The present form of the existence of architecture due to the openness of its rational semantic system involves new forms of creativity, namely, semantic modeling, which replaces the ordinary design. The stylistic mechanism of textual reality is a spiral -an informational chain of textual clones (genes), including the full range of cultural and constructive exits to the open schemes of the mechanisms of shaping previous eras, and thus assumes a new (adequate modernity) form of creativity in architecture, namely, semantic modeling.

In the process of implementation of the creative component of the project, the student will be able to independently verify the scientific component of the diagnosed materials approved by the teacher. This saves time for both the student and the teacher, who often repeatedly corrects the same type of theoretical remarks with a large number of students in a group and allows an increase in the time for consulting the creative artistic and imaginative component of the project.

Testing the effectiveness of an innovative model of architectural education was carried out in the process of an organized pedagogical experiment in the classes of the disciplines "Architectural Design" and "Architectural and landscape organization of the territory of residential and public buildings." Diagnostic tools and metamathematical statistics tools are used. The research results were discussed at scientific conferences and published in printed forms of articles and monographs. Also works on the results of solving the problem are placed in the form of competitive participation (2014 -1 place for the development of "A system for assessing the achievements of planned results in the form of an integrated approach (visual arts)", 2018 -1 place for the development of "Alphabet of architectural composition. Workbook").

Conclusion

Thus, the rules for the development and design of drawings remain unchanged during the execution of any project. SNiP and GOST are attached to each project. There are standard and exclusive analogues, with expedient designs from approved materials and technologies. However, people want diversity, polyfunctionality and reasonable economy in the rational organization of the living space. The function contains a multidimensional ideological content and is reflected in the form of mutual influence of ideas and matter. Completely all parts of the project to create anew is not necessary. A single compositional certificate of presenting a project on a plane and in a layout differs from the degree of social importance of a project. The higher the status of the project, the greater the justification for social cohesion and the possibilities of financial influences. Performing work by the deadline and with the expected result is a guarantee of a decently priced (monetized) reasonable creative search. The search for socially significant architectural design orders is the beginning of a creative path. The fact that the work of the architect does not begin with a project, and does not end with a project, is already fully understood by modern architectural culture.

Self-assessment of the results of education -internal and external increments, through self-assessment of cognitive (knowledge), creative (creative), organizational (managerial), communicative, value-semantic competences, helps self-determination in what you love (passion), what the world needs (purpose), what are you good at (vocation) and for what do you get money (profession). The teacher, setting the deadlines for the project, organizes the process so that the possibility of forecasting and self-assessment in making meaningful decisions, was in a clearly accessible form before the start of work, had clear criteria for learning the boundaries of the creative search in the infinity of a changing world.

Acknowledgment

Work was supported by act 211 Government of the Russian Federation, contract No. 02. A03.21.0011.

Bibliography:

- [1].1. Altshuller, G.S. Finding an idea: An introduction to TRIZ -a theory for solving inventive problems. -5th ed. -M.: Alpina Publisher, 2013. -240 p.
- [2].2. Bezrukova, V.S. Integration processes in educational theory and practice / V.S. Bezrukova.-Ekaterinburg. 1994. -152 seconds.
- [3].3. Vygotsky, J.I. Psychology of Art / J.I. Vygotsky. SPb.: Alfabeta, 2000. -416 p.
- [4].4. Halperin, P.I. To the psychology of creative thinking. // Questions of psychology. -1985 -No 5. -p. 20-24.
- [5].5. Henry Sanoff. Participative design. Practices of public participation in shaping the environment of cities and towns / Henry Sanoff; per. from English; [ed. N. Snigireva, D. Smirnov]. -Vologda: Project Group 8, 2015. -170 pp., Ill
- [6].6. Guriev, A.I. Interdisciplinary communication in the system of modern education. Monograph. / A.I. Guriev -Barnaul. Publishing house of the Altai State University, 2002. -213 p.

- [7].7. Davydova O.V. Alphabet of architectural composition. Information and diagnostic materials for the discipline "Compositional modeling" areas of training 07.01.03 "Architecture". / O.V. Davydov. -Chelyabinsk, SUSU, 2017. - 48 p.
- [8].8. Davydova, O.V. Symbols of town-planning forms // Academic Bulletin of UralNIIproektRAASN 2014 No. 3 / P.36-38
- [9].9.Davydova, O.V. "Formation of common cultural competences in architecture" International electronic scientific journal AUD No 9 July 2016 P. 16-23
- [10]. 10. Davydova, O.V. Art therapy and modern educational technologies in the creative development of personality [Text]: studies. benefit for listen. training courses slave Education / author-comp. O.V. Davydov. -Chelyabinsk, REKPOL Publishing, LLC, 2009. -140 p.
- [11]. 11. Davydova, OV. Creative activity in the personal development of students. Monograph. -Chelyabinsk, SUSU Publishing Center. -2016. 93 with
- [12]. 12. Dutsev, M. V. The concept of artistic integration in modern architecture: a monograph / M. V. Dutsev; Nizhegor. state architecture. -builds. un-t -Nizhny Novgorod: NNGASU, 2013. -380 p.
- [13]. 13. Winter, I.A. Pedagogical psychology. [Text] -M.: Logos, 2000. -384 p.
- [14]. 14. Klimenko, T.K. Innovative education as a factor in the formation of the personality of the future teacher. Humanitarian vector. 2012. No 1 (29) <https://cyberleninka.ru/article/v/innovatsionnoe-obrazovanie-kak-faktor-formirovaniya-lichnosti-buduschego-uchitelya> C.1-10 (the date of circulation is 26.11.2018)
- [15]. 15. Kornilov, A.A. To the question of the study of externality -internality among modern students. // Psychology, sociology and pedagogy. 2012. No 5 [Electronic resource]. URL: <http://psychology.snauka.ru/2012/05/632> (access date: 10/01/2018)
- [16]. 16. Kraevsky, V.V. The problem of building a holistic theory of educational content and the learning process. // Methodological problems of modern pedagogical science and practice: a collection of scientific papers. - Chelyabinsk: Chelyabinsk State Technical University, 1988. -136 p.
- [17]. 17. Motovits, T.G., Kulik, I.V. Innovative education as a factor in the development of the national economy / TG Motovits, I.V. Sandpiper. Electronic scientific publication "Scientists notes PNU" 2013, Volume 4, No. 4, p. 356 - 359 -http://pnu.edu.ru/media/ejournal/articles/2013/TGU_4_89.pdf (the date of circulation 26.11.2018)
- [18]. 18. Psychology of abilities: Current state and prospects of research: Materials of a scientific conference dedicated to the memory of V.N. Druzhinina, IP RAS, September 19–20, 2005 —M.: Publishing House "Institute of Psychology, RAS", 2005. —477 p.
- [19]. 19. Khudyakova, N.L. Philosophy and development of education [Text]: studies. allowance / N.L. Khudyakova. -Chelyabinsk: Publishing house II-UMTs "Education", 2009.
- [20]. 20. Khutorskoy A.V. Three principles of successful dissertation [Electronic resource] // A.V. Khutorskoy. Personal site -Chronicle of life; 08.10.2018 -<http://khutorskoy.ru/be/2018/1008>