

Review integrity index in architecture and urbanism studies in USA

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Abstract: In this paper, integrity index in architecture and urbanism studies in USA was reviewed. urban system is so complex that it requires an integral involvement through different levels. The conclusion is that it is needed to invest more energy in improving the existing study system in USA and in establishment of a higher level of integrity in the implementation of the study process. What we experience with our bodies and senses differs dramatically from the theoretical concepts of pure space as proposed by scientists. Space can be defined by surfaces, lines, points. But besides this obvious physical nature of the space there exists its character, not measureable as easily – the phenomenal space. Our own human experience of space is quite different from a hypothetical concept of pure space because we are embodied beings and experience our environment with all senses available to us.

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1. Introduction

Architectural and urbanism education in USA started in 2000, and has been developing on the systematic synergetic strategy of urban studies and architectural programs, interacting at different levels of studying, communicative relationships and tendency towards universal knowledge transfer.

The education in the fields of architecture and design should encompass those very complex sensory phenomena of the space and to attempt to pose questions about them and propose solutions. The challenge becomes to introduce such pedagogical practices and educational design strategies that would reflect the profoundly rich space experience.

In order to search for experiential activities to explore above mentioned issues we could turn to art. As Vitruvius mentioned in his groundbreaking work on architectural theory: architecture is a combination of several arts and abilities. Today, postmodernity opened relationships with the public which in turn led to a creative dialogue between art and architecture. Cooperation ensued between architects specializing in the designing process, aesthetic discourse and spatial and conceptual issues as well as landscape projects. This model of work has developed in the recent years and scientists are now often working with artists, musicians with architects.

Architecture and urbanism studying platform in USA was transformed according to the Bologna system of studying through all levels of implementation of instruction. Transformation of the classical system in Bologna system of education in 2007. enabled the explicit transfer of knowledge, flexibility of teaching process, more intensive cooperation, academic exchanges of experiences and interactions on different

levels. The intensity and complexity of information technologies and possibilities as well as their availability enabled connections and dialogue in the widest sense.

On the other hand, architecture and urbanism as a complex discipline that start from the existential social needs and reach to the most complex challenges and aspirations, involve the complex approaches and complex relations.

Professional educational environment from architecture and urbanism aspect is integral, includes the study of forms and models of urban space planning to architectural structures, details, materials, environmental challenges, as well as new paradigms of shaping life and work in the community. This requires the involvement of various disciplines and forms of knowledge, for forming competent and productive response to modern challenges of the real world.

Global processes more and more are shaping the local built environment. Unified knowledge can meet the challenges of the third millennium in order to support sustainable development. University knowledge implies the adoption of the of transdisciplinary concept. Studying of architecture and urbanism in the transdisciplinary context is of particular importance for a sustainable future.

The methodology of this study consists of the analysis of soundscape: the sound environment of the city. The sound recordings consisted of a broad range of sounds uniquely significant for a given area. Selected recordings were used to create a sophisticated map of the area. It included sound recordings of each of the walks with specific information about the area and the location of the recording. This recording become a sound reference for the geographic map of

the city and could serve as a type of soundtrack to the city.

2. Studying strategies of architecture and urbanism in USA

Architecture and urbanism as wide fields of action include the complexity of the educational system. The complexity implies multi-dimensionality and comprehensiveness of the study program, stratification as well as cooperation between all factors and levels of an education process. On the other hand, cities are explicit indicators of knowledge, architectural and cultural strength and overall social development. Knowledge and skills are the pillars of development. United engaging discourse and practice and different professional competencies enables productive management of the urban system, its control and improvement.

The final composition titled the "Sound of the City" was a unique experimental performance. Each audience member could interpret it differently using their own sensory experiences. The emerging non-visual representation of the space and of the architecture of the city was a unique way to stimulate the architectural creativity of the performers as well as to stimulate the audience to look at their environments in a completely different way.

