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WAYS OF FORMATION OF ARCHITECTURE OF EDUCATION'S NON-FORMAL INSTITUTIONS IN MODERN CONDITIONS IN UKRAINE

SPOSOBY KSZTAŁTOWANIA ARCHITEKTURY NIEFORMALNYCH INSTYTUCJI OŚWIATOWYCH W NOWOCZESNYCH WARUNKACH NA UKRAINIE

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Abstract

Ways of formation of architecture of education's non-formal institutions in modern conditions in Ukraine are discussed in the article. The aim of the article is to describe some problems of architectural formation of non-formal education establishments and determine main ways to resolve this problem. In Ukraine, the existence of non-formal education covers the following areas: out-of-school education, postgraduate and adult education, civic education (diverse activities of public organizations), school and student self-government (due to the possibility of obtaining managerial, organizational, communicative, and other skills) educational initiatives aimed at developing additional skills and abilities (computer and language courses, hobby groups, etc.). The adaptation method for regulatory framework to do more flexible typology of non-formal education institutions is proposed. This method is called "related typology" detection and it lies in the typological field and is based in world tendency of cooperation of functions.

Keywords: non-formal education, institutions of non-formal education, cooperation of functions, related typology

Streszczenie

W artykule omówiono sposoby kształtowania architektury nieformalnych instytucji oświatowych w nowoczesnych warunkach na Ukrainie. Celem artykułu jest opisanie niektórych problemów formowania architektonicznego placówek kształcenia pozaformalnego i określenie głównych sposobów rozwiązania tego problemu. Na Ukrainie istnienie edukacji nieformalnej obejmuje następujące obszary: edukację pozaszkolną; kształcenie podyplomowe i dla dorosłych; edukację obywatelską (różnorodne działania organizacji publicznych); samorząd szkolny i studencki (ze względu na możliwość uzyskania umiejętności kierowniczych, organizacyjnych, komunikacyjnych i innych) inicjatywy edukacyjne mające na celu rozwijanie dodatkowych umiejętności takich jak kursy komputerowe i językowe, grupy hobbyistyczne itp. Proponuje się metodę adaptacji ram regulacyjnych do bardziej elastycznej typologii placówek kształcenia pozaformalnego. Metoda ta jest nazywana wykrywaniem „powiązanej typologii”, znajduje się w obszarze typologicznym i opiera się na światowej tendencji do współpracy funkcji.

Słowa kluczowe: edukacja nieformalna, instytucje edukacji pozaformalnej, współpraca funkcji, typologia powiązana

1. INTRODUCTION

In recent decades, the complexity and speed of social development has been constantly increasing. And the faster changes occur in society, the sooner the previously acquired knowledge and existing competencies become obsolete. In the late 80s and early 90s of XX century the period of mass informatization of society has started. Scientists paid attention to the amount of information produced by mankind. So, in the 1970s the

total amount of human knowledge has been doubling in 10 years, in the 1980s – in 5 years, in the 1990s – annually, at the beginning of the XXI century that has become a matter of months [1]. The French sociologist P. Berto introduced the concept of “half-life period of competence”, which means that after a certain period of time about half of the knowledge acquired by a person during his studies becomes outdated. In the 1950s this period lasted approximately 10 years,

now scientists are talking about 3–5 years, and in some areas of professional activity this process goes even faster (Fig. 1) [2].

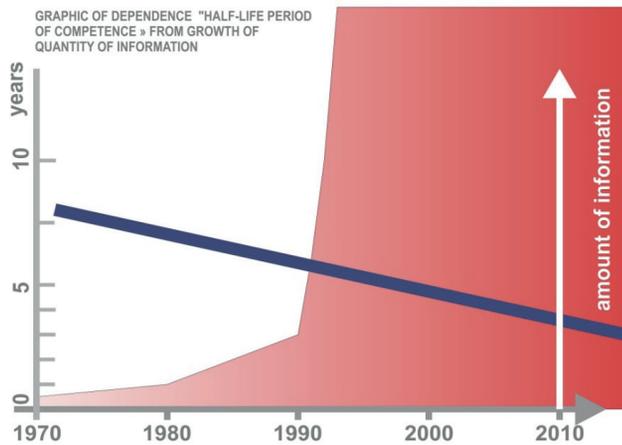


Fig. 1. Dependence of the “half-life period of competence” (P. Berto) from the growth of the amount of information. Source: The scheme developed by Iryna L. Kravchenko according to sociological and pedagogical researches [1, 2]

The current situation led to the notions of “continuous education” and “lifelong education” [3]. The implementation of the concept of continuous education, in turn, made it necessary to pay attention to various types of education, since the existing education system was clearly late in responding to the challenges of the post-industrial information society, which requires constant growth and/or changes in competences from a person [1].

