

THE IMPORTANCE OF SUSTAINABLE CONSTRUCTION ASSESSMENT FOR THE DEVELOPMENT OF MODERN EDUCATION IN KOSOVO

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Summary

The aim of this paper is to provide a research that introduces the importance of including the design and construction sustainable concepts into the modern education process of Kosovo. The sustainable building codes are essential to the success of sustainable development of Kosovo, particularly in the urban and architectural context, due to the rapid growth of population and its movements; depletion of primary materials, energy and drinking water sources; deterioration of the environment etc. Hence, in absence of appropriate Green Rating Systems (GRS), many of pioneer processes of relevant institutions, especially those which target architectural and construction field, should emphasize the importance of implementing mandatory check list, thus integrating an educational institution into building sustainable management process. In this regard, the sustainable building knowledge at faculties should be updated in accordance to new sustainable concepts. The conducted survey to students and their answers are summarized. Based upon the student's answers to the topics, it came out a proposal to increase the appraiser's knowledge for sustainability.

Keywords: education, questionnaire, sustainable building (SB), building management

1 Introduction

The world population has been increasing dramatically over the last decades. This major increase in world population combined with the lifestyle of today's society is causing a great demand for the natural resources of the planet and environment and in Kosovo as well, e.g. City of Pristina, small trading town with 18,000 habitants in 1910 has grown to more than 550,000 inhabitants recently [1]. This growth, political changes and economic demands in two last decades have impacted inadequately into achievement of sustainable Strategic Plan. Beside few successfully implemented initiatives related with sustainable actions, such as energy efficiency [2], in order to increase a quality of life for all people and their health over the long term, developers have to look closely to the limited natural resources towards harmonic balance of community, environment and economy. [3].

In this context, Kosovo can utilize by bringing sustainable development to the development of community, e.g. conducting critical design and construction issues to the

educational process for sustainable buildings as we know that sustainable development in itself is a learning process. The core knowledge of how to design and construct has to be continually conducted, experimented and tested in regards to key principles of sustainability such as: *whole-system thinking, long-term thinking, recognizing limits and improving livelihoods.*

2 Objective

The aim of this research is to understand the nature of University of Pristina students' knowledge about sustainability in the contexts of their studies in Designing, Rehabilitation, Construction, Urban Planning and Project Management. The following research queries of the questionnaire were fundamental to achieve this aim: what are students' knowledge and understanding of a range of terms and concepts relating to sustainability and sustainable building? What patterns and trends, if any, are apparent in the nature of students' knowledge and understanding? Why do these arise? What, if any, are the stated/perceived needs of the student's practice with specific reference to sustainability?

The findings of this research have pedagogical implications for design, building construction and urban planning/environment curricula's, particularly in relation to current and future needs of the construction industry in Kosovo. The outcomes of the questionnaire will impact the educators and professional bodies to respond adequately to the fast-developing sustainability agenda, legitimate embedded indicators the design and construction curricula, including "changing a paradigm for construction education" [4].

3 Sustainable design and construction and their role on education

The content of questionnaire is related with sustainable design and construction indicators of environmental sustainability and impacts to the sustainable building industry that adversely affect the current and future state of the earth's natural resources, such as: climate, water, land, air, flora, fauna and biodiversity. However, it is difficult to separate environmental indicators from notions of ethics, morals, social justice, human well-being and relationship between consumers and the environment. This could be achieved through the educational process considering that in general sense, the knowledge, learning, skills and habits of a group of people are transferred from one generation to the following through teaching, training or researching [5].

The encouragement of innovative approaches towards sustainable building through educational process might be achieved by activities including competition, symposium, seed funding for building initiatives and grants for research projects such as examples of Integrated Environmental and Sustainability Education [6]. In this context, the focus of the education for environment and sustainability program is to support academic success and life-long learning and to qualify the competent authorities capable of applying knowledge of ecological, economic, and socio-cultural systems to meet current and future needs.

Sustainable design and construction and their role of education in our institution is also measured by research questionnaire in order to evaluate pedagogical implications for the design of built environment curricula. Thus, its quantitative and qualitative data provides exploratory viewpoints of 30 respondents who have a strong personal interest for or are foreseeing an active involvement in the field of sustainable design and construction.

