

FEATURES OF PROVIDING INTENSIVE EDUCATIONAL PROGRAMS IN ARCHITECTURE AND DESIGN FOR HIGH SCHOOL STUDENTS

CARACTERÍSTICAS DE FORNECER PROGRAMAS EDUCATIVOS INTENSIVOS EM ARQUITETURA E DESIGN PARA ESTUDANTES DO ENSINO MÉDIO

CARACTERÍSTICAS DE OFRECER PROGRAMAS EDUCATIVOS INTENSIVOS EN ARQUITECTURA Y DISEÑO PARA ESTUDIANTES DE SECUNDARIA

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ABSTRACT: An innovative approach to designing educational programs under the conditions of the diversity of forms of education is vital since it calls for the variability of approaches to delivering educational material, as well as for consideration of the psychophysiological characteristics of students, which change amid the pandemic, and, accordingly, consideration of restrictions on movement in education, the reconsideration of values, and many other aspects of the current situation. This problem is very acute in professional environment because it requires a prompt and correct change in the educational and methodological material. A new approach to teaching is necessary not only in the sense of changing learning assignments to enable distance learning but also with respect to the semantic content structure of the methodical material. The characteristic features of teaching school students in the present conditions call for the introduction of intensive courses in additional education with consideration of pre-vocational training.

KEYWORDS: Education. Pedagogy. Architecture. Design. Reform.

RESUMO: *Uma abordagem inovadora para projetar programas educacionais sob as condições da diversidade de formas de educação é vital, pois exige a variabilidade de abordagens para a entrega de material educacional, bem como a consideração das características psicofisiológicas dos alunos, que mudam em meio à pandemia e, conseqüentemente, a consideração das restrições à circulação na educação, a reconsideração de valores e muitos outros aspectos da situação atual. Esse problema é muito agudo no ambiente profissional, pois requer uma mudança rápida e correta no material didático e metodológico. Uma nova abordagem de ensino é necessária não apenas no sentido de mudar as atribuições de aprendizagem para possibilitar o ensino a distância, mas também no que diz respeito à estrutura de conteúdo semântico do material metódico. Os traços característicos do ensino dos alunos das escolas nas condições atuais exigem a introdução de cursos intensivos de educação complementar tendo em mente a formação pré-profissional.*

PALAVRAS-CHAVE: *Educação. Pedagogia. Arquitetura. Design. Reforma.*

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RESUMEN: *Un enfoque innovador para el diseño de programas educativos bajo las condiciones de la diversidad de formas de educación es vital, ya que exige la variabilidad de los enfoques para entregar material educativo, así como la consideración de las características psicofisiológicas de los estudiantes, que cambian en el medio de la pandemia y, en consecuencia, la consideración de las restricciones de movimiento en la educación, la reconsideración de los valores y muchos otros aspectos de la situación actual. Este problema es muy agudo en el ámbito profesional porque requiere un cambio rápido y correcto en el material educativo y metodológico. Es necesario un nuevo enfoque de la enseñanza no solo en el sentido de cambiar las tareas de aprendizaje para permitir el aprendizaje a distancia, sino también con respecto a la estructura del contenido semántico del material metódico. Los rasgos característicos de los alumnos de la escuela de enseñanza en las condiciones actuales exigen la introducción de cursos intensivos en educación adicional con consideración de formación preprofesional.*

PALABRAS CLAVE: *Educación. Pedagogía. Arquitectura. Diseño. Reforma.*

Introduction

At present, not every interaction in the global community poses new requirements to postpone activities in the context of high rates of mortality in the population and high suicidality in the younger generation. This cannot but affect the development of mental processes in school students. In the current conditions, state programs aim to stabilize and intensify the educational activities of school students.