2. BASIC THEORY

The concept of non-formal education has several definitions. A common definition is: non-formal education is an educational process that takes place outside educational institutions (schools, colleges, universities, etc.) and, as a rule, does not lead to official certification. And, at the same time, non-formal learning is systematic; it defines goals, learning outcomes, learning duration. According to the “Law of Ukraine of 05.09.2017 No. 2145-VIII On Education”: non-formal education is education that is acquired, as a rule, according to educational programs and does not provide awards of educational qualifications recognized by the state according to educational levels, but may result either in acquisition of professional and/or in being awarded with partial educational qualifications [4].

In Ukraine, the existence of non-formal education covers the following areas: out-of-school education; postgraduate and adult education; civic education

(diverse activities of public organizations); school and student self-government (due to the possibility of obtaining managerial, organizational, communicative, and other skills) educational initiatives aimed at developing additional skills and abilities (computer and language courses, hobby groups, etc.). Recently, several third age universities have begun providing educational services to senior individuals (Fig. 2) [5].

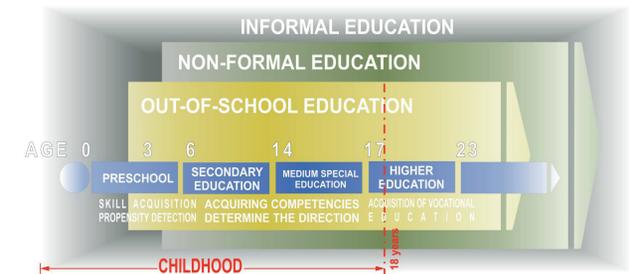


Fig. 2. Types and periods of education. Source: The scheme developed by Iryna L. Kravchenko according to educational system existing in Ukraine [4, 5]

Usually, during the educational process in a general education institution, children and teens attend circles and clubs of various kinds. This, for example, may be a combination of various sports sections of primary and secondary educational levels, as well as after-school activities of artistic, scientific, technical or artistic-aesthetic nature. Such an approach not only contributes to the child’s diverse development, but also helps to determine the future direction of education and professional orientation.

But, ensuring the optimal combination of such functions in educational institutions and making sure that continuous access to additional education for all groups of the population remains unhindered, if necessary, are quite problematic questions. A number of factors influence the formation of educational institutions of a new type. These are, in particular, social, demographic, territorial, political (education reform and decentralization), technological, economic and ecological factors of influence [8]. Factors cause problems, and they, in turn, the emergence and development of certain trends that are partially or fully designed to optimally solve these problems. In the course of the study, several major trends in the development of the architecture of non-formal education institutions in Ukraine are identified in this article by the author. Largest of those trends are: cooperation, in-depth specialization, integration, and adaptive architecture. Further in the article it is proposed to consider the most powerful trend, which is cooperation, more thoroughly.

3. RESULTS AND DISCUSSION

From an architectural point of view, the problem of forming a typological network of non-formal education institutions is as follows.

Firstly, as mentioned above, pedagogically and according to scenario of the functioning of non-formal education institutions, they are very similar to other educational institutions and, basically, at first glance, they do not require special buildings. In our time, such centers arise almost spontaneously and function in premises, adapted, rented, and the like. But this does not always mean optimal functioning.

Secondly, on the part of pedagogical science, out-of-school education is fairly allocated by a separate link, since it covers the age groups of children and adolescents who are at the stage of identifying their interests and acquiring skills of primary and basic educational level of out-of-school education and receiving formal education in general educational institutions. From the architectural point of view, according to the author, it makes sense to conduct research in a direction that typologically combines the notions of extra educational institutions (extra-curricular, non-formal, life-long education, etc.), since processes occurring in buildings with such specificity are the same – Educational. The functional and planning difference will be in the direction of the non-formal education itself: artistic and aesthetic, artistic, scientific and technical, sports, etc. So here exists a problem associated with a large number of typological branches, and in combined establishments – with capacity, location and mode of operation.

