Chapter 31

Transdisciplinary Research in Sustainable Scientific Education in the Field of Urbanism and Architecture

Svetlana Perović
University of Montenegro, Montenegro

ABSTRACTS

The chapter presents a case study based on transdisciplinary research, which was conducted at the Faculty of Architecture in Podgorica and is an innovation in architectural and urban practice of higher education in Montenegro. The study is based on the view that autonomous action of disciplines in the case of architecture and urbanism as multidisciplinary activities is limited, and an integrated approach to solving complex problems in the urban system is required. A global approach to research and solving urban issues is an important actor of sustainable development, where universities are central in this process. Collaborative educational discourses with a high degree of cooperation can develop an adequate platform for responses to the complex issues of the urban system. Producing experts with a developed awareness of a comprehensive understanding of the problem and transdisciplinary collaborative knowledge can strongly contribute to sustainable improvement, control, and management of urban spaces.

ORGANIZATION BACKGROUND

The study was conducted in 2013 at the Faculty of Architecture in Podgorica, Montenegro, a primary montenegrian institution of higher education in the field of architecture and urbanism.

Academic architectural and urban orientation in Montenegro is based on the integral program and urban conceptual strategy and integral methodological platform (Perovic, 2013).

Architectural and urbanism education at the University of Montenegro started in 2002 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(Perovic, 2013).

Various authors representing the importance of transdisciplinarity at universities (Andalécio, 2009; Nicolescu, 1998; UNESCO, 1998) 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 (Nicolescu, 1998).

Authors who are dealing with transdisciplinarity in architecture and urbanism(Després, Vachon& Fortin, 2011), indicate the importance of complex understanding of the problem, its complexity, and cooperation among different actors of society and forms of knowledge.

In this regard, there is importance in the implementation of transdisciplinarity as a model to better define the complex problems and identify adaptive solutions for sustainable development. Transdisciplinary research is directed toward coherence, holistic thinking, collaborative methodology, systematic approach, action, and network activity.

The mission of contemporary higher education in the 21st century implies orientation toward a development strategy for integrated knowledge, which as such, can meet challenges of global processes: urbanization, cultural, and social transformations.

Sustainability challenges require integrated forms of knowledge with a research platform. Transdisciplinary research approach can contribute to a better identification and treatment of problems.

In a time of global changes and dramatic loss of viability from the local to the global scale, science needs to take more responsibility for the problems. In a world characterized by rapid changes, uncertainty and increasing interconnection, there is a need for science that will contribute to the solution of complex and persistent problems (Hirsch Hadorn at al.,2008).In this context, science can largely contribute to the sustainable development of the physical structure of the city and is therefore necessary to reexamine current methods of scientific research in order to improve them. Although in recent decades the number of scientific research developed on a transdisciplinary platform has increased in the world, the strategy is not sufficiently developed at global and local levels. Globally, a general universal model has not been developed; there is an unequal representation of transdisciplinary activity at a local level, while simultaneously the smaller local communities face a lack of a high degree of cooperation and activities that are, in the highest degree, conducted in disciplinary terms.

The complexity of architecture and urbanism as disciplines indicates and commits to their layered studying, tailored by the dynamic social changes and modern conditions of life and activities. An important direction in the professional, educational environment is that through integrated engagement, which is woven into the strategic, methodological frameworks oriented toward a research line, new forms of development of urban culture and society are promoted, where the educational process is not only a companion to social change, but is a starter, and this can be achieved solely by an integral and sound comprehension and action.

The 21st century involves flexibility and globalization of knowledge. The complexity of the urban system and the complexification of the needs of users of space require a complex analysis of various factors and influences that shape the developed environment, and are helping the design of architectural and urban programs.

Educational transdisciplinary action aims to avoid the fragmentation of knowledge for the benefit of communication. Transdisciplinarity is a strategy for development of educational engagement that is

Related Content

Emerging Collaboration Routines in Knowledge-Intensive Work Processes: Insights from Three
Case Studies
Burak Sari, Hermann Loehand Bernhard R. Katzy (2012). *Advancing Collaborative Knowledge
Environments: New Trends in E-Collaboration (pp. 25-39).*
www.irma-international.org/chapter/emerging-collaboration-routines-knowledge-intensive/61183

An Empirical Analysis of Code Smelling and Code Restructuring in Python
Rohit Vashisht (2022). *Virtual Technologies and E-Collaboration for the Future of Global Business (pp. 203-
214).*
www.irma-international.org/chapter/an-empirical-analysis-of-code-smelling-and-code-restructuring-in-python/308195

Interpretation Issues in Monitoring and Analyzing Group Interactions in Asynchronous
Discussions
Tharrenos Bratitsisand Angelique Dimitracopoulou (2008). *International Journal of e-Collaboration (pp. 20-
40).*
www.irma-international.org/article/interpretation-issues-monitoring-analyzing-group/1969

Supporting Electronic Collaborative Experiences at Universities Based on Learning Spaces and
LAMS
Sofia Th. Papadimitriou, Spyros Papadakisand Antonis Emm. Lionarakis (2017). *International Journal of e-
Collaboration (pp. 27-52).*
www.irma-international.org/article/supporting-electronic-collaborative-experiences-at-universities-based-on-learning-
spaces-and-lams/182497

Supporting Collaborative Processes in Virtual Organizations
Ricardo Mejía, Nicolás Peñaranda, Arturo Molinaand Godfried Augenbroe (2008). *Encyclopedia of E-
Collaboration (pp. 589-595).*
www.irma-international.org/chapter/supporting-collaborative-processes-virtual-organizations/12484