Complexity of architecture and urbanism, as a discipline, suggests and obliges their layered studying that is customized to dynamic social changes and modern conditions of life and work. An important direction in the professional educational environment is to promote the new forms of urban culture and society development, to promote the development of new forms of urban culture and society, through integral engagement, which has been embedded in strategic methodological framework oriented toward research line, where the educational process is not only companion of social change, but its driver, and it can only be achieved by integral and healthy thinking and acting.

Twenty-first century implies flexibility and globalization of knowledge. The complexity of urban systems and complexity of space user's needs requires a complex analysis of various factors and influences, which shape the built environment and help in the design process of architectural and urban programs.

Architectural and urban education in USA is oriented towards increasing connections in all directions. However, it is necessary to invest more energy to increase the networking of knowledge to the next level and to intensify the forms of communication in order to complete the preparation of professionals for dealing with complex real-world issues.

2.1. Methodological basis

The methodological basis of architecture and urbanism studying in Montenegro integrates: theoretical knowledge-integrative theoretical engagement (lectures, literature, Internet); communicative levels of studying through discussions, debates, seminars, workshops and exchange of experiences with other communities; practical research work with emphasis on case studies based on the principle of diagnosing a certain problem using analytical, empirical and other methods, specific interventions and finally presenting positive solutions through exhibitions and publications; experimental work, and at the highest level; scientific research through qualitative and quantitative advanced research methods in interdisciplinary context of urban development and context of integrity of the urban system.

The methodology of urban education in Montenegro is directed toward continuous and interdisciplinary education, and with a tendency to develop transdisciplinary-studying models, which, as such, can meet the challenges and demands of a complex system such as urban in the new century of life and work. The combination of urbanism, architecture and landscape architecture, through the unity of theory and practice as well as the concentration of the wide field of disciplines: socio-economic, ecological, historical, geographical, psychological, philosophical and others and their united action with participation of other social structures, opens the door for intensive possibilities and authentic values.

The city was mapped using traditional visual methods but, in addition, a sound map was created to provide unique sound to each separate city section. Each location was additionally represented by films and pictures as well as narratives of personal experiences of those who focused on that particular location. The final product was a unique multidimensional and nontraditional architectural representation of the area with a map as well as soundscapes and individual narratives creating a sophisticated cityscape.

Exploring of the built environment from different angles through teamwork, healthy atmosphere, correlation and logical thinking with respect to the context and importance of "place", has a primary role in the educational environment. However, development of individual sensibility and importance of forming an objective reality based on the subjective instances of judgment is not omitted. The freedom of creation is emphasized, establishing personal relations towards the built environment and towards the complex forms of action.

The aim of education is the production of competent professional intellectual elite for the specific requirements of space and time. This aim is attainable

only if we are committed to continuous and integrated model of studying, for layered understanding of the urban environment and the humane and healthy view of social values. These are also the basis for the development of environment of permanent cultural paradigms.

2.2. The unity of theory and practice

In contemporary architectural and urban practice, every professional product is associated with the theoretical discourse and they are inseparable. Our view is that the integrated treatment of theory and practice in education is essential for the formation of professional life in the urban environment of the new century. Theory and practice with the common platform of knowledge and competence, coordinated, equitable, unique, action can encourage, empower and develop new models of the living space designing, necessary for the development of a sustainable system. Putting theory into a practical context, and vice versa, through continuous review of the adopted theoretical principles and their modification through the project as well as a review of models from practice, through theoretical research, is of the inevitable importance. Architecture and urbanism studying in Montenegro insists on the fact that with specific interventions in architectural design and urban planning precedes integrated research phase.

Universality of practical solutions slows down development system, and every mistake leaves lasting consequences on the city and citizens.

The lectures from the domain of practical experiences that overlap with the theoretical are continually introduced within the study program. In addition, there is a system of implementing professional practice in the education process through active participation of students in the work of the appropriate designing bureau. The basic orientation of urban academic education in Montenegro is direct application of theoretical knowledge in real life, where the university institution is seen as a symbol of the unity of theory and practice.