Thirdly, the system of functioning of non-formal education establishments is closely connected with the institutions that provide formal education at all levels. There is a question of schedule – the lessons are ending, various circle classes can be held at the school premise, which, in fact, happened during the USSR and is happening now. At higher educational institutions, small academies of sciences and various institutions of non-formal higher education carry out similar work. But at the same time, the education reform in Ukraine has shown a number of problems in such way of functioning. In connection with the processes of decentralization, the formation of united territorial communities in the regions, the network of out-of-school institutions is being optimized by combining specialized institutions into multipurpose ones [6, 7]. Ungraded schools are closing, and with them the out-of-school education institutions that functioned on the premises of these schools. That is,

for the time being, such optimization does not help to bring the possibilities of out-of-school education closer to people, but alienates the non-formal/out-of-school education services geographically from potential users.

These problems force us to reconsider the functioning of institutions of additional education and closely look at the trend of cooperation, that appears here in several aspects: cooperation of functions, various age groups, architectural and planning techniques, architectural volume and landscape. In order to bring the services of non-formal education institutions closer to potential users and while relying on the global tendency of cooperation of various typological units [8], it was proposed to investigate the degree of symbiotic combination of non-formal establishments, including out-of-school education (according to the updated list of Ministry of Education and Science of Ukraine) of various levels and capacities, with buildings that typologically belong to different categories and are regulated by Ukrainian state building codes. For comparison, the chosen method of detection, the so-called **related typology**. It lies in the following and consists of four parameters:

first parameter – to identify from the types of buildings that are compared, the main groups of premises which are necessary for the educational process (classes, laboratories, workshops, etc.) or to determine the possibility of their design;

second parameter is to identify groups of premises necessary for the full functioning of the main institution and symbiotic establishments (dining room, buffets, WC, ancillary rooms, etc.) in accordance with the schedule (mode) of operation and throughput;

third parameter – to determine the normative presence of recreational zones of the main institution theoretically, or to determine the possibility of their arrangement, with the aim of building a common communicative space with a symbiotic establishment;

fourth parameter is to determine the normative availability of the main institution's territorial resources in order to arrange a common public informative space.

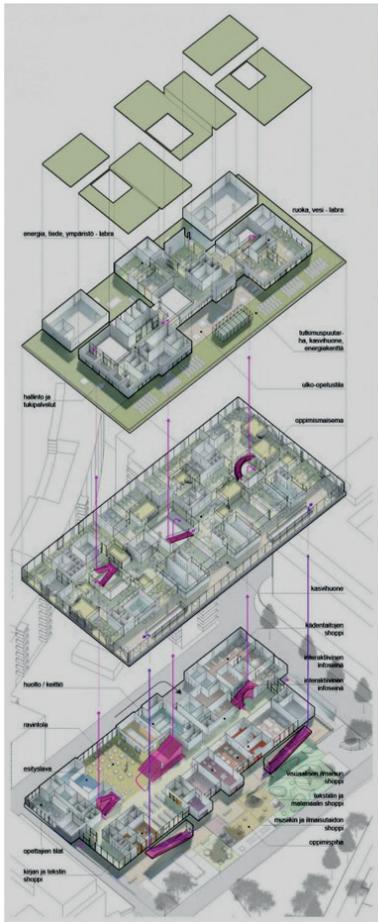
These parameters are identified not just for new educational buildings, but also for existing ones, which should be adopted for the new educational concepts.

It was revealed that certain typological “flexibility” as symbiotic objects in this combination is inherent of multifunctional out-of-school education establishments, primary specialized art educational

institutions, children’s and youth clubs of various orientations, and the like. It is assumed that the buildings of the institutions of formal education for various purposes and different capacities will theoretically be attracted to the symbiotic combination – they have a high degree of typological integration and tend to become more open pedagogically, so it is necessary to be careful about the development of new structural and functional models of such types of buildings. It is not only about taking into account the above factors when designing new educational buildings. It is impossible to ignore the adaptation of existing building types to new conditions. The processes of non-formal education can take place in classrooms, laboratories, lecture classrooms and sports halls of buildings of formal education institutions. Yes, we understand that such processes are a matter of scheduling, but there is a need to find opportunities and to design architecturally a more optimal educational environment.