A university applicant needs to not only navigate well in the socio-eco-political conditions but also to rely on the fundamental, basic, grounded structures of socio-economic relations, high standards of the spiritual richness of society, relying on changes in the quality of people's lives, including national security. And one of the essential aspects of national security is the ecology of society, the ecology of human life and the environment. The National Doctrine of Education in the Russian Federation talks about restoring Russia's status in the world community as a great power in education, culture, science, and high technology (ZHDANOVA; GAVRITSKOV; EKATERINUSHKINA, 2019; BYKOVSKAIA; SEMENOVA, 2018; VALIKZHANINA, 2017). Since the problem is phrased as the restoration of great power, it means that, having been a great power until a certain time, Russia has lost this status. This suggests a question as to when, until which point in time did Russia maintain the status of a great power and what is the time frame of the crisis in which Russia exists as not a great power. Moreover, the question is whether this implies that Russia will remain without this status until 2025, as long as the Doctrine is in effect. Considering the sphere of education, quite a vital question is when did Russian education lose its former

status, at which time was Russian education the education of a great state, and at which point did it stop being one. These questions are critical to answer to conduct a comprehensive analysis of the state of modern Russian education (DUBROVIN, 2016; IVANOVA *et al.*, 2019; NIZAMUTDINOVA *et al.*, 2018).

Methods

Full-fledged training in design can only be carried out considering the ecological requirements and norms of both ecological and architectural environments.

Conscious and coordinated goal-setting, in addition to designating and formulating purely educational goals, will allow to conceptually distinguish between the categories of the result and the product of practical activity, which are seemingly close but fundamentally different in terms of the final result (MAMONTOV; GANOVA, 2020, p. 564).

Most of the standards are described in school textbooks, and at first glance, no research and scientific problems should arise. However, ecology is a changing and evolving science due to both external and internal factors. Among the external factors are the changing environmental conditions due to pollution from chemical, oil refining, and other industries, among the internal factors are changes in the parameters of environmental requirements due to changes in the life of society and the physical health of individuals (BALABAN *et al.*, 2019). What is then the role of visual arts in the formation of ecological standards for the environment and can visual arts not only promote the normalization of the ecological systems of humanity but also contribute to the development of a certain algorithm of environmental compliance during undergraduate training in design? It needs to be borne in mind that visual arts themselves are an important element of environmental ecology and it is specifically visual arts that serve as a source for the formation of comfortable psychological space of the streets and residential and administrative buildings. “Learning outcomes (knowledge, skills, practical experience of creativity) are known to be aimed at transforming and improving the student’s socio-cultural environment since the development of a creative personality is only possible in the process of creative work” (BUROVKINA; NOZDRACHEVA, 2018, p. 12). The signs of visual communication, color harmonization, color wheels, gradients etc. came to graphic design precisely from the visual arts. Thus, initially, the arsenal of the means of ecological culture laid in visual arts as a sphere of human activity, therefore, the potential of these means should be investigated and regulated. The theory of composition was proposed by the artist V.

Kandinsky during his work in the Bauhaus. Along with him, the methodology of the new art of design was developed by many other artists and architects, however, they were the ones who translated into the language of design the fundamental principles of the compositional construction of the environment and developed the primary color and coloristic plans-maps for environmental objects.

The innovative approach is actively implemented by the “Sirius” Educational Center. The realization of the world and domestic advanced technology in the Center also contributes to the development of the methodological base in the regions, it is the Center’s innovative forms of educational processes and digital technologies that help methodologists and teachers in the regions to navigate the educational systems of modern schools. In particular, in the Southern Federal District of Russia, the State Budgetary Institution of Additional Education of the Rostov region “Stupeni Uspekha” implements numerous educational programs, seminars, webinars etc. on the basis of educational trends. New programs are developed and the leading educators with international credibility are recruited. Developments are made in the spheres of applied arts, fine art, design, and architecture. One intensive educational program developed by the staff of “Stupeni Uspekha” similar to the program of the Educational Center “Sirius” is “Architecture and Design”. The program has quite a complex, capacious complex of scientific and methodological support and artistic and creative components. The challenge lies in the choice of two forms of art – architecture and design, which each on their own contain a multitude of problems at their core. It is quite difficult to present to high school students the fundamentals of architecture as an art form, to reveal its functions and aesthetic categories, to distinguish the problems of design as an art form from the philistine commercial problems, to designate it as an independent link in the chain of contemporary arts. Even more difficult is the task of uncovering the step-by-step methodical interaction of the two arts, putting the interrelations and contradictions into a single conception, and designating it as the artistic and creative sphere of future architects and designers. The aim of this work needs to be the transformation of the contemporary urban environment and the design of outdoor and indoor facilities. The program is developed as a set of services both in the distance and face-to-face format of learning, using digital technologies and man-made design.

