



## The effect of using modular training in the educational process in Architecture and Environmental Design

Anna Viktorovna Solovieva<sup>1</sup>, Tatiana Semichevskaya<sup>2</sup> Oleg Vitalievich Bik<sup>3</sup>

### Abstract

*The article is devoted to optimization of application of complex approach of formation of the professional competence in Architecture and Environmental Design. This work aimed to identify the conditions for the formation of professional competence using modular educational programs. In accordance with the set problems, the following tasks were solved: the state of the modern domestic and foreign design education was analyzed, the specifics of the designers training was substantiated, the essence of the concept professional competence and the requirements for the professional competence of future specialists were clarified, the methods of intensification of the educational process using modular educational programs were identified.*

*The methodological novelty of the study is the formation of a curriculum in the direction "Design of the architectural environment" on the basis of modular training, the development of new approaches in the activity of teaching staff, the construction of the trajectory of the creative development of future designers and the coordination of the work of teachers within the framework of the modular curriculum. The module system allows adjusting the content, updating the modules promptly, depending on changes in the requirements of the current labor market or the demand for a particular specialization. The authors determine the conditions under which the formation of future designers of the architectural environment will be most effective in solving problems and corresponding to modern requirements of professional competence and adapting the students to the modern labor market.*

*The results of the research were theoretically and practically justified and presented in the completed educational creative projects of the discipline "Architectural and project design". As a result of the work, the effectiveness of using modular training for the preparation of future environmental design architects and the formation of their professional competence in the passed course were revealed.*

**Keywords:** *architectural environment design, design education, professional competence, project-modular program, design-project;*

Designer is one of the oldest professions on Earth and combines a harmonious synthesis of aesthetics with manufacturability. Already in the era of antiquity, great thinkers touched upon the issues of the relationship between the benefits and beauty of the created. The Renaissance geniuses comprehended the immortal creations of their predecessors. Creating their masterpieces of architecture, painting and sculpture they studying the old and give birth to new aesthetic canons [4]. This principle is fundamental in the education system of architectural environment and architects.

The recognition of design as a strategic tool for doing business has become a fait accompli in our technogenic civilization [3]. In modern world most of the art trends are directly interrelated with the design and design activity becomes a socio-cultural phenomenon, harmoniously combined with the spiritual and utilitarian needs of the society.

In Russia the history of the emergence of design education at the beginning of the 20th century is correlated with the creation of the State Free Art Studios (GSHM) which formerly transformed into the Higher Artistic and Technical Workshops (VHUTEMAS) where design training took place at the intersection of production and agitation. All propaedeutic courses developed on the basis of these

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<sup>1</sup> The Department of Architecture and civil engineering, Peoples' friendship university of Russia (RUDN University), Russia

<sup>2</sup> The Department of Architecture and civil engineering, Peoples' friendship university of Russia (RUDN University), Russia

<sup>3</sup> The Department of Architecture and civil engineering, Peoples' friendship university of Russia (RUDN University), Russia



educational institutions were subsequently accepted by many world schools and included in the structure of initial training of designers. [2]

In modern social and economic conditions the need for high-quality design requires modernization of training system basing on the principles of the formation of professional competence, which primarily relies on the creative component, as well as on the set of activity components (design, production and technology, organization, management, research etc.).

The educational program *Design of the architectural environment* creates broad opportunities for implementation of the *invariant-variational* approach to learning and facilitates a more rapid adaptation of specialists to changing conditions of production and to modern life.[6] According to the authors of the first monograph on design *Education in Russia* Tkachenko E.B. and Kozhukhovskaya S.M., 'In the coming decades, design and design education will determine the pace of development of both market production and the economy, as well as the transformation of the culture of man and society' [7].

Since the end of the 1990s in the post-Soviet society, private educational institutions of higher education developed along with state institutions, combining culture, science and aesthetics with the commercial component. The main differences between this two educational systems are in founders and sources of funding. The advantage of private art institutions is in the specificity of educational activity, in the mobility, which allows the possibility of prompt and economically independent conduct and perfection of educational policy, which led to the development of a modular training system for commercial establishments first.

In 1997 Russia signed the Bologna Convention on accession to the common European educational space. Dye to the transition on a two- steps training system with the further training according to the Federal State Educational Standards of the new generation, the Peoples' Friendship University of Russia (PFUR) became the leader of modernization of higher professional education and the creator of new educational technologies among state institutions in the 21st century [5]. One of the main strategic directions in PFUR is a prognostic approach that makes it possible to open new joint educational programs for bachelor, master and postgraduate programs with foreign universities. That helps to include best approved modular program techniques improving structure to prepare graduates-designers for the modern requirements of the labor market.