A comparative analysis of existing architectural objects is one of the ways of this research. The analysis includes educational buildings that, to the author’s opinion, are similar in function to institutions of non-formal education of a new type. Let’s analyze a couple of such objects according to parameters shown above.

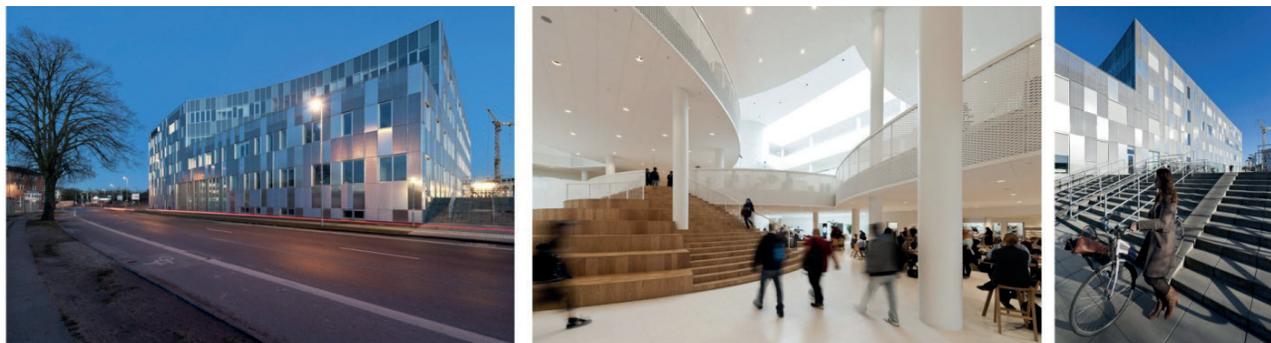
First of them is Jätkäsaari School in Helsinki, Finland, the winning in two-phase open competition 2015. The project made by Lundén Architecture Company in collaboration with Ramboll Finland Oy and Granlund Finland Oy (Fig. 3). The proposal ‘Three Cities’ explores how a paradigm shift in school education can affect the physical learning spaces. The proposed school is composed of three different “cities”: ‘The Street’, a city for culture, expression and community, ‘The Learning Landscape’, a city for creating knowledge and ‘The Lab’, a city for environmental and natural discovery. All three “cities”



- First parameter** - “The Street” & “The Lab”
- Second parameter** - “The Street” (restaurant), WC on each floor, etc
- Third parameter** - recreation premises has become a space for communications and learning
- Fourth parameter** - “The Learning Landscape”

Location: Helsinki, Finland
 Program: Comprehensive School
 Size: 8 000 m²

Fig. 3. Helsinki, Finland, Jätkäsaari School. Winning in two-phase open competition 2015. Lundén Architecture Company, in collaboration with Ramboll Finland Oy and Granlund Finland Oy [9, 10]. Source: The scheme developed by Iryna L. Kravchenko according to analysis of the architectural object [4, 5] and “related typology” method, presented by the author



First parameter - classes & laboratories are perimetally located

Second parameter - kitchen & food courts on ground floor with outside terrace, WC on each floor

Third parameter - "Agora", central communication space

Fourth parameter - main function is in "Agora" & is partly placed around the building

Location: Odense, Denmark

Program: Adult education centre

Capacity: 1 300 students



Fig. 4. Adult education centre for the VUC FYN & FYNs HF courses in Odense, Denmark CEBRA in collaboration with E. Pihl & Son and Hundsbæk & Henriksen [11, 12]. Source: The scheme developed by Iryna L. Kravchenko according to analysis of the architectural object [11, 12] and "related typology" method, presented by the author

have distinct identities. The atmosphere of each 'city' manifests through spatial organization and materiality of the learning spaces. 'The Street' on the ground floor aims for openness. Its facilities are shared with the community during the school day. 'The Learning Landscape' on the first floor consists of student home cells that are accessed through a communal glazed terrace. The landscape evolves from the traditional classroom model by offering a wider variety of spaces with different conditions for learning. 'The Lab' on the second floor allows students to learn about the natural world, such as nutrition and sciences, through the use of laboratories and a green roof terrace with energy and food production [9, 10].