The identified problem requires further theoretical, experimental, and practical developments aimed at the possibility of determining the degree of integration of special artistic disciplines in the development of professional

competencies of designers and holistic ideas about the expressiveness of artistic language (BUROVKINA *et al.*, 2018, p. 352).

Since the children taught in the program studied in the full-time mode and the learning process, independent work, and leisure activities were constantly monitored by teachers, mentors, and tutors, any borrowings of other people's ideas were prevented. The child needed to be focused on realizing their own potential. "Children's creativity is a certain algorithm for understanding the nature of art, the stages of the historical development of artistic world culture convince us of this" (PRISHCHEPA *et al.*, 2019, p. 352). The mobilization of creative potential, the effervescence of creative ideas was one of the tasks of teachers and psychologists. Thus, building a team of like-minded, highly professional people enthusiastic about their profession already at the first stage was quite a challenge.

The first stage of pre-vocational training of schoolchildren involves the proposal, justification, and development of the educational conception. The second stage includes the selection of the methodological base and software, the organization of digital resources, and the formation of the teaching staff, which is not a trivial task that requires special efforts. The need to ensure a high quality of teaching called for recruiting not only renowned artists, designers, and architects, but also representatives of the talented creative youth from among the masters and graduate students of architecture and design departments.

Some difficulties are faced in using terminological expressions, as it is not typical for applicants to use them in preparing and defending projects. Phraseological expressions in design and architecture also cause misunderstanding in the assimilation of pre-vocational knowledge. Consequently, it is necessary to prepare a terminological guide for applicants to educational programs. The things that in everyday life are explained in one's own words, descriptively, need to be referred to by their proper terms during training to prevent misunderstanding of the specific characteristics of an art object both by the applicant and the teacher. This is an important precondition for understanding the essence of the profession and solving architectural and design problems. Many of these problems are hidden and remain invisible without penetrating the essence of design, they seemingly do not exist, yet pitfalls may appear even in correct design. The teacher needs to not only understand them themselves but also find ways to explain them to the applicant. To give an example, we can consider the initial stage of design – pre-project analysis, which is based on studying data on the designed object and forming the idea of graphic searches. The general principle of design in various industries involves organizing the environment with comfort, ergonomics, and aesthetics in

mind. This statement is subject to doubt. Nevertheless, individual design implies solving not the general methodological problems but design tasks for a particular consumer, which generates a lot of conditions for the educational and methodological process. Thus, each student needs to develop a technical task considering the scale, layout, personal qualities of the customer, their hobby, professional affiliation, psycho-physiological features, and many other things. A mandatory condition is to consider the inclusive features of society. These conditions methodically prevent any possibility of borrowing solutions from the Internet or from each other.

Thus, several program problems are revealed – **terminological support and an individual approach in training**. The stage of selecting students for the intensive educational program occupies a special place. The selection is carried out in a distance format, which simultaneously removes some of the organizational problems and complicates the monitoring of the situation in the region. Monitoring has several objectives – identifying the quality of training in the fundamentals of visual arts, the degree of interest in the seminar, trends in demand for design and architectural design by directions and types of objects, which, in turn, ensures the adaptation of the program to the students' level of training. Furthermore, today, “eye-catching, memorable marketing, promises, and advertising draw attention to themselves, form certain beliefs in society, the system of values and attitudes” (BUROVKINA; BELIAKOV, 2021, p. 298). At the same time, consideration of all circumstances does not provide guarantees and reliability of monitoring indicators, because, at the time of the course, many trainees turn out to not meet the level demonstrated in the distance format. This does not undermine students' advantages and does not indicate falsification of data in terms of the methodology and psychology of the processes of artistic creation. This is an understandable phenomenon. Yet still, to ensure the quality of students' training, the program should have a certain term of duration and include an educational course on the basics of visual literacy. On the one hand, this will provide the students with a precise algorithm of using visual means in the creative process, reveal the degree of exertion of creative efforts, and equalize efforts on the expressive and pictorial conditions proved for the project. On the other hand, such a course will provide the teacher with a methodical platform, a certain point of reference to ensure gradual assimilation of educational material, to develop a pedagogical conception and educational trajectory, which, in turn, directly affects the course program.