Initially, the concept of modular training was theoretically developed in the works of the American researcher J. Russell [6], which determines the fundamental difference between the ordinary and the modular learning, where the teaching material is divided into separate modules (blocks), each of which is not only a source of information, but also a method for its assimilation [1]. Modules are formed as a structural units of the curriculum in the form of a set of sections from different disciplines grouped according to the topic or within the framework the discipline.

In the process of modular education, it is necessary to create certain conditions that influence the formation of professional competence of design students. This is the selection of the content, forms, methods and means of education and the relationship between teacher and student. The experience of modular training in the educational process of designers has been tested by the authors since 2005 in non-state higher education institutions of Moscow. As a result of the longitudinal research, in the process of training future architectural environment designers, it was noted that special attention should be paid to:

- Intensification of the educational process at the initial propaedeutic stage of education;
- Creation of a vario-modular curriculum in the process of mastering which develops art-aesthetic taste, sense of style, color and form;
- Development of new approaches in the activity of teaching staff;
- Training conduction under the guidance of educator-mentor, monitoring the professional development of each student;
- Mentor's close cooperation with students during the educational process;
- Coordination the activities of other teachers by mentors.

The main advantage of taking the propaedeutic module is the study of a large number of art disciplines. That influences the development of the student's creative abilities and form the integrity of his inner world. For the effective modular training of future designers of the architectural environment, the head of the direction is assigned the primary task - the formation of a curriculum as the main document of the educational process. All disciplines should be grouped to create 9 semester modules, with constant



updating of all stages and mastering the necessary number of SETs (60), because this format makes it possible for students to prepare for professional activities in a real conditions of architectural and design environment transformation. With this method of gradual development of all competencies we have the opportunity to form a fragment of an individual plan in a particular module for the student. Our proposed method of modular training differs favorably from the modular grouping of the disciplines of the Federal State Educational Standard and represents scientific novelty in design education. Let's give an example of the formation of such modules from the training practice in the direction Design of the architectural environment (DAS) of the PFUR Academy of Engineering.

The leading discipline of the DAS direction is Architectural and Design Project. In the first semester students take a propaedeutic course, formed by the disciplines of the art cycle of the curriculum, which allows students without basic art education quickly to become involved in creative activity. From second till ninth semester, the training takes place on the basis of integrated project assignments within the framework of the discipline Architectural and Design Project, which unites a number of academic disciplines and builds the trajectory of step-by-step professional development and the formation of the necessary competencies.

## Results and discussion

Modular semester teaching proposed by the authors provides students:

- Creative individualization;
- Socialization;
- Competence in technological and economic components;
- Ability to implement a design project;
- Adaptation to the labor market based on the results of predictive research;
- Wide designer profile with variational specializations.

The modular system of education promotes more effective preparation of future designers of the architectural environment.

While training design specialists, it is advisable to use the achievements of both domestic and foreign design schools. Introduction of new distance technologies into a modern educational process with the saving of material and time costs allows the full implementation of all tasks assigned to modular education. An important role in this process is played by the introduction of practical design disciplines in each training module. Towards it the team of authors - teachers of the DAS direction in the PFUR Engineering Academy organized an Art Workshop where students are trained in terms of group interaction and real implementation of their ideas making their semester projects. For example, the design project of apartment includes the elaboration of interior details: a painting made in a certain technique, decorative mosaic panels, stained-glass windows, furniture paintings, wall paintings, creating of interior items and manufacture of textiles. Each of the modules aimed at solving the main task of the semester is based on practical activities and helps to create a design project that meets modern requirements, defining social aspect of future architectural environment designers.

The modular training system gives significant results - students solve the assigned professional task in each module, starting from sketching and drawing up to making design ideas in the material. The effectiveness of modular training is confirmed by the competencies of the students. The criterion of professionalism of graduates is the assessment of the level of knowledge by employers. Investigating the effectiveness of modular education, we associate the formation of professional competence of future designers with aesthetic upbringing of the personality, which, in combination with design mastery and knowledge of the latest technologies in design, is aimed at transforming the object-spatial environment and is the basis of the design professionalism.

## Conclusions

The use of a modular approach based on the systemic principle allows to build the trajectory of professional training for each future designer throughout all the years of training, based on the interconnection and integration of academic disciplines aimed at solving specific tasks in accordance with the increasing level of their complexity.



In turn, the modular process of teaching contributes to the disclosure of the creative potential of teachers for the implementation of various innovations, promising ideas and original new author's programs, using distance learning technologies.

Further development and improvement of new training modules in the education of architectural environment designers promotes communicative rapprochement and cooperation with world design schools.

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