The object is typologically positioned as a comprehensive school, but not in the usual sense. This concept is interpreted much more widely in the way of this object's functioning. In addition to our usual understanding of this object, there is a combination of educational processes arises for adults as well, which is the lifelong education.

The second object is the Adult education centre in Odense, Denmark (Fig. 4). Danish firm CEBRA has, in collaboration with E. Pihl & Son and Hundsbæk

& Henriksen, won the competition for the new teaching building for the VUC FYN & FYNs HF courses. Located in a central position near the train station and harbor in the city of Odense, the HF & VUC Fyn adult education centre ties the inner city with the harbor side. The building's unassuming exterior contrasts with its interior openness, which creates a unique and varied learning environment for 1.300 students. Carsten Primdahl, architect and co-founding partner of CEBRA says: "The basic idea was to design a school that doesn't look like a school. The general conception of a completed educational degree as a security to fall back on is subjected to a fundamental review. We have realized that we must learn constantly in order to adapt to an ever-changing reality. An adult education centre like HF & VUC Fyn will play an essential role in maintaining a society's competences in the future. Therefore, it is essential that it is built on lasting values that revolve around the individual. The building has to adapt to the student and not the other way around [11, 12].

That is why the project focuses on creating a building with specialized, yet diverse environments, where students can find spaces and settings that match

their own preferred learning style". The design aspires to create a versatile framework for a learning culture, in which lifelong learning and education form an inherent part of the adult individual's personal growth. The building is organized around a central space, the Agora, which functions as a forum for social activities. The rounded shapes form a series of balconies and platforms with shifting overlaps across the atrium in order to create single, double and triple height spaces with varying degrees of daylight, transparency and intimacy. Along the building's outer edges are quieter, more intimate spaces for studying or reading and learning. Roofed outdoor spaces and terraces on upper floors provide views over the city as well as relaxation areas and outdoor study areas. This vivid and bright building at the heart of the community keeps adults up to date with the latest educational trends and encourages lifelong learning [11, 12].

This architectural object is combined premises for traditional forms of education (classes and laboratories, premises for group and individual learning, etc.) with modern learning activities space. The symbiotic combination here is taking place both in the educational concept and in the interpretation of the architectural space for education.

The main architectural planning characteristic of these two objects shown and analysed above is, according to the author, the new way of creating educational environment by combination of recreation places, learning premises and communication spaces into the one functional architectural environment.

4. CONCLUSIONS

The current trend towards cooperation of functions in various educational institutions is closely related to the rethinking of education as a process. It is transforming and acquiring other forms in the modern world. Similarly, the educational space should be transformed and adapted to the needs of today.

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Non-formal education is a fairly new term for Ukraine. Now all over the world there is a need to acquire skills and competencies throughout one's life, to improve and develop already acquired professional skills and even to acquire a new profession. Any object of public architecture today must perform a certain informational or/and educational function. For the full functioning of non-formal education organizations in different cities of Ukraine, several factors should be taken into account. When designing new buildings, it is necessary to take into account certain educational processes that are currently changing due to reforms in the educational sphere. During the reconstruction (renovation) of existing building types, a balanced approach to the integration of such cells should be considered. When it is necessary to combine functions in public buildings, architects should be guided by optimal indicators of the parameters of a symbiotic combination, such as: to take into account the type and direction of the non-formal education establishment, its capacity and throughput in accordance with the location (city, district, neighborhood, quarter, village, etc.).

There is an urgent need to revise and supplement the existing regulatory framework when designing new type of non-formal education institutions. The objects considered in the article vividly illustrate the tendency towards cooperation. In the context of decentralization, such educational centers can answer the needs of united territorial communities regarding the creation of public administrative and educational complexes that meet the requirements of today. Therefore, according to the author's opinion, one of the most promising areas for the development of architecture of non-formal education institutions is the functional cooperation of non-formal education institutions with other architectural typological links.

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