To ensure high quality of students' training, a short visual arts blitz course is developed. The course touches upon some aspects of artistic creativity strictly limited by the framework of the program and directly associated with architecture and design. The course includes some techniques for conveying spatial, structural, and shape-forming elements in graphic materials. It draws up the optimal digital typeface, elements sketching, as well as certain templates of the aesthetics and visuality of the graphic part of the project.

The work on the project consists of three stages. The first one concerns the concept, which is developed by each student and presented as a report followed by a discussion by the entire audience, in which the advantages and disadvantages of the concept are analyzed. This stage refers to the theoretical project framework.

The second stage includes scaling, zoning, and the development of blueprints and layouts taking into account different levels of the landscape and based on the terms of reference. The aspects considered include the function, socialization, geographic location, and meteorological conditions. In each particular project, the target community is represented by a different population group: the preschool age group, older school students, youth, adults, pensioners, and the inclusive group. Aside from the peculiarities of the community, the students are required to develop facilities according to the type of activity, which they are free to choose from the list: recreational, sports, educational, and healthcare and rehabilitation. Another condition is to consider the requirements for the project introduced during the pandemic. These include the separation of the flows of people, observance of social distance, disinfection of areas, and much more.

The objective of the third stage is the visualization of the project, its original artistic and aesthetic embodiment, the embodiment of the concept that considers its artistic merits and arouses the interest of both the public and professionals. As noted in scientific works, "the central point in the process of design is that the students master new types of artistic creation, which contributes to the development of the author's position of the designer expressed in a motivated attitude toward professional activity" (PRISHCHEPA; VLASOVA, 2017, p. 238).

Initially, it was foreseen that such a complex task would be difficult for high school students with no special artistic training. The developers of the program were ready for certain errors in the artistic and graphic presentation of the design project, but given the graphic errors, it was necessary to trace the originality of the artistic idea. Even in the presence of some violations of graphic culture, the original design idea is to be evaluated. At the end of the main stage of the course, the students were offered unique individual projects assignments

to be completed through computer graphics, the projects were defended in the online format. The design and architectural projects were evaluated by a highly qualified jury – experts in the field of psychology of artistic processes, architects, designers, and art teachers who identified problematic aspects in the works, determined performance ratings, and offered recommendations for improving the educational process.

Results

The study reveals some general and particular problems of the development and education of high school students that are characteristic of the current reform of the education system. One of them is the generic type of thinking. According to experts, this comes as the result of the Unified State Exam and preparation for it, the commercialization of the goals achieved, the decisive aspect being the demand of the population for this product, the pursued goal of selling “at the highest possible price”. This describes the use of the principle of the least effort to achieve the greatest result, with the greatest result being profitable to sell. Accordingly, a general trend of self-preservation and personal survival is observed. Another critical indicator is the low level of collective creativity. The interests prioritized are personal rather than collective. Thus, more than 70% of high school students demonstrate stable parameters of worldview aspirations focused on attaining material goods. About 20-22% of the students adopt a wait-and-see attitude. The individual is influenced by the majority, the recipient capable of original thinking does not dare to defend it, as being in the conditions of a closed round-the-clock educational cycle causes concern for one’s psychological comfort. The motivation for an open, authorial, creative process in the short time frame of the seminar has not been effective. The methods of convincing students that originality, exclusive thinking, and vivid graphic images are precisely the basis for success were applied in different ways and at different time intervals.

Conclusion

We arrive at the conclusion that the recipients are not prepared for the creative form of thinking. Therefore, all the employed ways of motivating them have not changed the established way of thinking. The students were unable to transform their projects into the required design and architectural images. Nevertheless, the course ensures high interest in the learning process among both students and teachers. The program serves as a mediator that

activates creative processes in students and outlines the symptoms of emerging ideas on transforming the surrounding reality, considering the acquired professional toolkit. Further development of these forms of training will only contribute to the qualitative professional growth of both architects and designers.

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