2.3. Unity of urbanism, architecture and landscape architecture

Space and urban planning and design, architectural and landscape design are scientific and technical activities that exclusively in synergy enable sustainable urban system. They are interacting, supplementing, and containing each other. Space planning, without thinking about architecture and vice versa, can not go in the direction of development of the compact urban system. Through the process of academic studying of urbanism in Montenegro, only architecture that "belongs to the city" and urbanism with "physical dimension" is accepted. Architecture must respect the context and requirements of a particular place, devoid of abstract thinking of space.

These three areas represent three integrated layers, which form the physical structure of the city. The importance of their action indicates the concept of "landscape urbanism" as a wide scope of acting that integrates knowledges from architecture, urbanism, landscape architecture, planning and design, as well as other factors of space.

Urbanism as a framework for urban interdisciplinary discourse "(Lindholm, 2008). Integrated layering of urbanism and architecture studying in Montenegro is also reflected through this aspect.

2.4. The integrity of urbanism and architecture with other disciplines

Besides urban, architectural, building dimension, the city is, at the same time, socio-economic, ecological, geographical, geological, hydrological, political, philosophical, cultural, and psychological ambience. The importance of the participation of each of these disciplines is imperative for sustainable development of the system.

In addition, urban development should involve all actors of social life that shape it according to their needs and philosophies, developing an environment that synthesizes a variety of activities and social processes. In addition, the city requires the environmental sustainability of the system, and that is possible by establishing a balance between natural and built environment courses. Environment protecting is essential for the quality of environment in which people spend their working and living period. A city is a centre of different social processes, possibilities, place of psychological, philosophical orientation, place of cultural interpretation, economic opportunities. Interdisciplinary educational program strategy indicates the relevance of other disciplines, such as physics, mathematics, and biology and so on. In addition to previous, many disciplines significantly help in understanding city as a complex functional system.

The exercises described above represent a highly multidisciplinary approach, linking such disciplines as architecture, arts, electronics, sociology of the city, anthropology and media design. It is based on the assumption that most advanced and promising phenomena are emerging on the very edge of the blurring borders between traditional disciplines. The problem of training new architects is widely discussed within Europe, as for example during panels of the European Association for Architectural Education. It is becoming evident that future practitioners will have to establish their highly-specific competences and strengthen entrepreneurial capabilities to successfully face global challenges. The proposed new kind of educational activities promote new methods for teaching architecture.

2.5. *Interuniversity cooperation*

The need for increased intensity of development and improvement of the educational process is more stressed at the beginning of the second decade of the 21. century. Global perspective obliges to the thoughtful response in all areas of activity. Exchange of knowledge and experience is very important for creating a productive educational atmosphere. Interuniversity connection has a special role in the crystallization of the content of the teaching process.

Studying architecture and urbanism in Montenegro is directed towards communicative engagement of different universities through united activities. Seminars, workshops, lectures, exchange of students and exchange of lecturers with other communities. Within this context, new conditions of combining educational elements are created that are positive examples of other schools and that allow a review of its own commitment through studying about others. Establishing of the relations that allow the exchange of knowledge, methodological characteristics, orientation and perspective, creates conditions for a more complex understanding of the space and time requirements in a global context. In addition, communicative relation allows the improvement of educational culture and discipline and contributes to the creating of desirable educational environment whose primary task is routing of the directions for sustainable development of urban space and urban culture of high value.

3. **Perspectives of studying architecture and urbanism in the Montenegro-Model of transdisciplinarity**

Various authors representing the importance of transdisciplinarity on the universities start from the premise that the study of the complex issues of the modern world is not possible in a disciplinary context. The globalization of knowledge is essential in the third millennium. Transdisciplinarity at the universities is a condition for sustainable development (Nicolesku, 2014).