4 Research methods

The prepared questionnaire is distributed to a number of students of architecture whom we knew to have some level of involvement or interest in sustainable building. The collected responses of 30 students were evaluated and synthesized in tables and graphs to show substantive information about student's views of sustainable issues, limitation towards more widespread sustainable building (SB) practice, type of guidelines, programs or syllabuses, their proposal to encourage more educational bodies to adopt sustainable practice, etc.

The questionnaire contains 3 parts: (1) elementary data of respondents; (2) their experience and (3) views, divided into 12 questions and 9 sub question, such as: what have been their main sources of information on SB practices? Is there any relationship between student's knowledge and understanding of sustainability with respect to industry needs? What ideas, people, or events were most influenced in developing of their interests in SB? and other related questions. Generally, they are encouraged to give comments about what sources of new policies or programs would make easier for them to become more involved in incorporating SB strategies in the future.

5 Results

The sustainable building knowledge at education process, measured by conducted questionnaire to students, leads suggestions to integrate educational mandatory appraiser's knowledge within syllabuses: the environmental awareness that energize the will for action; and the environmental skills that supplies the means of achievements. In order to be able to perform fully in their communities and at work, the students generally expect that increased knowledge and skills will enable them to find jobs meanwhile employers expects that young people are able to contribute towards sustainable building industry.

Among all questions, we collected the average results, as following: 33 % of respondents are sufficiently aware about the concepts and methods of sustainable building; 43 % of them think that sustainable building elements are incorporated into curriculums and/or projects; 37 % have taken occasionally obtained an additional professional education about sustainable building design and construction elsewhere; 72 % respondents have very little influence in designing and decision making regarding project specification; or, 80 % of respondents incorporated sustainable building elements into their project without making differences between individual or public building.

The following table (Tab. 1) and graphs (Fig. 1, a, b, c) shows the respondents answers about practice in question no. 8: *to what extent were the following types of sustainable consideration and strategies incorporated* for environmental indicators, such as: a. *land use context (site selection)*; b. *Land Impact (site planning)*, c. *Energy and Water Use*; d. *selection of materials* and e. *well-being*, as bellow:

Tab. 1 The respondents answer about practice in question no.8: *to what extent were the following types of sustainable consideration and strategies incorporated*

a. Land use		b. Land impact		c. Energy and water		d. Selection of materials		e. Well-being		Respondents
No. resp.	% of resp.	No. resp.	% of resp.	No. resp.	% of resp.	No. resp.	% of resp.	No. resp.	% of resp.	
4	13 %	3	10 %	2	7 %	0	0 %	0	0 %	Best practice
6	20 %	4	13 %	3	10 %	3	10 %	7	23 %	Improved practice
20	67 %	23	77 %	25	83 %	27	90 %	23	77 %	There is no measures about codes/standards included

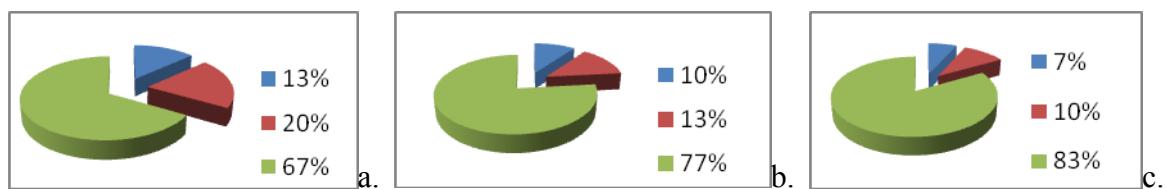


Fig. 1 The precentage of respondents about best practice (blue color), improved practice (red color) and no measures about codes (green color) at: a. land use context (site selection); b. Land Impact (site planning), c. Energy and Water Use.

6 Conclusions

The future graduates of the architectural, building and urban professions are faced with increasingly complex situations, where sustainability needs to be incorporated at the core level of their conscience, thinking and practice; on basis of that, students of architecture – urban development will be better placed to increase their professional studies within a broader context and assisted by certain elements into industry experience and future thinking, meanwhile fulfilling the needs of industry; sustainable education motivates inventive technologies that that the society and environment demands contemporary construction.

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