Authors who are dealing with transdisciplinarity in architecture and urbanism (Despres & etc 2014), indicating the importance of the complex understanding of the problem, its complexity and cooperation between different actors of society and forms of knowledge. The interaction between different disciplines, between different forms of knowledge and different actors of society is imperative for productive understanding of urban space as a plane of objective reality that itself is multi-dimensional and complex. The synergy of various disciplines in the research process creates an objective vision of designing an urban environment. The urban environment as a scene where complex life processes are interpreted, as a place

for interaction of social, cultural, political, intellectual, educational, experiential and other differences, exclusively in the synergy of all its factors can build and develop the models for sustainable urban systems.

The education transdisciplinary action intends to avoid the fragmentation of knowledge for the benefit of communicativeness (Andalécio, 2009). Transdisciplinary as the strategy for development of educational engagement, but not exclusively based on the theoretical principles but transdisciplinary as a way of thinking and acting. Diverse research and experience from other communities shows that in most universities, and even those who are profiled as the faculties for transdisciplinary studies, where transdisciplinarity, from the name of the faculty to the program itself, has been officially adopted as a model in the theory of studying, teaching is carried out in the disciplinary framework (Andalécio, 2009). This confirms the complexity of application of this methodology. Transdisciplinarity as a concept, appeared in 70-years of 20. century, and gained in importance only two decades later, when the two streams appeared, treating this term by noting the importance of routing one-dimensional classical thinking towards multidimensional that transdisciplinarity accepts (Klein 2004). Transdisciplinarity is based on complexity, layering, compaction, communicativeness but also specifics that include different perspectives. The importance and actuality of the term indicates a need towards new, more productive studying models that follow the requirements of global time and dynamics of social changes. Professional education is of vital importance for the perspective.

Transdisciplinary involves consideration of professional education methodology at a higher level. In this region, it has recently appeared, mainly at the level of discourse. Interdisciplinarity as an essential feature has an identification of certain attitudes and issues that can not be explained through the disciplinary methods and theories and making diagnosis of complex and systemic problems in practice. By observing of educational engagement in a wider sense, it can be concluded that productive development of the overall urban culture requires education integration through approaching of natural and social sciences as well as the implementing of those new that have not yet strengthened its position in the actual time. That is, it seems, at the same time, an important pillar for the sustainability in the global environment.

Urban expansion and global processes indicate the importance of the methodological directions of analysis, researches and specific interventions in urban space. Human activities produce a wealth in cities, and parallel with that, research shows that poverty and

fragmentation occupy a significant position in the urban system.

The choice of methodology for studying and understanding of the city and its architecture and routing the flows of urban development opens the way towards a sustainable urban system. Researches confirm that the role of the transdisciplinarity in the new century is essential.

4. Conclusion

The requirements of the new century oblige on thoughtful action in all areas of an engagement. Educational environment, as the main driver of social processes, requires strong and productive methodological framework and conceptual strategy. Sustainability in the global time is enabled by productive activities and recognisability of the system. Response to the complex requirements of time is possible by joint activities. This implies the integrity of all structures of society and of all fields of action through all levels.

The academic environment is a particularly sensitive issue and it implies the inclusion of all forms of institutional infrastructure and researching diagnosing of the key issues and the cross section for its improvement. Academic study programs, personnel policy, transparency, universality and innovative visions of development are the basis of productive knowledge. Acquiring of skills and competence, creativity, critical thinking, international cooperation, teamwork in the multicultural contexts contribute to a more complex approach of the problem. Academic architectural and urban orientation in Montenegro is based on the integral program and urban conceptual strategy and integral methodological platform. The synergy of various disciplines, natural and social, as well as theory and practice, science and profession, opens space to the complex challenges and requirements of urban space in the third millennium. In this context, transdisciplinary educational orientation as the highest level of an integration is an important form of thinking through all levels of education. United systems of action in various areas of research, dialogue, interaction, synergy of different forms of knowledge are supports of rising the way of intense urban development of far-reaching range. Research shows that it is necessary to invest more energy in the development and implementation of a transdisciplinary study system in USA, in the areas of architecture and urbanism.

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